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Contents

1. Introduction

1.1. European Platformization Dynamics and Contemporary Political Urgencies

The radical innovation[1] of "digital platforms"[2] in the late 1990s[3] has led to a process of *platformization*, a multifaceted transformation[4] of globalized societies.[5]

The way this transformation takes place can be imagined using the metaphor of the *platformization tree*.[6] The platformization tree is a complex system[7] which consists of three interconnected layers: the *roots* of digital infrastructures all leading to the *trunk* of intermediary platforms which *branches* out into industrial and societal sectors that all grow their own twigs and leaves.[8]

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[1] „Radical innovations" are a "rare instance of a new thing under the sun" – they "enable transformations in people's lives and relationships […] An innovation is radical if it is a fundamental departure from established methods or processes and is associated with major changes in society, including social, political and economic relationships. Radical innovations are uncommon because most efforts to improve technology are focused on incremental change, e.g., product improvements and cost-saving alterations in design or production." Mansell & Steinmueller, 2020, 15-16

[2] Platforms can be usefully characterized as "programmable digital architecture[s] designed to organize interactions between users – not just end users but also corporate entities and public bodies." They "also engage in the development of ecosystems or "an assemblage of networked platforms, governed by a particular set of mechanisms ... that shapes everyday practices." Van Dijck et al. 2018: 4 cited in: Mansell & Steinmueller, 2020, 6

[3] Mansell & Steinmueller, 2020, 15-21

[4] "The process of "transformation" can be usefully understood as addressing the scale of society as a whole, and emphasizes in its most general form its processual, long-term, sequential, interdependent, new processual structures and societal ordering- and development patterns yielding character. Transformation is both an *intentional*, *intervening, shaping* and an *organic-evolutionary* developmental process with its own momentum. Historical processes which assume the character of transformation are usually propelled by *both* processes. Transformation is change, which always also includes continuity.
Transformation in this understanding is a finite, yet developmentally undefined process, which in the case of a successful course leads to the emergence of new, functionally- and developmentally capable processual structures, a new socioeconomic development type and model, as well as new cultural patterns of meaning. Transformation is therefore both a descriptive as well as a normative notion. Transformation as notion and concept asks about *what* happened, *why*, by *whom* and *how*, but also about the *sense,* the meaning of change. In other words, which results and consequences does transformation have for the society, for the people and their way of life? Such an understanding of transformation does not assume a static-stable equilibrium model, but rather a dynamic and undetermined model of society." Reißig, 2014, 54, own translation

[5] Poell, Nieborg, & Van Dick , 2019 cited in: Van Dijck, 2021, S. 2802

[6] Van Dijck, 2021

[7] Van Dijck, 2021, 2807

[8] Van Dijck, 2021, S. 2805-2807

This metaphor captures the central feature of the process of platformization, which is the continuous collection and absorption of data: "Data (knowingly) provided and (unknowingly) exhaled by users form the oxygen and carbon dioxide feeding the platform ecosystem. Due to the ubiquitous distribution of APIs, the process of absorbing data and turning them into nutrients – a metaphorical kind of photosynthesis – stimulates growth, upward, downward, and sideways."[9]

The European Union has pursued the creation of an "information society" since the 1990s, formalizing this goal in the "Lisbon Strategy" (2000)[10]. It reiterated this goal in the following "Europe2020" (2010) strategy[11], via its "Digital Agenda"[12]. In 2016, it adopted the "Digital Single Market" Strategy[13] in which it recognized the necessity to broaden and "elevate" the issue of digitization to encompass qualitative transformations of European industries. Since 2020, the EC intends to make Europe the place-to-go for high quality industrial data that can be used to create, for instance, AI-tools; at the same time and by the same means, it wants to create a framework for "common European data spaces" – a new digital infrastructure that will stimulate and incentivize privately held data to be shared and used for the common good.[14] The EC, the European Council, and the European Parliament in 2022 signed a "Declaration on Digital Rights and Principles for the Digital Decade".[15]

However, despite European policymaking having recognized the transformatory role of digitization in European life for the past thirty years, the dynamics shaping the European platformization tree centrally originate with the American companies which dominate the crucial intermediary – *trunk* – layer. Because the trunk layer is the obligatory passage point between the roots and the branches of the tree, these intermediary companies "develop and consolidate controlling power over the system as such"[16], while at the same time expanding into the *root* and the *branch* layers due to the three dynamics of a) the vertical integration of platforms, "pushing from the trunk downwards towards the infrastructural

[9] Van Dijck, 2021, S. 2805
[10] Horten, 2011, 40
[11] European Commission, 2010a
[12] European Commission, 2010b
[13] European Commission, 2016b
[14] European Commission, 2020
[15] European Commission/European Parliament/European Council, 2022
[16] Van Dijck, 2021, 2807

layer as well as upward toward the branches of the sectoral platforms and built-on applications"[17], b) the infrastructuralization of intermediary platforms – "a horizontal movement toward building a denser presence across one or more layers in the trunk, which ultimately allows these companies to exert power upward, downward, and sideways"[18], and c) cross-sectorization, allowing them to "collect and connect personal information and behavioral data from multiple sectors."[19]

According to van Dijck, the resulting power concentration in the system's middle is "leading to a situation in which the Big Five platform operators are "trunking the tree" into a gigantic Californian sequoia by growing it *thicker* and *taller* – thicker by swelling its ringed structure while making it an exclusive centralized space and taller by enlarging the trunk upward and downward, incorporating the roots and the branches while erasing the distinctions between them and also obliterating the boundaries between market and nonmarket sectors", enabling them to "engage in an unprecedented form of competition-cum-coordination, particularly via their intermediary platforms. They attain a precarious balance by carving out spaces for their own platform functionalities, while opening up to rivals in other areas; by coordinating online space with other major players while competing in other segments; and by integrating their own platforms vertically while maintaining competition in "oligopolistic" platform markets."[20]

[17] Van Dijck, 2021, 2808
[18] Van Dijck, 2021, 2809
[19] Ibid.
[20] Van Dijck, 2021, 2810

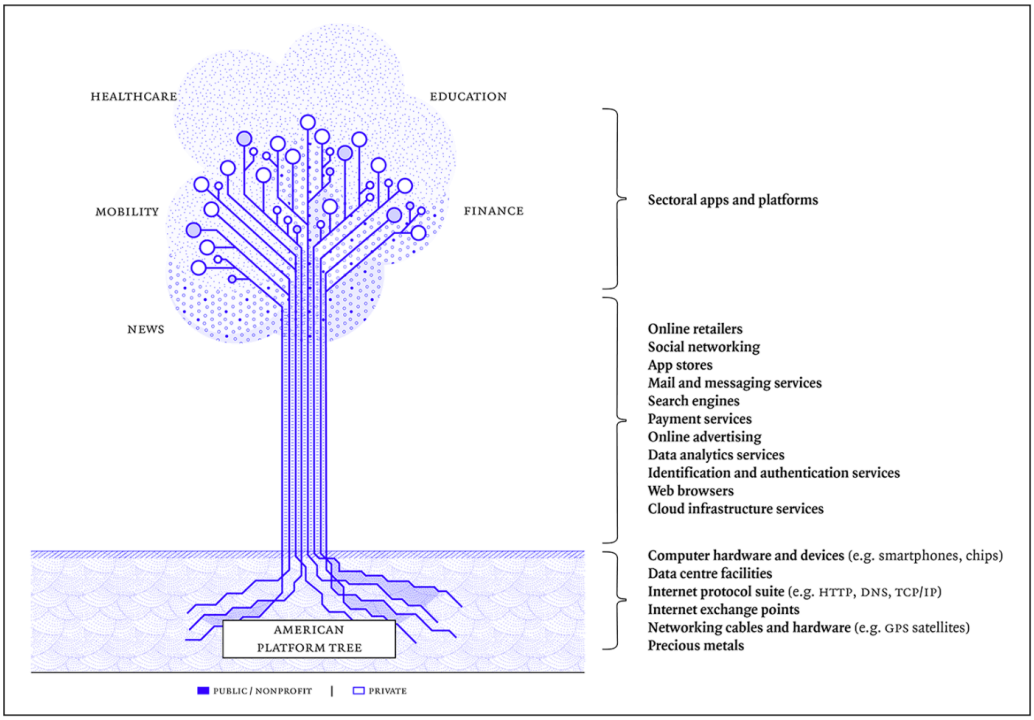

Figure 1: American Platform Tree (Giant Sequoia) (van Dijck, 2021, 2806)

The nascent field of platformization studies has recognized the need to study the *process* of platformization[21] and has also recognized the wider role which the European Union could play as a global agent of change, due to the fact that it controls access to a huge continental market.[22] It has recognized that a central disparity is that Europeans aim to protect this huge continental market in line with democratic ideals, but suffer from policy diffraction[23] – claiming that the main question becomes how Europe can move from a patchwork of siloed frameworks toward a comprehensive approach: "The challenges we confront are systemic, built into the architecture of digital media markets, therefore public policy responses must be holistic and avoid reactions that solve for one aspect of the problem while ignoring the rest."[24]

European policymaking is criticized as focusing on individual companies' practices, sanctioning these with fines or addressing them with single-issue policies, without, however, resulting in *systemic* changes.[25] Scholars recognize that "we need to bring together disparate

[21] Van Dijck, 2021, 2804
[22] Van Dijck, 2021, 2813
[23] Ibid.
[24] Owen, 2019 cited in: Van Dijck, 2021, 2813
[25] Van Dijck, 2021, S. 2814

policy instruments into a coherent overall framework and regulatory architecture"[26], contending that a move should be made from "rules-based regulation" towards "principles-based regulation".[27]

Recently, the field has gone further to suggest that "instead of pursuing various policies directed at regulating single platforms, individual firms, and isolated issues, Europe might try a novel strategy – one that targets platformization dynamics as a meaningful starting point for regulatory counterpower. European societies have a long tradition of organizing their democracies based on balanced cooperation between market, state, *and* civil society actors. So, they should feel particularly compelled to go back to the drawing board and articulate a set of principles that prioritizes the *common good* by empowering *citizens* and *civil society organizations to* help governments design an *open and diverse ecosystem*."[28]

Van Dijck contends that "[…] articulating such principles may shape a species different from the Californian sequoia or the Chinese bamboo tree. The European tree does not have a trunk that grows taller and thicker fed by proprietary data flows, but has a "federated", decentralized shape. It features switching nodes between and across all levels and layers, allowing users to change between platforms and define at each point how their data may be deployed. Such a tree may help grow a different kind of ecosystem – one that allows for more variety, openness, and interoperability at all levels."[29]

[26] Tambini, 2017 cited in: Van Dijck, 2021, 2814
[27] Nooren, van Gorp, & van Eijk, 2018, 282 cited in: Van Dijck, 2021, 2814
[28] Van Dijck, 2021, 2814
[29] Van Dijck, 2021, 2815

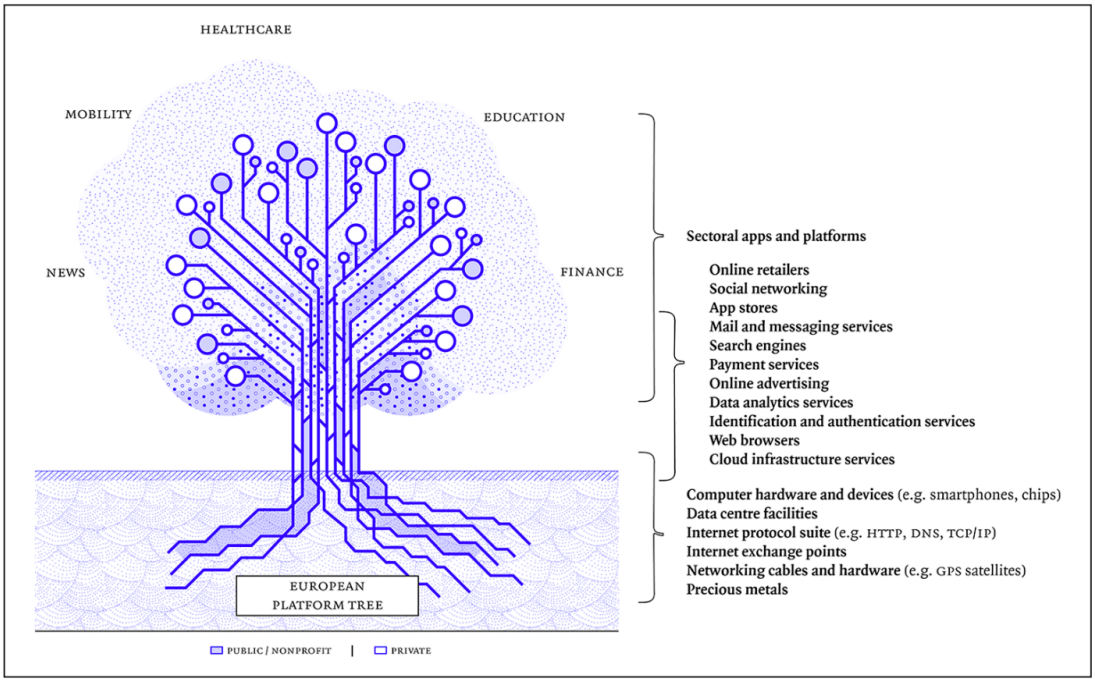

Figure 2: The European Platform Tree (Van Dijck, 2021, 2815)

1.2. The Potential of 5G for European Platformization

A particularly fruitful way of contributing to this endeavor lies in studying the failure of European policymaking to adequately address the potentials for shaping the European platform tree that rested *in its own designs* for the fifth generation of mobile networks.

Mobile networks lend themselves as particularly illuminating case studies on European policymaking for two reasons: they are early instances of the success of the European scale in coordinating Member States' efforts in the mobile telecommunication field into a single, European standard.[30] And the resulting global success of the 2G GSM standard enabled the European Union to attain a global leadership position in the process of developing mobile networks.[31]

The fifth generation of mobile standards was designed within the EU funded FP7 and Horizon 2020 programs, with strategic collaboration agreements on 5G Research and Development made by the EU with Japan, Korea, China and Brazil.[32] The 3GPP (3rd Generation Partnership Project) is the standardization platform, "a platform that was

[30] Lemstra, 2022, 57, see also: Lemstra, 2018, 590-597
[31] Lemstra, 2018, 590-597
[32] Lemstra, Cave, & Bourreau, 2017, 22

established based on European initiative recognizing the extended geographical scope of the standardization efforts, largely as a result of the global deployment of GSM."[33] R&D on 5G took place between 2010-2020, with its intended roll-out being in the 2020s. Unlike previous generations, which focused on a mass market, the focus of 5G was on digitizing societal sectors.[34]

The 5G architecture was fundamentally different from its predecessors in that it incorporated innovations made in cloud-based information technology services. It was based on software-defined networking and network function virtualization, enabling the tailoring of services to specific groups of end users or "vertical industries". These services were designed to be separated from each other through network slicing, thus allowing the provision of different classes of service to each user group.[35]

Due to these design choices, the 5G architecture allowed for the entry of a new type of operator in the mobile environment: the Virtual Mobile Network Operator. This operator was intended to act as a new intermediary between the vertical industry and the mobile network operator, acquiring networking capabilities wholesale and providing them retail. In this way, 5G was designed to facilitate the digitization of European societal sectors by allowing for the recognition and use of the knowledge of the specific needs of particular societal sectors through the Virtual Mobile Network Operator, a capability which a Mobile Network Operator would not be able to provide due to the complexity of the particular sectors' needs.[36]

This capability would have positioned these Virtual Mobile Network Operators (VMNOs) in the trunk of the European platform tree, with their unique advantage compared to the American platform companies being that they could provide tailorized services to societal sectors and at the same time guarantee "closed", "professional" networking quality by being directly connected to the telecommunication companies: "In the 5G model VMNOs operate as retailers procuring managed wholesale services from infrastructure providers, while

[33] Lemstra, Cave, & Bourreau, 2017, 22
[34] Lemstra, Cave, & Bourreau, 2017, 25-27
[35] Lemstra, 2022, 58, see also: Lemstra, Cave, & Bourreau, 2017
[36] Lemstra, 2018, 588-589

remaining in control of the service offering to end-users. This allows value differentiation and value transfer along the supply chain, whereby OTT [Over-the-Top] service providers make use of the „best effort“ part of the internet while VMNOs use the managed part.“[37]

In this way, „Europe assumes leadership in the use of the global 5G infrastructure, i.e., in the provision of (business) services sets tailored to particular industries and economic sectors. It thereby focuses on globally leading industries. This „move up the value chain“ towards services and through differentiation makes strategic sense as virtualization would lead to commoditization at the network equipment level and loss of market share, typically to suppliers from China.“[38]

Facilitating this transformation in the European mobile network would have implied actions “on multiple fronts”, because the practices which had led to European success in previous mobile standards would not be sufficient to ensure “success” with 5G. It would have necessitated telecommunications companies “opening up” their networks to the Virtual Mobile Network Operators:[39] “The virtualized architecture of 5G provided for APIs to configure tailored services. In order to build market momentum, these APIs would have needed to be opened up to professionals within the industry verticals to shape their own services.”[40] „The timely availability of a common set of APIs implemented across the networks of multiple MNOs was, and still is, essential for the ecosystem of VMNOs to flourish“[41], since „these can be considered a bottleneck resource of strategic importance“[42] An analogy to such a process is the adoption of the TCP/IP protocol stack by telecommunication companies in the 1990s, which enabled the creation of a global network of networks, the complementarity between the LP music record and vinyl record players, or the decision by Apple to open its App Store to non-Apple engineers.[43]

[37] Lemstra, Cave, & Bourreau, 2017, 61
[38] Lemstra, Cave, & Bourreau, 2017, 63
[39] Lemstra, 2018, 601-607
[40] Lemstra, 2018, 601-602
[41] Lemstra, Cave, & Bourreau, 2017, 66
[42] Ibid.
[43] Lemstra, 2022, 59

Such an "opening up" would have necessitated a change in telecommunications policymaking, a shift from a pure "regulatory state" role, where the outcome is the result of competitive markets, to a more "developmental state" role, where policymakers provide a vision of the future they wish to realize.[44]

1.3. Policy Failure: Contemporary Practices Implementing the EU's 5G Policy

European policy on 5G networks has – in 2023 – failed to ensure the creation of a "Europe-wide communication platform"[45], a possibility which would have been attainable given both the affordances of the technical design and the ambitions of the European policy frameworks – the Digital Agenda (2010), which provided a decade encompassing vision of next generation European telecommunications infrastructure development, and the Digital Single Market Strategy (2016), which provided a recognition of the broadness and Europeanness of the issue of digitization.

The emergent network of practices involved in the implementation of the European Union's 5G policy does not account for the transformatory capabilities of 5G. The deployment of 5G networks is organized by the technologies of different Research and Development frameworks of the Horizon 2020 research fund, and by a 5G Public Private Partnership consisting of the European Commission, European telecommunications companies and large European vertical industries. Roll-out initiatives have been limited to recommendations as part of an EU 5G Action Plan[46], as the mobile services market is seen as well-established and competitive.[47]

There are no moves to qualitatively alter the telecommunications framework to a demand-side framework – there is no political initiative to force the Mobile Network Operators to open their APIs to potential intermediaries, and the roll-out of 5G in Europe has been uneven depending on individual Member States.[48][49]

[44] Lemstra & Groenewegen, 2009 cited in: Lemstra W., 2022, 61
[45] Lemstra W., 2018, 604
[46] European Commission, 2016a
[47] Lemstra W., 2022, 58
[48] Lemstra W., 2018, 601-602
[49] Lemstra W., 2022, 58

As a result, the 5G architecture which is emerging in Europe is an *evolution* of the previous generations of mobile networks.[50]

By reviewing how expectations concerning 5G infrastructure are represented in US, UK and EU policy, industry, and standards documents, and in the press between 2016-2020[51], Mansell finds that these practices are enabled by an imaginary in which 5G is seen as "a component of a geopolitical "territorialization project"[52], the aim being to enable states and countries/regions to manipulate data to secure market dominance."[53]

She locates this imaginary as being part of a "predominating imaginary in the context of contemporary digital innovation", which "privileges data-driven economic growth, guided by technological innovation strategies in a globally (idealized) competitive marketplace."[54]

The problem, according to Mansell, is that this imaginary understands "the power […] to make choices about characteristics of an all-encompassing technologically mediated environment and which interests it should principally serve"[55] to be "located with an abstract notion of a capitalist market (and its individual agents)"[56] – "the way things go on among people" is imagined to be "through company, country, or region participation in a competitive technology-innovation race, with success defined by healthy profit margins, favorable trade balances, and strong economic growth indicators in the digital marketplace".[57] This implies that it "operates to minimize or make invisible potential risks to citizens' rights to privacy, their freedoms from surveillance, or the harms associated with discrimination because of the development of commercial datafication networks" – when it informs decisions, it is "often taken for granted that commercial values and aspirations will be balanced with public values through the technology designs that are brought to market

[50] Lemstra, W., 2018, 589
[51] Mansell & Plantin, 2022, 4
[52] Möllers, 2021 cited in: Mansell & Plantin, 2022, 13
[53] Ibid.
[54] Mansell & Plantin, 2022, 3
[55] Mansell & Plantin, 2022, 4
[56] Ibid.
[57] Mansell & Plantin, 2022, 3

and, additionally, that concerns about whether this balance is being (or will be) achieved should not slow the pace of innovation."[58]

In the expectations concerning 5G, Mansell finds that an alternative social imaginary of digital innovation, which locates "the power to make choices about characteristics of an all-encompassing technologically mediated environment and which interests it should principally serve"[59], "with the choices of both autonomous individuals and their collective institutions"[60], is made invisible[61] by the assumption of the dominant imaginary that the pace of innovation ought not be slowed about concerns about whether commercial values and aspirations will be balanced with public values.[62]

She finds that "public values, including privacy and freedom from surveillance, as well as transparent public accountability, characteristics of an alternative social imaginary of digital innovation, are suppressed in the process of materializing a new communication infrastructure."[63]

1.4. Research Gap

When looking at the research done on the process of platformization by the nascent field of platformization studies, we can find a research gap: despite work having been done on the problematic outcome of 5G policy[64], on the economics of digital platforms[65], on the imaginaries of the internet[66], on internet governance[67], on the specifics of policy development in the context of information systems[68], on the contradictions between individual European policies in the context of 5G technologies[69] etc., no project has focused

[58] Mansell & Plantin, 2022, 3
[59] Mansell & Plantin, 2022, 4
[60] Ibid.
[61] Mansell & Plantin, 2022, 3
[62] Mansell & Plantin, 2022, 2
[63] Mansell & Plantin, 2022, 1
[64] Mansell & Plantin, 2022
[65] Mansell & Steinmueller, 2020
[66] Mansell, 2012
[67] DeNardis, 2014
[68] Braman, 2004
[69] Frias & Martinez, 2018

on trying to explain the reason for why the European Union stayed behind what was possible with 5G technology, despite having recognized its necessity in policy programmes and having implemented this potential in its technical design.

There is still a gap in understanding how the assumptions of different actors, whose practices are related to each other via the radical innovation of digital platforms, are problematized and mediated by the apparatuses of the European Union into a functioning dispositive, with a structured network of practices enabled by an imaginary.

2. Research Interest/ Research Aim

2.1. Research Interest

My research interest is therefore in analyzing how European mobile infrastructure policy was formulated against the background of essentially competing and contradictory interests of different social forces and how, if at all, it contributed to societal reproduction and the regulation of contradictory social relations and crisis tendencies.

2.2. Research Aim

As Lemstra observes, telecommunications frameworks have to be *actively shifted* – "altering European telecommunications regimes is not an automatic market-driven process; rather, it requires collective political action."[70] What is needed, according to Lemstra, to enable the success of 5G for the European platform tree is to shift the telecommunications framework to a demand-side based framework – thereby shifting "the mobile communication industry momentum from leaders in consumer markets to leaders in services markets for vertical industries."[71] This necessitates taking political decisions.

Providing an explanation for the failure of the EU's 5G policy will contribute to making the conversation about the process of platformization more articulate, by adding a *political process* dimension – a potential which can contribute to making *principled* policy decisions

[70] Sandholtz, 1993, 254, cited in: Lemstra, 2018, 591
[71] Lemstra, 2018, 601)

on European platformization. Enabling these practices is necessary in order for 6G to be shaped differently than 5G.

By making the discourse on 5G more articulate "we can become more capable of appreciating the differences that matter. Being articulate (as opposed to inarticulate) means that we can make new and enlightening connections between things and the world. This in turn opens up new opportunities for acting (or not acting) in a more informed way."[72] Acting or not acting on these new opportunities in an articulate way can ultimately further the goal of realizing the EU's global leadership potential by allowing for reflexive learning, which can provide new opportunities for an alternative imaginary to become hegemonic.

3. Research Question

What are the reasons for why *this* policy was selected and retained, despite being counterproductive towards the stated goals of the European Union in this policy domain?

4. Theoretical Background

4.1. Approaching Internet Governance as „Reflexive Coordination"

Studying policy processes around the development of the internet confronts the researcher with a riddle, articulated by Hofmann et al. (2017): "the question is how distributed structures and processes practice regulation."

It is therefore helpful to follow Hofmann et al. (2017) by approaching policy related to the internet via a *governance* lens: "the concept of governance reflects a broad understanding of ordering processes transcending the actions of governments."[73] It is "analytically valuable because it comprehensively understands ordering processes and de-essentializes the role of

[72] "[…] the aim of social science is to provide a richer and more nuanced understanding of the world, and not to offer simplified answers to complex questions. More clearly, good social science makes the world more complex, not simpler. Thicker, not thinner, descriptions are the aim of good social science. The point has been made by several authors, but possibly the strongest available version to date has been provided by Isabelle Stengers. The Belgian philosopher of science has suggested a normative way to distinguish between good and bad science that is an alternative to the traditional Popperian model. According to the author, "scientific" is an adjective that defines whether some (provisional) propositions about the world make us more articulate; that is, more capable of appreciating differences that matter." Nicolini, 2012, 215-216

[73] Hofmann, Katzenbach, & Gollatz, 2017, 1410

public authority. It represents a significant shift in the analysis of rule-making with a focus on 'structured interactions', interactions of various regulatory structures, cooperation and negotiation, coordination, conversation, and discursive manifestation."[74]

Following Hofmann et al., the concept of governance in internet policy allows for a fundamental shift in perspective: internet governance can be studied as "a continuous heterogenous process of ordering without a clear beginning and endpoint."[75] This is because "governance" can be grounded in *coordination*, allowing us to "account for the emergent orders prevalent in rule-making in digital contexts and to include the practices of Internet users, providers, and other stakeholders *as* Internet governance":[76]

"This approach to governance in internet policy puts the *practices* of different actors at the center of the analysis. It allows for a bottom-up perspective which anchors governance in mundane coordination activities – focusing on the mutual adjustments we make in our daily social life, which are regarded as elementary building blocks of social order. In this way, social order is not taken for granted, rather, the practical accomplishment of social order is put at the center of the analysis. This approach assumes a fundamental uncertainty underlying everyday situations and therefore focusses on the conventions that help actors master their encounters. The idea of social order is thereby shifted to a focus on the endless attempts at ordering. The fragility of shared norms and understandings that facilitate everyday coordination, their local variety and their often-implicit nature is emphasized. Social order, from this perspective, is a result of distributed forms of coordination that vary, not only in terms of the number of people involved, their geographic or social reach, but also in their stability."[77]

This approach allows us to see internet-related activities not primarily as *objects* of governance (objects to be regulated), but as elements *constitutive* of it (means of coordination). Implicitly – and sometimes explicitly – such coordination activities articulate, reify, or question the norms shaping Internet governance: "The continuously emerging and

[74] Hofmann, Katzenbach, & Gollatz, 2017, 1410
[75] Ibid. 1412
[76] Ibid.
[77] Ibid. 1413

dissolving order we call Internet governance is thus an effect generated by heterogenous means."[78]

Based on this turn in perspective, and following Hofmann et al, *internet governance* itself happens when the specific mode of interaction in a given situation or context breaks down or becomes problematic, "and we see ourselves forced to discuss and negotiate the underlying norms, expectations and assumptions that guide our actions."[79] In these situations, coordination becomes reflexive – internet governance is therefore *reflexive coordination*:[80]

"As an example, mundane practices such as passing each other on the street, posting photos to an online platform and peering traffic with other autonomous networks continuously articulate expectations and evaluations regarding the situations in question: questions of precedence and right of way, considerations of privacy and public visibility and trade-offs between secure communications and usability. It is only when we disagree with the sharing of photos online or when the peering between networks stops that these expectations, norms, and evaluations become articulated objects of contestation. It is in the moments when relevant rules, norms and understandings become a subject of debate and reconsideration that we find reflexive coordination."

Hofmann et al. suggest that acts of reflexive coordination are the nuclei of governance processes. Governance should be defined as coordinating coordination or *reflexive coordination*, "because it questions and potentially redefines the rules of the game. This definition is broad, because it covers many actors, practices, and tools, but at the same time, it is specific, since it focuses on those interactions that refer to the *conditions* of ordinary coordination. Accordingly, simple coordination itself is not part of this definition of governance."[81]

[78] Hofmann, Katzenbach, & Gollatz, 2017, 1414
[79] Ibid.
[80] Ibid.
[81] Ibid. 1415

This *processual* understanding of internet governance allows us to, "on the one hand focus on the critical situations in which different criteria of evaluation and performance come together and actors start redefining the situation in question, by contesting, adapting or displacing routines through practices of articulation and justification, and thereby elucidating the heterogeneity of sources and means that drive the emergence of ordering structures, while on the other hand being able to account for the outcome of governance processes as emergent, meaning that they cannot be traced back to the intentions of a single actor or organization because the processes of reflexive coordination are embedded in complex social structures." [82]

It implies, "that policy objectives do not precede policy activities but are formed and transformed throughout the coordination of coordination. Governance, therefore, may be conceived of as an enduring and meandering course of events without a clear starting and end point. The emphasis on open-ended processes also involves particular policy evaluation criteria. While regulatory actions are normally evaluated against predefined goals, governance processes do not lend themselves to explicitly pre-defined success criteria. Due to their dynamic character, success and failure of ongoing governance processes appear to be less clear-cut. As Grande (2012: 584) astutely observes, the assessment of governance arrangements ultimately depends on the acceptance of its consequences for the actors involved. Thus, both targets and evaluation criteria are defined as part of governance processes." [83]

In summary, viewing internet governance as *reflexive coordination* allows us to a) understand the social world as grounded in *coordination*, which "includes all reciprocal interactions mediating mutual (successful or failed) adjustments, encompassing mundane activities and processes that contribute to the emergence, affirmation, or deinstitutionalization of shared norms, often without intending to. It thereby reveals the emergent ordering effects of practices and routines by Internet providers, platforms and users – without specifically aiming at collective rule-making or institution building"; b) understand governance as happening "due to critical moments when routine coordination

[82] Hofmann, Katzenbach, & Gollatz, 2017, 1415-1416
[83] Hofmann, Katzenbach, & Gollatz, 2017, 1417

fails, when the (implicit) expectations of the actors involved collide and contradictory interests or evaluations become visible, and the involved parties need to enter into a debate about the relevant rules, norms and understandings underpinning their practices – as addressing, questioning and renegotiating Internet-related coordination practices"; c) understand *regulation* as "intentional and goal-directed interventions into a policy domain with the aim of influencing others' behavior (which may take the form of legislation, private self-regulation or multi-actor arrangements) – as *one* of multiple possible means that emerge out of reflexive coordination processes":[84]

"The approach to governance introduced here places a strong emphasis on processes (rather than structures). Its boundaries are enacted and constantly negotiated by the actors involved. While regulation connotes intentional procedures, including formally agreed resources, means and targets that can be met or missed, governance is concerned with the conditions under which such activities take place. Differentiating between governance and regulation resolves the contradiction between the different forms of political ordering found on the Internet."[85]

4.2. Utilizing Cultural Political Economy

"Cultural Political Economy", developed by Jessop et al. over the past thirty years, provides us with a theoretical framework for understanding instances of the meandering process of internet governance as oscillating between politicization and depoliticization.

CPE posits that "complexity reduction is an existential necessity for actors to "go on" in the world." It argues that "complexity is reduced by the intersubjective production of meaning ("semiosis") on the one hand, and by the emergent pattern of social interactions on the other, which necessarily limit possible connections and sequences of actions to avoid social interactions being random, unpredictable, and chaotic."[86]

[84] Hofmann, Katzenbach, & Gollatz, 2017, 1417-1418
[85] Ibid. 1419
[86] Jessop, 2010, 337-338

In this way, "these two forms of complexity reduction work to transform meaningless and unstructured complexity into meaningful and structured complexity and succeed insofar as the world becomes meaningful to actors and social interactions undergo structuration."[87]

CPE claims that "the particularity of the cultural and the social indicates the need for a clear distinction between social *construal* and social *construction.* All actors are forced to construe the world selectively as a condition of going on within it. But, while all construals are equal before complexity, some are more equal than others. Given the potential for infinite variation in construals, CPE explores how their selection and retention are shaped by emergent, non-semiotic features of social structures as well as by inherently semiotic features."[88]

It posits that "construal and construction have four interrelated aspects: semiosis, agency, technologies, and structuration. Attention to all four aspects *and* their interaction is required to explain why and how some construals are selected, get embodied/embrained in individual agents or routinized in organizational operations, are facilitated, or hindered by specific social technologies and affordances, and become embedded in specific social structures ranging from routine interactions via institutional orders to large-scale social formations."[89]

In developing its approach to complexity reduction through meaning-making, CPE deploys the notion of the "imaginary": "An imaginary is a semiotic ensemble (or meaning system) without tightly defined boundaries that frames individual subjects' lived experience of an inordinately complex world and/or guides collective calculation about that world. Without imaginaries, individuals cannot "go on" in the world and collective actors (such as organizations) could not relate to their environments, make decisions, or engage in strategic action. They are not pre-given mental categories but creative products of semiotic and material practices with more or less performative power. Social forces seek to establish one or another imaginary as the hegemonic or dominant "frame" in particular contexts and/or develop complementary sub-hegemonic imaginaries, or counter-hegemonic imaginaries that motivate and mobilize resistance. Hegemonic and dominant imaginaries are generally

[87] Jessop, 2010, 338
[88] Ibid.
[89] Ibid. 339

socially instituted and socially embedded and get reproduced through various mechanisms that help to maintain their cognitive and normative hold on the social agents involved in the field(s) they map."[90]

According to CPE, the co-evolution of semiosis and structuration is shaped by the following factors:

a) "Continuing *variation* in discourses and practices, due to their incomplete mastery, their skillful adaptation in specific circumstances, new challenges or crises, or other semiotic or material causes.
b) *Selection* of particular discourses (the privileging of just some available, including emergent, discourses) for interpreting events, legitimizing actions, and (perhaps self-reflexively) representing social phenomena. Semiotic factors act here by influencing the resonance of discourses in personal, organizational, institutional, and broader meta-narrative terms and by limiting possible combinations of semiosis and semiotic practices in a given semiotic order. Material factors also operate here through conjunctural or entrenched power relations, path-dependency, and structural selectivities.
c) *Retention* of some resonant discourses (e.g., inclusion in an actor's habitus, hexis and personal identity, enactment in organizational routines, integration into institutional rules, objectification in the built environment, material and intellectual technologies, and articulation into widely accepted accumulation strategies, state projects, or hegemonic visions). The greater the range of sites (horizontally and vertically) in which resonant discourses are retained, the greater is the potential for effective institutionalization and integration into patterns of structured coherence and durable compromise. The constraining influences of complex, reciprocal interdependences will also recursively affect the scope for retaining resonant discourses.
d) *Reinforcement* insofar as certain procedural devices favor these discourses and their associated practices and also filter out contrary discourses and practices. This can involve both discursive selectivity (e.g., genre chains, styles, identities) and material selectivity (e.g., the privileging of certain dominant sites of discourse through

[90] Jessop, 2010, 340-341

structural biases in specific organizational and institutional orders). Such discursive and material mechanisms recursively strengthen appropriate genres, styles, and strategies and selectively eliminate inappropriate alternatives and are most powerful where they operate across many sites to promote complementary discourses across society.

e) *Selective recruitment, inculcation and retention* by relevant social groups, organizations, institutions, etc., of social agents whose predispositions fit maximally with the preceding requirements."[91]

In this way, CPE is capable of studying "dispositivization" – a critical notion which it deploys in order to study "contingent, 'discursive-material' fixes that emerge in response to specific (and specifically problematized) challenges to social order (with a referent in the 'real world') and that thereby create a strategic imperative to address and, if possible, solve the challenge."[92]

It defines a dispositive as, "[…] a contingent, strategically-selective, problem-oriented assemblage that comprises (1) a dispersed apparatus, comprising institutions, organizations, and networks; (2) an order of discourse, with corresponding thematizations and objectivations; (3) diverse devices and technologies involved in producing various forms of power/knowledge that contribute to the realization of the strategic imperative; and (4) subject positions and subjectivation."[93]

It claims that "a dispositive is a response to urgent problems and, hence, involves not only discursive practices but also wider social practices developed to resolve the problem as interpreted and re-interpreted over time."[94]

CPE asks about "how discursive tactics and strategies are generalized to create a specific strategic logic as a condition of effective action in response to an urgent problem; and, conversely but reciprocally, how a heterogenous ensemble of diverse (structural) elements are articulated into an apparatus that supports a specific strategic logic." It claims that "the emerging general strategic line in this complex process depends on the path-dependent

[91] Jessop, 2010, 340-341
[92] Sum & Jessop, 2015, 133
[93] Ibid.
[94] Ibid.

contexts in which a dispositive is assembled; in turn, a dispositive emerges from the intersection of different, potentially path-shaping strategic lines."[95]

By using CPE, we become capable of studying policy formulation and implementation in internet governance "by starting from competing policy proposals (variation), then considering why some proposals get translated into specific policies (selection), to finally investigating why some policies succeed and get consolidated (retention)."

This approach thereby allows us to see how the problematizations of different actors in instances of "reflexive coordination" interact with the social structures of institutions, with discourses, technologies, etc., with path-dependent and path-shaping lines. With this framework we become capable of tracing the *emergent* nature of complex policy processes. The use of "imaginaries" by CPE gives us a vocabulary for understanding both the meaning systems which actors use to reflect, and the result of politicization/depoliticization as having instituted an imaginary. The use of "dispositive" by CPE gives us a vocabulary for understanding the outcome of an instance of internet governance *critically.*

4.3. A Critical Realist Approach to Social Science

Cultural Political Economy is a *critical realist* approach to social science. Critical Realism, which was developed by Bhaskar in the 1970s[96], "has a realist ontology: it understands both social events and abstract social structures, as well as social practices, as part of reality. It makes a distinction between the "potential" and the "actual" – what is possible because of the nature (constraints and allowances) of social structures and practices, as opposed to what actually happens. Both are distinguished from the "empirical", what we know about reality. Reality (the potential, the actual) cannot be reduced to our knowledge of reality, which is contingent, shifting, and partial."[97] Adherents of critical realism therefore "posit the existence of real but often latent causal mechanisms that may be contingently actualized in specific conjunctures but may also, thanks to diverse factors or actors, remain latent. Together the empirical and the actual provoke questions about the nature of the real."[98]

[95] Sum & Jessop, 2015, 133
[96] Bhaskar, 1979
[97] Fairclough, 2003, 14
[98] Jessop & Sum, 2013, 9

This approach "invalidates the naive positivist method of inferring causation from empirical regularities, as if these could reveal cause–effect relations without prior or later theoretical work. The existence of the real world is a crucial 'regulative idea' in critical realism, but its adherents do not claim to have direct access to this reality. Instead, they rely on a method known as retroduction. This asks, 'what must the world be like for "x" to happen?' This is an open process that switches among concept-building, retroductive moments, empirical inquiries, conceptual refinement, further retroduction and so on."[99]

A consequence of this view is that "no analysis of a text, or of a number of texts across time and space, can be complete and definitive. This does not mean that they are unknowable – social scientific knowledge of them is possible and real enough, but inevitably partial. It is, however, *extendable*: it implies a "transdisciplinary" approach, which enhances our capacity to "see" things in texts through "operationalizing" (putting to work) social theoretical perspectives and insights."[100]

In this way, Critical Realism has an important "underlaboring" role in the natural and social sciences: "it examines, critiques, refines and reflects on the ontological, epistemological, methodological, and substantive presuppositions of different theoretical traditions, disciplines, schools and so forth."[101]

5. Methodology/Method

5.1. Methodology

5.1.1. Historical Materialist Policy Analysis (HMPA)

I selected Historical Materialist Policy Analysis (HMPA) as a method for my investigation. HMPA was an adequate method for my research interest because it "aims at situating policies in the context of the emergence and development of social relations and associated conflicts over time, i.e., at understanding how particular policies are embedded in

[99] Jessop & Sum, 2013, 9
[100] Fairclough, 2003, 14
[101] Jessop & Sum, 2013, 8

historically-developed complex social relations that form the "context" and "corridor" of policies and policymaking."[102]

This approach developed in the German speaking world in the last decade "in response to the experience of contestation and crisis"[103] and views itself as a "close relative" to CPE "with a special focus on the concrete analysis of the contested policy processes, involved actors with their strategies and power resources, societal and political projects, and terrains of contestation" [104] – a way of *applying* CPE empirically. It "adopts from CPE the distinction between different selectivities and their operationalization"[105], in an attempt "to further explicate the contextual structures in which policy processes take place, paying closer attention than CPE to the role and constellation of political actors, their strategic orientations as well as of conflicts in specific policy processes."[106]

HMPA intends to "provide a granular understanding of strategies and societal conflicts in the processes of policy-making and hegemony production by focusing on competing hegemony and political projects (and their relationships) and – based on materialist state theory – the contested terrains of public policy-making."[107]

5.1.2. Analysis of Policy Formulation in HMPA

To analyze "how specific policies are formulated against the background of essentially competing and contradictory interests of different social forces and how, if at all, they contribute to societal reproduction and the regulation of contradictory social relations and crisis tendencies"[108], HMPA introduces the conceptual innovation of "hegemony project" and "political project".

HMPA understands "hegemony projects" to be "bundles of strategies which pursue similar goals. These strategies form on the basis of actors' respective diagnosis of situations and

[102] Brand, Krams, Lenikus, & Schneider, 2021, 2
[103] Ibid. 1-2
[104] Ibid. 4
[105] Ibid.
[106] Ibid.
[107] Ibid.
[108] Ibid. 1

problems, which, in turn, result in specific political rationalities geared towards achieving their – also longer term – goals. To gradually reach these goals, actors apply specific tactics."[109]

"Hegemony project" is used to denote "the strategies of actors which in part deliberately relate to each other but also differ from one another and do not conceive of themselves as a "joint project": the decisive distinction criteria are whether actors' strategies significantly coincide in a conflict field, whether they share a certain common direction."[110]

Hegemony projects are not static – "they are always aggregations of strategies with which certain forces react recursively (i.e., experience-induced) to specific historical situations. Though they may show very similar characteristics in different policy areas, the strategies pursued are specific to different policy fields and conflicts. In other words, the actors of a hegemony project pursue specific partial objectives in different policy conflicts: depending on the conflict, different actors, and parts of the social basis of hegemony projects take center stage. It is therefore possible that hegemony projects are divided into fractions in individual conflicts. Hegemony projects are thus not internally uniform and homogenous – precisely because they link the strategies of different actors, who can apply different tactics in the pursuit of the same overarching goal. Hegemony projects may also splinter into fractions due to a different spatial anchoring of their actors and, finally, due to an unequal radicality of political strategies. Within a hegemony project, a fraction needs to bring different protagonists under its leadership and marshal them with the help of specific compromises and discourses; otherwise, one could hardly speak of a coherent hegemony project."[111]

To become hegemonic, hegemony projects attempt to implement specific "political projects". HMPA defines "political projects" as "special, concrete political initiatives that represent themselves as solutions to pressing social, economic and political problems". A hegemony projects must succeed in positioning a number of such limited political projects in such a way that they become the politically strategic "terrain" on which the hegemony project can condense, thereby creating a new selectivity of the ensemble of apparatuses. In

[109] Buckel, Georgi, Kannankulam, & Wissel, 2017, 17
[110] Ibid.
[111] Ibid.

the struggle for hegemony, political projects are at the same time terrain and vehicles of enforcement. Analytically, hegemony projects can only be studied by focusing on their pursuit of political projects.[112]

HMPA posits that to make political projects hegemonic, "the actors involved must succeed in combining different dimensions of social and political action: material interests, strategic orientations, discursive and cultural meanings, ideological convictions, emotions, etc. Strategies in hegemony projects condense along a wide range of relationships of forces."[113]

The concept of hegemony projects was developed by HMPA "to capture the actions of actors which are geared towards achieving hegemony." This concept is delimited by HMPA, by distinguishing it from other "behaviors with which societal actors can react to a hegemonic constellation they reject": "counter-hegemonic strategies" denote "an attempt to achieve an alternative form of hegemony in society"; "anti-hegemonic strategies" denotes "strategies that principally reject hegemony as a form of bourgeois rule"; "escape strategies" denote "practices which refuse, avoid, paralyze, or undermine a hegemonic order, its rules and constraints without aiming at generalizing these practices deliberately and politically"; and, finally, "resignation" denotes "the passivity with which actors may react to a hegemonic order – no longer being part of the active consensus of hegemony but rather, as passive elements, acting to stabilize hegemony."[114]

5.2. Method

Following HMPA, I divided my policy analysis into three steps, consisting of context, process, and actor analysis. This provided a useful framework for analyzing dispositivization along the lines of CPE.

[112] Buckel, Georgi, Kannankulam, & Wissel, 2017, 18
[113] Ibid.
[114] Ibid. 19-20

5.2.1. Context Analysis

The context analysis followed the heuristic[115] of HMPA in assuming that struggles over policies have at the core certain conflicts:[116] It aimed to reconstruct the investigated social conflicts "as a specific *historical situation* to which social and political forces reacted differently and in opposition to each other, and which was brought about by a complex set of historical conditions and processes."[117] It was interested in exploring the emergence of power and domination out of the interplay of structural factors and contingent societal processes. The interplay between structural and agential selectivity was the focus of the context analysis.[118]

5.2.2. Process Analysis

The process analysis aimed at reconstructing "the dynamic process in which the investigated conflict unfolded through different phases and turning points, and against the background of its broader historical context."[119]

It thereby allowed me to trace the variation, selection, and retention of construals by identifying political projects which developed in the course of a policy conflict[120], enabling me to locate the "5G Action Plan" as part of a *specific*, political project, and identify it as part of a *constellation* of political projects.

This knowledge of the process could then be used in the actor analysis to draw conclusions about genre chains instrumental to the successful retention of construals – to their construction.

[115] The heuristic is "based on the assumption that policy processes associated with socially and politically manifest conflicts most visibly bring to light the crucial underlying interests and constellation of forces that shape the contested reproduction of social relations." Brand, Krams, Lenikus, & Schneider, 2021, 10
[116] Ibid. 9-10
[117] Buckel, Georgi, Kannankulam, & Wissel, 2017, 20-21
[118] Caterina, 2018, 217
[119] Kannankulam & Georgi, 2014, 67
[120] Caterina, 2018, 217

5.2.3. Actor Analysis

5.2.3.1. Goals of the Actor Analysis

Following HMPA, the actor analysis "aimed to ask which actors reacted how and why to the same problem." 'Actors' were understood broadly to embrace a variety of other protagonists present in the state in its 'inclusive' sense. Against this background, the actor analysis aimed first of all to reduce the complexity inherent in the observed conflict. This required four intermediate steps, which were suggested by HMPA:

- First, the *analysis of competing strategies* asked: Who were the main actors involved? What did they say? How did they act? In other words, which strategies were they pursuing throughout the observed conflict?
- Second, the identified strategies were analytically *grouped into different hegemony projects*, thus assuming that 'the actions, practices and actors conceptually subsumed under a hegemony project' basically 'pursue complementary strategies'.
- Third, the competing hegemony projects were subjected to a *detailed scrutiny* encompassing:
    - 1) the situation analysis of a given hegemony project, i.e., what was identified as the basic problem and which causes were ascribed to it;
    - 2) its overall strategic objectives independently from the circumscribed objectives pursued in the conflict under observation;
    - 3) its central strategy in the analyzed conflict;
    - 4) its social basis.
- Finally, the analysis of the various hegemony projects was followed by the *investigation of their relative power position* in the observed conflict, which was regarded as dependent on the availability and relative weight of four main kinds of resources:
    - 1) organizational resources (e.g. money, bureaucracies, use of force) that were under actors' more or less direct control;
    - 2) systemic resources referring to actors' ability to take (mainly economic) decisions with relevant consequences for the overall system;
    - 3) discursive, ideological and symbolic resources concerning the degree to which actors were able to make their own perspective broadly accepted;

- 4) institutional or strategic-structural selectivities concerning the degree of complementarity between actors' strategies and their respective (politico-economic) context.[121]

In this way, the actor analysis allowed for analyzing the interplay of the four modes of selectivity. It also provided a general focus on agential selectivity by utilizing the concept of "hegemony projects".

5.2.3.2. Political Discourse Analysis

To do this, I used the third iteration of "Critical Discourse Analysis", "Political Discourse Analysis".[122]

The third iteration of critical discourse analysis studies political discourse.

It proceeds from a coherent view of politics, defined as being about "arriving cooperatively, and through some form of (collective) argumentation, at decisions for action on matters of common concern" in "conditions of uncertainty, incomplete information, and risk"[123], and provides a framework for reconstructing and evaluating the practical reasoning which agents undertake in political contexts – which are institutional contexts, associated with rights, duties, obligations - in order to have their strategy for effecting changes in the real world prevail (be taken up, be given a status function).[124] CDA draws on Searle's theory of institutional reality[125], by understanding power as tied to status functions.[126]

Political discourse is understood as a *genre,* an activity, which is fundamentally *deliberative*.

CDA therefore proposes a framework for practical reasoning, with a circumstantial premise, value premise, goal premise, and a hypothetical claim for action based on a means-goal

[121] Caterina, 2018, 216-217
[122] Fairclough & Fairclough, 2012
[123] Ibid. 34
[124] Ibid. 107-108
[125] Searle, 2010
[126] Fairclough & Fairclough, 2012, 72-73

calculation. It also accounts for deliberation, in that an instance of practical reasoning can commence from the negative consequences of a proposed action.[127]

In this way, CDA is able to reconstruct the *strategies* of agents as a chain of instances of practical reasoning – of means-goal premises –; strategies are attempts to bring about changes *in the world*,[128] this change, however, is imagined in discourse, and its means-goal premises come together to constitute an *argument.*[129]

Because the nature of politics is about arriving cooperatively at a decision in a situation of incomplete information, uncertainty, and risk, and because the genre of political discourse is fundamentally deliberative, the evaluation of political discourse can rightly ask about the *reasonableness* of particular instances of deliberation. Reasonableness is a criterion which is focused not on making the *right* decision, but on making the decision *right*.[130]

CDA therefore proposes evaluating instances of political discourse by asking about the rationality of the circumstantial premise [representation of the circumstances of action], about the validity of the argument, and about the probable negative consequence of the proposed action.[131]

5.2.3.3. Why I chose "Political Discourse Analysis"

PDA enabled me to scrutinize the relationship between actual instances of political discourse, and the institutional contexts they are a part of. This was possible because, since the *inherent* character of political discourse is *deliberation*, it was possible to see how the institutional contexts enabled or constrained agents in their deliberation by providing them with reasons for action. Because structures enable or constrain agents by providing them with reasons for action, this analytical method allowed me to understand the affordances of social structures in a given situation.

[127] Fairclough & Fairclough, 2012, 35-77
[128] Ibid. 24
[129] Ibid. 24-25
[130] Ibid. 34
[131] Fairclough & Fairclough, 2012

This allowed me to test the enablement/constraints of the genre-chain that had developed in the policy process because it allowed me to see *what type of agency* was successful in this context.

5.2.3.4. Application of Political Discourse Analysis in the Actor Analysis

I used PDA of political discourse in the following way:

For the first step, the analysis of competing strategies, a text which was identified as central for the retention process was taken (the process of developing the 5G Action Plan was looked at) and the arguments in this text reconstructed according to the argumentative scheme offered by Fairclough/Fairclough 2012.

This text was then brought into relation with other texts which reacted to this text, using the three sets of critical questions to evaluate practical arguments, and by categorizing these other texts as to whether they were to be found in the international organization arena, the supranational/national arena or the (trans-)national civil society arena. Categorizing texts according to these three arenas was a move suggested by Caterina following Sum[132] and was fruitful for my investigation because it added a scalar dimension and allowed me to see how texts enable or constrain the moving along of texts between arenas – allowing me to draw conclusions about the genre-chain that had developed.

These reconstructed strategies were then used for the second step, in order to group these identified strategies into different hegemony projects. This was done by asking which of the identified actors were basically pursuing complementary strategies – drawing on their respective evaluation of each other's arguments.

These strategies were then used for the third step, the detailed scrutiny of the hegemony projects. The situation analyses of the hegemony projects were derived from the reconstruction of the circumstantial premises in the arguments, the overall strategic aims of

[132] Caterina, 2018, 214

the hegemony projects were derived from the reconstruction of the basic goals supported by a set of key concerns and values in the arguments; and the conflict-related strategies of the hegemony projects were derived from the reconstruction of the arguments' conclusions (claims) supported by a specific means-goal relation. Furthermore, the analysis of the conflict-related strategies of the hegemony projects could be critically enhanced by drawing on the relation between the first text and the texts which responded to it which was established via the critical questions.

Finally, the results of the PDA were drawn on, together with the knowledge of the process analysis and other secondary resources, to address the fourth sub-step, the investigation of the relative power position of the hegemony projects in the observed conflict. This allowed for an assessment of the interplay of structural, agential, discursive, and technological selectivities in this process.

5.3. Why I chose HMPA (and Discourse Analysis)

Using HMPA was an adequate approach to investigating my research question because it focuses on analyzing not the effectiveness of policy, but rather the policy process itself. This was adequate because my research question was formulated as a result of the scientific field having discerned that the EU's 5G policy was not effective.

Using Political Discourse Analysis to investigate the relationship between the hegemony projects and the political projects was an adequate move for two reasons: a) it reflects the reality that internet governance – *reflexive coordination* - is a process in which public debates are crisscrossed with political debates, and b) it allowed me to see the filtering work done by institutions to *order* these debates.

The frameworks provided to me by HMPA and PDA enabled me to synthesize the texts which were part of this process – derived from primary sources such as political documents, as well as secondary literature about these texts, discourses, and technologies, - into a principled framework which was itself adequate to the object of inquiry, internet governance.

I was constrained by this approach in that I was reliant on texts which were publicly available, and on scholarship about this historical period and its technologies which is itself evolving. In critical realist fashion, I am aware that the account I was able to provide is necessarily partial – and yet, by proceeding with a critical realist approach, I was able to extend my account over the course of this research process when I felt that it was not yet capable of providing a satisfying, truthful answer to my research question.

I hope that by having proceeded in this way – by structuring the policy analysis into context, process, and actor analysis, and by drawing on the tools offered by PDA to reconstruct the strategies of actors involved in this process – it becomes possible to understand how this particular dispositive with its strategic logic was selected and consolidated in the face of contestation and resistance. I hope that it was possible to explore the semiotic and extra-semiotic mechanisms involved in selecting and consolidating the dominance of some meaning systems and ideologies over others, providing a critique of domination.

I invite future scholars to further expand on the account I have given.

6. Empirical Part

6.1. Context Analysis

6.1.1. The „Network Neutrality“ Policy Issue

In the 2000s, “the way packets of data are moved across the Internet, who pays for their transport, and how much they pay” [133] became a political issue in European internet infrastructure regulation - at the heart of which was the question of whether private telecommunication networks ought to be regulated as if they were a public infrastructure.[134]

This question was at the heart of this issue because, “despite the internet’s essentially open character, the owners of its infrastructure nevertheless maintain control of potential ‘bottlenecks’ that can command monopoly or oligopoly rents” [135]: “In the basic structure of the internet, a device at the edge of a network connects to the “backbone” via a telecommunications company. This device can then communicate with other similarly connected devices, via the backbone, by sending and receiving packets of data that conform to internet protocol (IP). This same setup applies whether the device belongs to an end user or a CAP, such as Amazon or Facebook. The user of each device pays their telecommunications company for their own connection, and this payment entitles them to send packets of IP data to others and receive packets of IP data sent to them by someone else."[136]

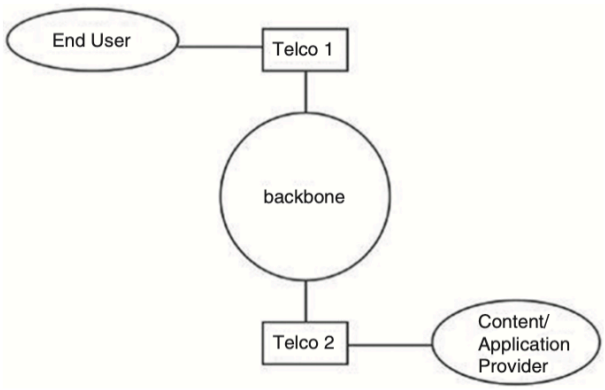

Figure 3: Basic Structure of the Internet (Kempbell/Perry, 2017, 270)

[133] Kempell & Perry, 2017, 268
[134] “The internet consists of a collection of privately owned networks that, when interconnected in an open and “neutral” manner, can be used *as if* they were a unified public network.” Ibid.
[135] Ibid.
[136] Ibid. 269

"Inherent to this structure, telecommunication companies charge their customers on the basis of how many data packets are sent and received, and all data packets are transported with equal priority", this was called "network neutrality": "the network is *neutral* with respect to who is sending or receiving data, and what the content of that data is. This tariff structure based purely on quantity was a design principle of IP, intended to make the network as flexible as possible and allow it to be put to unforeseen uses in the future – with the intended goal being the fostering of innovation."[137]

In the 2000s, telecommunication companies became capable of circumventing network neutrality while still offering IP connections. This is because "the cumulative fall in the price of computer processing power during that decade meant that it became both technically feasible and commercially viable for telecommunication companies to use routers that could open every IP data packet as it passes and look inside to see what sort of data it contains, a technology known as deep packet inspection (DPI)."[138]

Telecommunications companies had "no choice but to adopt IP when they began offering Internet access on a commercial basis because it had already been developed and deployed. With DPI, they became capable of many new tariff opportunities because it offered them the possibility of discriminatory pricing on the basis of what kind of service or product was delivered in a stream of data packets as well as the crude volume being transported."[139]

This capability was at the heart of this issue, because it changed the nature of the IP-enabled public infrastructure network – telecommunication companies became capable of being something akin to "the postal service opening and "skim-reading" every letter it handles, before delivering it."[140]

[137] Kempell & Perry, 2017, 269
[138] Ibid. 270
[139] Ibid 268
[140] Ibid. 270-271

6.1.2. Structural and Contingent factors

6.1.2.1. Structural Factors – the Historical Objective of European Telecommunications Policy

European telecommunications policy had previously addressed "network neutrality", but it had addressed this issue from the perspective of the European project of building a single market for telecommunications, and from the perspective of the project of generating economic growth by building an "information society".

6.1.2.1.1. Spatio-Temporal Fix: „Embedded Neoliberalism" and the Knowledge-Based Economy

The Lisbon Treaty (2009) formalized the contemporary configuration of the European Union, a configuration productively captured by van Apeldoorn as "embedded neoliberalism".

"Embedded neoliberalism" had developed as a reaction to the "long-downturn" of the 1970s in Europe and North America. This long-downturn led to a crisis of European capitalism and a crisis of the European integration project, which had been Western Europe's response to the Second World War and to the loss of empire. The supranational response to this crisis lay in the subsequent relaunching of the integration process through the internal market programme and the Single European Act (SEA).[141]

The Lisbon Treaty formalized a specific configuration of the internal European market – "embedded neoliberalism" was a synthesis of three transnational strategic projects that had rivalled to respond to the crises of the 1970s. All three projects had favored a relaunching of Europe through a completion of the internal market, but they fundamentally differed on *what kind* of European market it ought to be.

In the "neo-mercantilist" conception, the project of European integration was primarily conceived as creating a big home market – supported by an active industrial policy and, if necessary, protected by European tariff walls – in which "European champions" would be

[141] van Apeldoorn, 2009, 23

able to successfully confront American and Japanese competition. In the "neoliberal" conception, the free market aspects of the internal market were emphasized, a free market which ought to be open to and fully integrated in the emerging global economy. Lastly, the "social democratic" project sought to protect and consolidate the "European social model" in a supranational regulatory framework.[142]

The neoliberal and neo-mercantilist strategies were ultimately the most dominant compared to the social democratic strategies and can be interpreted as contending strategies on the part of rival groups or "fractions" within the ranks of Europe's transnational capitalist class. The main dividing line within this capitalist elite throughout the 1980s and into the 1990s was between a "globalist" fraction on the one hand, which consisted of Europe's most globalized firms, and a "Europeanist" fraction on the other, which was made up of large industrial enterprises primarily serving the European market. The perspective of the former tended towards neoliberalism, whereas the latter came to promote the neo-mercantilist project.[143]

Van Apeldoorn shows that the process of creating the European internal market was both a process of creating a "home market" in the sense of the neo-mercantilists, while at the same time this internal market was opened up to the global economy: "It is hence that the regionalization of the European economy, in the sense of the further integration of its national economic systems, went hand in hand with a further globalization of the European region and the subordination of its economy to global and to a large extent US-centered forces. […] In the transnational struggle over Europe's "extended relaunch" we can thus observe the rise of a neoliberal concept of control. This struggle had also been fought out within the ranks of Europe's transnational capitalist class in which the Europeanist fraction was slowly losing its dominant position and moreover itself gradually abandoned its earlier neo-mercantilist perspective."[144] As van Apeldoorn shows extensively, the European Roundtable of Industrialists played a central role in coordinating the work of the European

[142] van Apeldoorn, 2009, 23
[143] Ibid.
[144] Ibid. 24

Commission, as well as in providing a vehicle within which the neoliberal and neo-mercantilist forces fought with each other.[145]

According to van Apeldoorn, "what in fact developed in the 1990s was a synthesis in which neoliberalism attained its hegemony through incorporating elements of the two contending projects, integrating them in such a way that the antagonism of these rival projects was effectively neutralized, and the primacy of the neoliberal objective of free markets and free enterprise secured"[146]

Van Apeldoorn denoted this synthesis "embedded neoliberalism": "To some this concept may seem to be a contradiction in terms inasmuch as neoliberalism is a disembedding force. Indeed, it is, and as such embedded neoliberalism must be seen as inherently contradictory, but at the same time also as offering the kind of temporary stabilization of these contradictions in such a way that at least at the elite level hegemony could be secured within Europe's transnational economy. Embeddedness – drawing on Polanyi (1957) – here refers to the role of the state in sustaining and reproducing markets by in effect protecting society from the destructive effects of the self-regulating markets. The term "embedded" in embedded neoliberalism thus refers to what Polanyi (1957) called the *principle of social protection* "aiming at the conservation of man and nature as well as productive organization" whereas neoliberalism is associated with the *principle of economic liberalism* "aiming at the establishment of a self-regulating market." It is these two opposing principles that embedded neoliberalism thus seeks to combine."[147]

According to van Apeldoorn, "the "embedded" component of embedded neoliberalism addresses the concerns of the former neo-mercantilists as well as those of the European labor movement and social-democratic political forces, but these concerns are in the end subordinated to what became the overriding objective of "competitiveness" defined in neoliberal terms of market liberalization and market discipline. Indeed, what can be called a *neoliberal competitiveness discourse* informing EU socio-economic governance in the 1990s

[145] van Apeldoorn, 2009, 23-24, van Apeldoorn, 2002
[146] van Apeldoorn, 2009, S. 24
[147] Ibid. 24-25

in fact became a linchpin in the discursive articulation of the embedded neoliberal hegemonic project."[148]

The "Knowledge-Based Economy" is an international accumulation strategy. It was a strategy for economic change and a new "fix" within the "global economy".

According to Fairclough (2006), its emergence as an international strategy was in large part due to the USA's decision in the late 1980s to base its bid to defend its global economic hegemony from European and East Asian competition on its supremacy in knowledge industries and what came to be called "intellectual property", and the dominant version of the Knowledge Based Economy is the globalist version associated with the two nodal discourses of globalism and the KBE. The US strategy for reasserting hegemony in the face of competition was significant for the selection and subsequent retention/institutionalization of the KBE. "This was, however, one element in the build-up of one precondition for its selection and retention – the backing of powerful international forces. The strategy of the KBE also received backing from international institutions, notably the OECD and the WTO, and from the EU. Another precondition was that the previously dominant form of capitalism, Fordism, had entered a long-term crisis in the 1970s, and after a long period of uncertainty the KBE proved to be an effective strategy and imaginary for an alternative. This was in part because it captured changes which were underway before the KBE emerged as a strategy and discourse – changes in technologies and especially the development of information and communication technologies, in the labor process (including the steady expansion of service industries), in forms of business organization and so forth."[149]

In the 1990s, the EU saw "information industries" as growth vehicles for the European economy. "Information society" formally became part of the EU policy programme in 2000, when the Lisbon Agenda set out a policy of establishing "an inclusive, dynamic, and knowledge-based economy".[150] It "adopted the strategic goal of becoming the most successful knowledge-based economy in the world", however – in lines with its "embedded

[148] van Apeldoorn, 2009, 26
[149] Fairclough, 2006, 81
[150] Horten, 2011, 60

neoliberal" concept of control, it "defined this goal with a commitment to "social inclusion" and to a modernized version of the European social model."[151]

In this way, "embedded neoliberalism" and the European version of the "knowledge based economy" were the European iteration of a global "spatio-temporal fix" after the long downturn of the 1970s – expressed by Jessop in the formulation "KBE + Competition state" – the view being that "the state enables business to succeed in the global KBE by establishing conditions for competitiveness."[152]

6.1.2.1.2. The EU's 2002 Telecommunications Framework and the "Mere Conduit" Principle

The European Union's telecommunications policy reflected the policies taken to enable the single market, as well as the information society accumulation regime. The objective of policy in the telecommunications sector was to build an information society. The underlying objective was economic growth. The strategy for doing so was to build a single market for telecommunications.

The policy goal of regional competitiveness was brought about by pursuing a single telecommunications market. This happened by privatizing previously national telecommunications monopolies, liberalizing national telecommunications markets, and harmonizing telecommunications law in Member States.[153]

In line with this strategy, Member States and the European Union share regulatory competence for telecommunications services. The responsibility of the European Union was primarily focused/constrained on ensuring the competitiveness of the European telecommunications markets.[154]

[151] Fairclough, 2006, 80
[152] Ibid. 81
[153] Savin, 2018, 38-47
[154] Ibid. 70-72

An orchestrated solution for policy implementation was chosen "as a functional solution to compensate for the Commission's lack of operational capabilities to directly implement EU policies"[155] in BEREC, the Board of European Regulators of Electronic Communications. This "regulatory network" was seen as acceptable by Member States because "persistent goal divergence in the field of telecommunications" led them to advocate for a regulator with loose(r) ties to the European Commission.[156]

Orchestration is a mode of governance widely used by International Governance Organizations (IGOs) "when they enlist intermediary actors on a voluntary basis, by providing them with ideational and material support, to address target actors in pursuit of IGO governance goals. Orchestration is thus both indirect (because the IGO acts through intermediaries) and soft (because the IGO lacks control over intermediaries). These features distinguish orchestration from traditional hierarchical governance, which addresses targets directly through hard instruments; from governance through collaboration with targets, which is direct but soft; and from delegation, which is indirect (because the IGO works through an agent) but hard (because the IGO can control the agent)."[157]

The accumulation strategy of the "knowledge-based economy" was pursued via the 2002 Telecommunications Framework. This Framework was designed to stimulate the construction of a new network infrastructure, on top of which businesses and other organizations could create growth and jobs via a digital economy. It consisted of a "common set of rules applicable to all communication services that were switched electronically, whether the networks were wireless or fixed, IP or circuit switched, broadcast or one-to-one." These rules explicitly excluded content. It was to be reviewed every five years.[158]

The 2002 Framework created five new directives: Framework, Access, Authorization, Universal Services and E-Privacy:[159]

[155] Blauberger & Rittberger, 2015, 39
[156] Ibid. 56-63
[157] Abbott, Genschel, Snidal, & Zangl, 2015, 3
[158] Horten, 2011, 30
[159] Ibid.

"The Framework Directive set up the basic principles of telecommunication regulation, including the operation of the market, the allocation of resources and the duties of the regulator. The regulators' duties included protecting the rights of European citizens, with a specific duty to protect their privacy. The duty to protect citizens was as important as establishing a competitive market, ensuring fair play between the network operators, and ensuring free movement of services in the EU internal market. The principle of end-to-end connectivity was part of the new Access Directive. The Authorization Directive created the requirements that network providers had to fulfil in order to be permitted to trade. Breach of those requirements could result in the users being fined or, in serious cases, stopped from trading."[160]

"The second bundle (Universal Services Directive and E-Privacy Directive) explicitly addressed users' rights. Users' rights were contractual rights, that is, the rights that are stated in the contract between the network provider and the user, who may be a business or a consumer. Those rights concerned access to the network and to the end-to-end connection only. Rights applied to the ability to make price comparisons between different services, or the ability to switch service provider. The directive gave instructions for network operators in implementing those contractual rights."[161]

To achieve the information society policy objective, a legal distinction was established between the carriage of data and the content (E-Commerce Directive). "Content" applied to "services that are delivered via electronic communication networks". The definition encompassed websites and e-commerce sites. These were termed "information society services."[162] "Carriage" referred to companies which operate the carriage services for this content, such as telecommunications companies.

The "mere conduit" principle enshrined the relationship between "content" and "carriage": "the companies which operate the carriage services should be free from any liability for the content they carry (Article 12 and 14 of the E-Commerce Directive)." Network operators and broadband providers were therefore "intended to be a transmission system only, an

[160] Horten, 2011, 30
[161] Ibid.
[162] Ibid. 31

electronic equivalent of the post office. They were to carry the traffic without having any interest in the content contained within the data packets they transmitted. “Mere conduit” intended for the network to be technically neutral, and the broadband providers to have no legal liability for content. The principle was supported by a twin provision that governments shall not give a general obligation to broadband providers to monitor users’ communications (Article 15). The aim of these two provisions was to give legal certainty to the network operators, who the European Commission felt would not flourish if they were continually subjected to legal action over liability claims.”[163]

In order to provide for a flourishing of “information society services”, these were only lightly regulated. “OTTs fell out of the scope of the regulatory framework and were not subject to sector-specific regulation. Since the framework applied to electronic networks (“transmission systems”) and services (“conveyance of signals”), and OTTs are neither transmission systems nor do they convey signals, they are not caught by any obligations applied to telecommunications companies. At the same time, the vast majority of OTT services fell within the provisions of the 2001 E-Commerce Directive simply because they provide information society services. Those that also provide audio-video services fall within the scope of the AVMS Directive. While this meant that OTTs were caught by at least one regulatory circle, both e-commerce and media laws were significantly less onerous than telecommunication laws.”[164]

6.1.2.2. Contingent Factors – Three Reactions to European Telecommunications Policy

Three dynamics in the 2000s led to the rationale for the “mere conduit” principle to be questioned by media companies, by citizens, and by telecommunications companies themselves.

[163] Horten, 2011, 31
[164] Savin, 2018, 265

6.1.2.2.1. Dynamic 1: Copyright Confrontations

The first historical dynamic was a confrontative response by copyright industries to the practice of illegal filesharing by European citizens using computers, software, and the internet, which translated into a policy conflict between copyright industries and telecommunications companies – the copyright industries wanted to make telecommunication companies liable for the traffic travelling across their networks.

The roots of this dynamic lay in the "participatory dispositive" by which the internet, software, and computers were sold.[165] European citizens began using computers to copy and reproduce cultural goods via the internet protocol on fixed landlines. These new media practices, afforded by music and video archiving/organizing platforms,[166] led to the "appropriation of corporate design and commercial media texts, as well as uncontrolled global distribution channels."[167]

These practices threatened the business models of the "copyright industry" sector, "a term describing those companies whose business models mainly revolved around the exploitation of the copyright on copyrighted products. […] Central to their business model is the artificial creation of scarcity in order to reduce the distinctive risks of the media business, high production costs, volatile business, and the relatively high chance of failures, by tightening control over distribution and market regulation through copyright policies and vertical market organization. This business model came under severe pressure through the digitalization of media products and the ability to distribute them at almost no cost."[168]

In response, this sector turned to copyright policy to confront these new media practices – specifically, copyright enforcement.[169]

[165] Schäfer, 2011, 9-76
[166] Schäfer, 2011, 47
[167] Schäfer, 2011, 127
[168] Ibid.
[169] Horten, 2011, 40

Copyright policy addressed two related notions: rights related to creative works, and the enforcement of those rights. Copyright enforcement enables an author or a rights-holder to take legal action in respect of payment, to stop or prevent further infringement or to obtain damages or sanctions against infringers.[170]

EU copyright policy was based on economic objectives because copyright underpinned the economic models of the corporations involved in the reproduction and distribution of creative works. It, "had not really caught up with the Internet and file-sharing. European copyright law had been updated for the Internet era with the insertion of the "making available" right in 2001, which effectively was a right to distribute (as differentiated from a right to copy), and therefore was a legal instrument to use in respect of peer-to-peer file sharers, who were technically distributing (by uploading as well as downloading). European copyright enforcement law lagged behind and was not implemented until 2004. Even then, it did not address peer-to-peer file sharing, although it did contain a provision for rights-holders to take out a court injunction against the broadband providers, which opened the door for lawsuits. This provision was reinforced in two other European directives – the Copyright Directive and the E-Commerce Directive.[171]

To dissuade copyright infringement, the copyright industries intended to sanction users. For this, they needed the cooperation of telecommunications companies to monitor copyright infringing practices on their networks. However, the E-Commerce Directive ("mere conduit principle") was not open for review in the 2000s – a review of its implementation had been postponed and the official responsible for it was understood to be against any change. There was therefore no possibility to get the E-Commerce Directive changed.[172]

According to Horten, telecommunications law "offered a potential workaround for the copyright industries. This was because it was arguable that the Telecommunications Framework (2002) set out the rights and the responsibilities of the network operators and their contractual relationships with their subscribers, and that it was within its scope to insert any change in their responsibilities, which may be required for another purpose.

[170] Horten, 2011, 42
[171] Ibid.
[172] Ibid. 43

Likewise, the Telecommunications Framework spelt out the duties of the regulator. This therefore created an opening for the potential insertion of amendments to enable copyright enforcement."[173]

Such a move "would have been controversial, however, because these provisions existed within a complex ecosystem of regulatory requirements. For example, the Framework specified a duty for the regulator to protect citizens' rights, namely the right to privacy, and specific obligations in relation to privacy were detailed in the E-Privacy Directive. Likewise, from the perspective of the telecommunications companies, it was clear that content was excluded from the Telecommunications Framework, and it followed that copyright enforcement would be outside of the scope of the Telecommunications Package."[174]

More fundamentally, telecommunications and copyright policies were "inherently in conflict. Telecommunications policy valued open connectivity, whereas copyright policy implied restriction and exclusivity. This inherent conflict was especially sharp when considering the liability issue – an instruction to make broadband providers liable for enforcement of copyright would have immediately conflicted with the principle of *mere conduit*, established in the E-Commerce Directive."[175]

Nonetheless, the copyright industries pursued this course of action at different scales, not only at the scale of the European Union – they successfully pursued the introduction of "graduated response" laws in Great Britain and France[176], and after 2008 they pursued an international agreement predicated on the same dissuasion reasoning in ACTA (Anti-Counterfeiting Trade Agreement).[177]

[173] Horten, 2011, 43
[174] Ibid.
[175] Ibid. 44
[176] Ibid.
[177] Horten, 2013, 56

6.1.2.2.2. Dynamic 2: Politicization of the Internet Protocol

The second dynamic emerged in Europe out of a problematization by "new media practitioners" of the strategies of the rights holders against the background of the affordances of the personal computer, software, and the Internet.

From the perspective of the "new media practitioners", the Copyright Directive (2001) and the increasing focus on copyright enforcement appeared to threaten essential properties of the personal computer, software, and the internet.

Central to this dynamic was the FLOSS (Free/Libre Open-Source Software) movement in the United States and Europe, which had its roots in the software developer community. It had "introduced a paradigm shift in software development because it had proven that it was possible to develop and continually extend complex software, such as the GNU/Linux operating system, by relying on a decentralized network of voluntary developers across the globe."[178]

Open source had a "participatory development model", "in which the source code is publicly available and where each developer chooses what to work on." This logic was opposed to "traditional, top-down software design".[179] Such projects "advanced an approach to property which centered on a right to distribute what one owns – thereby clashing with the conventional notion of property as a right to exclude":[180] It "led to the development of "copyleft" licensing", and "built on copyright law by requiring that all improved or modified versions of a program be released under the same legal requirements, promoting the right to use, distribute, and modify software."

In this way, "the key site of contestation and the source of unity for FLOSS developers" was "their rejection of the use of Intellectual Property Rights (IPRs) to protect or monopolize certain aspects of the common use of coding conventions, routines, or algorithms."[181]

[178] Breindl, 2011, 348
[179] Ibid.
[180] Ibid.
[181] Berry, 2008, 108 cited in: Breindl, 2011, 348

Consequently, “when the Digital Millennium Copyright Act (DCMA) criminalized the bypassing of copyright protection afforded by the production and distribution of technology in the United States in 1998, it encountered strong opposition amongst FLOSS advocates. In Europe, a debate around the possible introduction of software patents generated widespread awareness among the European FLOSS community from 1998 onwards.”[182]

These regulatory strategies, led by the focus on “enforcement” and the tipping of the balance of power in favor of the rights holders sketched out in Dynamic 1, sensitized many European FLOSS supporters about the dangers of intellectual property rights legislation. Importantly, it sensitized these actors about the importance of looking at the European scale, the scale which had by that time become the origin of two-thirds of EU Member States’ legislation. The significance of intervening at the EU level “was confirmed when Member States transposed the EU copyright directive, which forbid the production and distribution of devices that circumvented copyright protection.”[183]

The politicization of these actors took place against a wider historical background in which information society policymaking was problematized / politicized amid debates about “internet governance” – on a global scale at the United Nations, and on a national scale in the United States, the hegemon in information society policymaking.

Around the turn of the century, the United Nations became the arena in which debates about the future of the “information society” were held. The UN held the “World Summit on the Information Society” (WSIS) in the early 2000s, purportedly aimed at addressing questions of global equity in the development of information society policies. In this vein, the United States based ICANN was problematized as undergirding the hegemony of the United States in the development of the “information society”. Resulting from this problematization at the United Nations was the Internet Governance Forum (IGF), a venue in which internet governance policy questions were to be debated in a “multi-stakeholder approach”. These initiatives were controversial, however, because they were seen as being

[182] Breindl, 2011, 348
[183] Ibid.

inherently ineffective: the IGF was derided as a "talking shop" with no real powers[184], and the WSIS criticized as inherently privileging business interests while claiming "multi-stakeholderism".[185]

Events in the United States in the 2000s led to the popularization of the term "network neutrality" "to serve as an all-embracing term for policy matters relating to Internet regulation".

This had happened because it became clear in the United States market that telecommunication network operators and ISPs had incentives that might lead them to block Internet traffic from their competitors or charge certain service providers to terminate their traffic on their networks while offering preferential treatment to others. In a highly concentrated telecommunications market such as the United States, the concern was that, if ISPs were permitted to introduce these new management practices, the Internet, as it was presently experienced in democratic countries, might begin to fragment into networks operated by a few dominant companies, with implications for the future use of this open platform for innovation and for the cost of public services.[186]

It therefore became clear in the United States that "network neutrality" was a *convention*, a practice of interconnecting privately owned telecommunication networks. This convention – which interconnected privately owned networks in an open and "neutral" manner – allowed them to be used *as if* they were a public network. Events made it appear as if this convention could easily be altered by different business practices.

"Network neutrality" therefore emerged as a *normative ideal* in the United States, a guiding idea for internet regulation: "the idea is that a maximally useful public information network aspires to treat all content, sites, and platforms equally. This allows the network to carry every form of information and support every kind of application."[187]

[184] Hofmann, 2016, 35-43
[185] Chakravartty & Sarikakis, 2006, 145-168
[186] Hart, 2011
[187] Wu, www.timwu.org/network_neutrality.html

The discussion over whether and how to regulate the interconnection of telecommunication networks so that they approach this normative ideal in the United States has been an ongoing discussion for the past twenty years and provided an important background to the events in Europe. This was because of the hegemonic status of the United States in the development of the information society – as detailed in part 6.1.2.1.1. Therefore, events in the United States served as a canvass against which debates in Europe were compared, and which offered reasons for action on the European scale. A separate thesis could look at the development of this debate in detail, as well as – importantly - its interaction with events in Europe.

Suffice it to briefly sketch out the development of this debate, since milestones of it played a significant role in the development of the European policy process: "its regulatory roots lay in the 1996 Telecommunication Act, which essentially divided services into several types: Type I services – information services – provided the Federal Communications Commission (FCC), the US telecommunications regulator, with only narrow competences. Type II services, on the other hand, covered telecommunications and gave it much wider competences. In 2002, cable modem services were classified as Type I services. In 2010, the FCC passed the "Open Internet Rules", which introduced a moderate version of network neutrality: in essence, it required that no lawful devices, content, and applications should be blocked, that network management practices should be disclosed to customers and that discrimination should not be "unreasonable"."[188]

"In June 2014, the "no blocking" and "no discrimination" parts of the rules on the open Internet were vacated. The essence of the judgment was the statement that the FCC has chosen to classify broadband providers as not falling under Title II (common carriers). Having thus decided that the Internet is not under Title II, the FCC had not competence to regulate it as if it was. The FCC attempted to introduce network neutrality again in 2015 during the Obama administration, essentially classifying broadband under Title II and thus giving itself competence to regulate it. Essentially, the common carrier status of the Communications Act of 1934 and Section 706 of the Telecommunications Act of 1996 was applied to the Internet.

[188] Savin, 2018, 271-272

However, with the change of administration in 2017, proposals for rolling back the Title II classification were suggested and ultimately adopted in December 2017, thus eliminating network neutrality rules, and returning to the state that existed before 2010."[189]

In summary, the background to this second dynamic was one where the significance of technical decisions made by corporations to the development of the internet was being recognized ("code is law"), and at the same time this was being connected to the fundamental rights of citizens ("public infrastructure"). This dynamic was highly sensitive to the unintended social consequences which the actions of corporations could have in the context of personal computers, software, and the Internet.

The latent conflict between the normative ideal of "network neutrality" and EU law was that enshrining a normative notion of network neutrality in European law would have meant redefining the "mere conduit" principle as being about protecting users' fundamental rights – especially the right to freedom of expression – rather than being about the protection of telecommunications carriers from liability claims. It would have meant redefining "rights" in telecommunications policy as being about fundamental rights, not merely contractual rights.[190]

6.1.2.2.3. Dynamic 3: European Telecommunication Companies Search for New Perceptions

The third dynamic was driven by challenges facing European mobile network operators due to the reconfigurability and horizontalization of mobile networks in the 2000s. In looking to respond to these challenges, they wanted to persuade regulators and consumers that they ought not be seen as "mere conduits", but rather that they provide a value added.

Up until the 2000s, the European mobile system set-up had been characterized in terms of vendor driven, "linear" technological evolution and a central mobile operator position based on "closed" mobile service provision as well as of network access. Its central success had

[189] Savin, 2018, 271-272
[190] Horten, 2011, 80

been 2G, the GSM standard – a circuit-switched standard. This standard was highly successful globally and had given the European mobile industry a leading global position.[191]

Importantly, mobile telecommunications were a "systemic innovation" which had a different history from the development of the internet.[192]

Since the 1980s, "innovation in European mobile telecommunications networks had been organized following a linear and coordinated approach. It was based on the "complementarity" between the various components of a mobile telecommunication system (favoring coordination between producers of complementary components), on the advantages of interoperability between mobile networks in order to obtain "network effects" (favoring coordination between producers of competing technologies), as well as on the reliance on policymakers to allocate scarce spectrum to specific technologies (favoring coordination between business stakeholders and policymakers)."[193]

In the 2000s, innovations by the leading IT and internet companies from the United States, including Intel, Cisco, IBM, Sun, Microsoft, Apple, and Google fundamentally challenged "the entire mobile system set-up that was characterized earlier in terms of vendor driven, "linear" technological evolution and a central mobile operator position based on "closed" mobile service provision as well as of network access."[194]

Two major emerging challenges were the horizontalization of mobile services and the reconfigurability of mobile access.[195] The first emerging challenge – the horizontalization of mobile services – "was at the level of operator management and the associated services and applications. The mobile telecommunications Operations Support Systems (OSS) frameworks that constituted an important part of the GSM system set-up, were increasingly being called into question by novel IT-oriented frameworks."[196] The second emerging challenge – the reconfigurability of mobile access – "concerned the radio interface, which influenced the

[191] Ballon, 2009a, 20-27
[192] Ibid. 20
[193] Ibid. 22
[194] Ibid. 46
[195] Ibid.
[196] Ibid. 46-48

access network and handset components of the mobile communications system. It referred to the established cellular network technologies being potentially supplemented by a range of wireless technologies, optimized for data (IP packets) transmission, and often championed by companies other than the established telecom vendors (i.e., by US-based IT industry giants), within a more flexible and technologically neutral regulatory framework."[197]

Ideal typically, European mobile telecommunications companies in the 2000s were faced with a fundamental conflict between a "telecommunications system of innovation" and an "internet system of innovation":[198]

The "telecommunications system of innovation" understood "intelligence" as located in the center of the network, i.e., "intelligent network, dumb terminals". Innovation in the network would be closed, with high entry barriers for innovators. The value of innovation would be appropriated by telecommunications companies and equipment providers. Innovation (i.e., R&D labs) were seen as a separate function in a large telecommunications company – i.e., innovation was centralized. Innovation would be hardware/software-driven, with long lead times. This system would be dominated by large, vertically integrated telecommunications companies, whose relationship to equipment supplies was one of vertical integration and controlled competition. There were quality rules, leading to longer-term horizons; trials were seen as a sequential process; and a high-cost structure was seen as acceptable to this system.[199]

By contrast, in the "internet system of innovation", intelligence is in the periphery – i.e., "intelligent terminals, dumb networks". Innovation in the network would be open, with low entry barriers for innovators. The value of innovation would be appropriated by the innovator. The network itself would be the innovation laboratory: testing, debugging, modifying, innovating would be increasingly done on the network, i.e., innovation would be distributed. Innovation would be increasingly software-driven with very short lead times due to the leveraging of cooperation from many small hi-tech firms. It would be dominated by small, flexible, networks and/or segmented-form firms. It would consist of networked,

[197] Ballon, 2009a, 48-50
[198] Ibid. 31
[199] Ibid. 32

flexible alliances with multiple equipment suppliers who'd use standardized components, with multiple options being pursued simultaneously. Pragmatism would lead to short time horizons. Trials were concurrent experimentation on the network, with an overall low-cost structure.[200]

Initially, the European mobile industry had greeted the contrasting openness of the "internet system of innovation" because to mobile operators there were "a number of factors, all related to fundamental differences between the fixed and mobile network environment, that seemed to mitigate the threat posed by Internet convergence considerably, and that on the contrary seemed to create major opportunities for opening up new revenue streams."[201]

The reasoning was as follows: "first of all, the Internet had not been designed with mobility in mind, and this appeared to require firms wishing to compete in a future "mobile internet" arena to possess or obtain rather specific competencies in the distribution and delivery of mobile data". "Secondly, due to the nature of radio access and the prevailing licensing regime, mobile access networks were undoubtedly characterized by scarcity rather than abundance, and this was not likely to disappear soon." "Thirdly, mobile users were used to paying for all mobile services (unlike for "free", "fixed" Internet websites), and were used to pricing models related to the time length of connection. With such a pay-for-bandwidth logic, and given the large revenues from the small band SMS data application, expectations were high as to the revenues that could be engendered by data services requiring higher bandwidth"; "fourth, given the contemporary limitations of data services consumption on mobile handsets (small screen size, uneasy data input, lack of color screens, limitations in terms of searching content, limitations in rendering images or video, limited battery life, heterogeneity of terminal specifications and so on), intermediaries were deemed to be needed to adapt content and services to the particularities of the mobile environment." "Fifth, given not just the limitations but also the advantages of mobile access (i.e., ubiquity, identification, localization, and immediacy), completely new types of services and internet usage patterns were expected to arise."[202]

[200] Ballon, 2009a, 32
[201] Ibid. 33
[202] Ibid. 33-34

As a result, Asian-European competition in the "mobile internet" happened in Europe in the 2000s, but it revolved around different conceptions of "traditional" cellular telecommunications.[203]

The roll out of the mobile internet in Europe was problematic, however, and the European mobile telecommunications industry was in a period of crisis, with European telecommunications companies searching for new business models.[204]

The horizontalization of mobile access led to a move towards "platformization" in the mobile communications industry. There was, however, a context of strong "interface ambiguity" or even "platform ambiguity". The aim to control gatekeeper roles drove strategies in the mobile industry.[205]

As part of their attempt to control gatekeeper roles, the European mobile companies experimented with different business models, which involved the blocking of competitors' services, the throttling of services, the zero-rating of their own services, etc.[206]

However, the complex regulation of telecommunication companies vs the lax regulation of "internet companies", was perceived by the telecommunication companies as a disadvantage in building their platforms. The perception was that they make only "normal" profits by supplying the infrastructure on which others go on to make "supernormal profits".[207]

They were interested in changing the definition of themselves as "mere conduits". They did not want to be understood as merely renting out infrastructure, rather, they wanted to persuade consumers and regulators that they add differentiated value to individual products.[208]

[203] Ballon, 2009a, 34-40
[204] Ibid. 40-42
[205] Ballon, 2009b
[206] Horten, 2016, 71-72
[207] Kempbell & Perry, 2017, 268
[208] Ibid. 268-269

This dynamic was therefore centrally opposed to the notion of introducing a *definition* of the status of telecommunication companies as "mere conduits" on the grounds of European citizens' fundamental rights.

6.1.3. Conflicting Problematizations of the „Network Neutrality" Policy Issue

A clear picture of the conflicting problematizations of "network neutrality" in the European Union can be found in the contributions of various stakeholders to a questionnaire by the European Commission (2010) on whether a network neutrality regulation for the EU was necessary.

According to Kempbell/Perry (2017), "stakeholders differed in terms of their overall framing of the term *innovation* as related to either the open-internet or to the free-market. They also differed in their prediction for the future *efficiency* of the internet.[209]

Concerning the framing of innovation, certain respondents cast this as "being about the development of new products and services based on the internet as a "free" market. They argued that prohibiting the delivery of high-end (i.e., differentiated) internet services would dampen innovation in this area." In opposition/difference to this, "other respondents highlighted how the open internet and the end-to-end principle were the key drivers of the benefits accruing from IP. They argued that the open-ended engineering of the internet is what allowed its success and penetration into a range of previously "offline" sectors."[210]

Concerning the future efficiency of the internet, "some stakeholders argued that increasing traffic required internet provision to allow for a prioritization business model. Their rationale was that charging for prioritization will pay for investments in the internet infrastructure and thus avoid a scenario of degradation of the service for all internet users." In opposition to this, another set of stakeholders argued "that prioritization would lead to the degradation of the less profitable public internet." They claimed that "offering prioritized services will erode

[209] Kempell & Perry, 2017, 280-281
[210] Ibid. 281

the incentive to invest in the public internet, which would become slower and lack connectivity to certain services."[211]

In this way, the conflict about network neutrality in the European Union was one which problematized this issue "around structural deficiencies in the institutional environment for innovation and efficiency in Europe."[212]

Kempbell/Perry show that this conflict was fundamentally between telecommunications companies, which unanimously favored not introducing a network neutrality regulation based on the argument that innovation would be secured by a free market and that efficiency would be secured by paid prioritization, and activists/outside groups which had no connection to the for-profit companies in the sector, who favored introducing a network neutrality regulation based on the argument that innovation would be secured by safeguarding the open-ended engineering of the internet, and that efficiency would be secured by prohibiting prioritized services. They show that "CAPs" (a category which includes both European media companies and American platform companies) were divided on the issue of network neutrality and appeared to be using it to criticize telecommunications companies while not being interested in having the idea of "neutrality" being applied to their own services.[213]

6.1.4. Summary and Findings

The context analysis showed that the question of whether European telecommunications networks ought to be regulated as if they were a public infrastructure was the central issue in the policy conflict I investigated.

This issue became central because European telecommunications companies became capable of opening IP data packets in the 2000s.

[211] Kempell & Perry, 2017, 281
[212] Ibid.
[213] Ibid. 276-285

The historical situation which had led to this issue was made up of structural and contingent factors.

The structural factors were that although "network neutrality" had been part of European telecommunications regulation, it had been intended as part of the European project of building a single market for telecommunications, and as enabling economic growth by building an "information society" – and in this line, it had been seen as a narrow measure to set up the relation between different industrial sectors in this new growth model.

The contingent factors were that the confrontative response of the copyright industries to losing control of distribution channels due to the EU's information society policies led to them to want to alter the "openness" of telecommunications networks. This response led to a politicization of telecommunications policy in Europe, against a background of the previous politicization of information society policies in the United States and at the United Nations. This politicization, as well as the confrontative response by the copyright industries, threatened the strategies of European telecommunications companies who saw themselves at a disadvantage when building their mobile platforms due to the different regulation of information society ("content") and telecommunication services ("carrier").

In this way, the conflict between two sectors: the copyright industries and the telecommunication companies, created a space in which telecommunications policy could be politicized – the question could legitimately be posed whether the "openness" of telecommunications networks ought not be grounded in citizens' fundamental rights. The interests of European citizens appeared on the scene of European telecommunications policy, which conflicted with the interest the European telecommunications industry had in abandoning the "mere conduit" principle due to it taking up "platformization" strategies.

The "network neutrality" issue was problematized regarding structural deficiencies in the institutional environment for innovation and efficiency in Europe, and problematized from two opposing perspectives:

One perspective argued that innovation could be secured by seeing the internet as a “free” market, and that the future efficiency of the internet could be secured by allowing for paid prioritization.

The other perspective argued that innovation could be secured by safeguarding the open-ended engineering of the internet, and that efficiency could be secured by not allowing paid prioritization, which would lead to a degrading of the public internet.

Telecommunication companies strongly argued for the former perspective, Activists and outside groups which had no ties to for-profit companies in the sector strongly argued for the latter. CAPs (both media companies and platform companies) were divided on the issue and seemed to be taking advantage of the network neutrality debate to further their own interests.

6.2. Process - Actor Analysis

6.2.1. Process Analysis

6.2.1.1. Process Reconstruction

6.2.1.1.1. Phase 1: Politicization of Telecommunications Policy

The first phase of the process was characterized by a politicization of telecommunications regulation in the course of the Telecom Reform (2007-2009). I chose to locate the beginning of this policy process here because it challenged the fundamental framework of EU telecommunications regulation and was unexpected as the Telecom Reform was intended to be a mere five-year update to the 2002 Framework.
The fundamental guiding principle of European telecommunications policymaking, namely that the aim was to create a single market for telecommunications, was questioned on the grounds that changes to telecommunications policy – under the guise of bringing about a single market – could inadvertently affect European citizens' fundamental right to freedom of expression. The envisioned criteria which ought to guide telecommunications policy were broadened.[214]

This phase ended with a "declaration on net neutrality" by the European Commission:
"The Commission attaches high importance to preserving the open and neutral character of the Internet, taking full account of the will of the co-legislators now to enshrine net neutrality as a policy objective and regulatory principle to be promoted by national regulatory authorities (1), alongside the strengthening of related transparency requirements (2) and the creation of safeguard powers for national regulatory authorities to prevent the degradation of services and the hindering or slowing down of traffic over public networks (3). The Commission will monitor closely the implementation of these provisions in the Member States, introducing a particular focus on how the "net freedoms" of European citizens are being safeguarded in its annual Progress Report to the European Parliament and the Council. In the meantime, the Commission will monitor the impact of market and technological developments on "net freedoms" reporting to the European Parliament and the Council before the end of 2010 on whether additional guidance is required, and will invoke its existing competition law powers to deal with any anti-competitive practices that may emerge."

This first phase resulted in a politicization of telecommunications policy because an attempt had been made by copyright industries to change the definition of telecommunications

[214] Horten, 2011, 61

companies as “mere conduits”: “the rights-holders had demanded that broadband providers be made responsible for dealing with copyright enforcement, and pursued measures known as “graduated response” – a system of warnings after the detection of instances of illegal filesharing, followed by suspension of the Internet account.”[215]

Graduated-response laws had already been introduced in Great Britain and France – during the 2007-2009 review the attempt was made to introduce them across the EU.[216] The telecommunications industry was opposed to any obligation to impose sanctions directly onto their customers, the Internet users.[217]

Policymakers in Brussels had to balance the needs of the two industries, which argued bitterly and could not come to any agreement.[218]

This factor “became a policy issue and was given a high profile, thanks to a counter-campaign by citizen lobbyists. European policy-makers had a second balancing act between copyright and users’ rights, and specifically between copyright and the right to a fair trial. This balancing act created an inter-institutional conflict between the European Parliament, which supported the right to a fair trial, and the member states in the Council of Ministers, where two governments – France and Britain – saw their graduated response laws being threatened.”[219]

Therefore, “the core policy issue of Internet copyright enforcement created fall-out in apparently separate policy areas: broadband provider liability (telecoms) and fundamental rights. In particular, it required a change to telecoms law in order to establish that liability shift.”[220]

[215] Horten, 2013, 70
[216] Ibid.
[217] Ibid.
[218] Ibid.
[219] Horten, 2013, 72
[220] Ibid. 1-3

Ultimately, however, the "graduated response" measures did not succeed in becoming EU law.[221]

During the same phase of the process, another key thing happened: "the European Commission had attempted to insert a network neutrality principle into the draft of the Telecommunications Package in 2007. This would have made it difficult for broadband providers to legally block internet traffic, by instituting a transparency requirement backed up by a quality-of-service requirement, an obligation on regulators to protect users' rights to access content, services, and applications. However, two things happened during the EU political process. These provisions were dropped by the European Parliament and replaced by amendments reflecting the telecommunications industry's preference for "meaningful transparency". As part of a political compromise, the language of "restriction" was changed to "conditions limiting access to and/or use of content, services and applications". The compromise provision stated that it neither "mandated nor prohibited" such conditions but did provide for information about them."[222]

In practice, this was interpreted to mean that it did not forbid broadband providers from blocking or traffic-shaping practices, as long as they informed subscribers – in line with the strategies of the telecommunication companies.[223]

The end of this phase was therefore – paradoxically - characterized by a de facto weakening of "network neutrality", while also putting "network neutrality" onto the policy agenda.[224]

6.2.1.1.2. Phase 2: Depoliticization of Telecommunications Policy

The second phase of the process began with a network neutrality summit by the European Commission in 2010. The first turning point came with the decision of the European Commission that a network neutrality regulation for the European Union was not

[221] Horten, 2013, 73
[222] Horten, 2016, 80
[223] Horten, 2016, 80
[224] Ibid.

necessary.[225] The European Commission based this decision on the argument that the measures to ensure network neutrality in the 2009 Telecom Review would be sufficient. Regarding empirical evidence of blocking/throttling by telecommunications companies, the European Commission tasked the regulator BEREC to investigate these practices.[226]

This decision by the European Commission came as a surprise to many observers. A reason for this was because it diverged from the FCC's Open Internet Order in 2010, which had signaled action in favor of a network neutrality principle. In a sign of the perceived necessity of – and interest in – a network neutrality regulation, different versions of implementing the directives on network neutrality in the 2009 Telecom Review materialized in Member States (France, the Netherlands, Slovenia, Norway).[227] It was also seen as necessary due to the blocking/throttling practices of telecommunications companies: a European solution seemed to be called for to be effective against transnational telecommunications companies.

To affect a European solution, a regulation seemed to be called for. This is because regulations are the strongest instruments the EU has since they apply directly in all Member States. In difference to this, EU directives are "weaker" instruments because they are transposed into national law by Member States.

This decision was taken by the European Commission against the background of the proposed solution for growth during the Financial Crisis. As Jessop and Heinrich have shown, the European Union surmounted nationalistic interpretations of the causes of the Financial Crisis by articulating its solutions in a technocratic discourse.[228] These solutions were found in a continuation of the Lisbon Agenda and were promoted by the European Roundtable of Industrialists.[229]

The "Digital Agenda", which was part of the "Europe2020" policy programme decided on in 2010, imagined a recovery from the Financial Crisis to be able to be brought about by

[225] Kempell & Perry, 2017
[226] Ibid.
[227] Horten, 2016, 82-83
[228] Heinrich & Jessop, 2014
[229] Ibid.

building next generation high-capacity networks. As Mansell has shown, this policy solution was path-dependent: it continued a supply side vision of telecommunication networks.[230]

An EU wide network neutrality regulation – as was proposed by proponents of it – would have meant introducing a principle of network neutrality which would be a different category than interpreting network neutrality as Quality-of-Service regulation. This would have meant that telecommunication companies would be significantly hampered in monetizing the networks which the recovery plan envisioned they would invest in, since it conflicted with their monetization strategies.

6.2.1.1.3. Phase 3: Repoliticization of Telecommunications Policy

In 2013, the EC published the Connected Continent Regulation, another five-year update to the Telecommunications Framework. It intended to harmonize conditions for telecommunications across Europe, in an effort to de-fragment the market.[231] In line with the "Digital Agenda", it was intended as a market facilitation measure which was to accompany the public private partnerships that had been chosen as a technology for facilitating research and innovation on 5G networks.

Public private partnerships had been selected as a governance technology because 1) they had already been used and certain partnerships could be repurposed, 2) they allowed the leveraging of public expenditure relative to private expenditure, which was compossible with the tight fiscal budgets as a result of the austerity policy chosen in response to the financial crisis, 3) they allow a soft, indirect form of governance which was compossible with the "regulatory gap" of the European Union, and 4) they were promoted by the European Investment Bank (EIB).

Like the Board of European Regulators of Electronic Communications (BEREC), Public Private Partnerships are an "orchestrated" governance technology. Where BEREC is a governance technology to "manage states" (see Context, part 6.1.2.1.2.), Public Private Partnerships are

[230] Mansell, 2014
[231] Savin, 2018

a governance technology to "bypass states" – and directly steer targets in the countries implicated in the development of 5G.[232] Public Private partnerships are "essentially contested notions".[233] Their use therefore allows for a considerable amount of flexibility in how they are applied and how the relationships between public and private are constituted over time.

The EIB was seen by Member States as a neutral, unpolitical institution which had, over the years, built up a considerable amount of trust and know-how "on the ground". The use of public private partnerships therefore came with expertise by the EIB, which made this solution very attractive. The EIB – contrary to its institutionalized status – acted as a policy entrepreneur for PPPs in this period.[234]

Crucially, however, the Connected Continent Regulation did not include a definition of network neutrality – nor was it subject to public consultation prior to being published, which was a breach of process.[235] This had surprised observers, and it was apparently an "open secret" that the Connected Continent Regulation had been drafted under pressure by the telecommunications lobby.[236][237] Adding to the pressure was that, as a regulation, it would have applied directly in all Member States.[238]

This "surprise by observers" was potent: throughout 2011 and 2012, a number of events occurred which would have appeared to build pressure on the European Commission to introduce a European network neutrality regulation: The European Parliament had passed a resolution in 2011 calling for a European network neutrality regulation[239] and had included, a.o., in its resolution on deliberations around a European Foreign Policy in the context of the

[232] Abbott, Genschel, Snidal, & Zangl, 2015
[233] Hodge, Greve, & Biygautane, 2018, 1108
[234] Liebe & Howarth, 2020
[235] Horten, 2016, 81
[236] "The Connected Continent 2013 Proposal attempted to regulate net neutrality. The provisions on net neutrality were part of Chapter IV on harmonized rights of end users. This chapter addressed restrictions and discrimination (Article 21), dispute resolution (Article 22), open Internet access (Article 23), quality of service (Article 24), transparency (Article 25), information (Article 26), control of consumption (Article 27), contract termination (Article 28) and bundled offers (Article 29). Like the 2009 Framework, the 2013 Proposal contains no clear references to net neutrality or definition." [Indirect regulation of net neutrality] Savin, 2018, 274
[237] Horten, 2016, 81
[238] Ibid.
[239] European Parliament, 2011

Arab Spring in 2012.[240] Crucially, the European Parliament had voted against the "graduated response" provisions which the copyright industries pursued at a transnational scale in ACTA on civil liberties grounds – after large street demonstrations across Europe accusing the European Commission of corrupt policymaking.[241]

In 2014, the European Parliament decided to include a definition of the principle of network neutrality in its First Reading of the Connected Continent Regulation. This was significant, since it introduced a red line – it negated the idea that network neutrality could be legitimately interpreted as a Quality-of-Service issue.[242] This was the second turning point in the process.

6.2.1.1.4. Phase 4: Separation of Telecommunications Policy Issues

In 2015, the "Open Internet and Roaming Regulation" was passed.[243] This was a narrowed down version of the "Connected Continent Regulation". It was narrowed down because the Council of Ministers had been internally split in 2014 over the network neutrality principle inserted by the European Parliament. They were split because the telecommunications incumbents of certain Member States were opposed to it.[244]

Crucially, the "Open Internet and Roaming Regulation" which was passed did not contain the network neutrality principle inserted in 2014. The "political will" was gone – amendments which were inserted for the European Parliament to vote on in its Second Reading, which would have restored the network neutrality principle, were not voted on - the European Parliament had decided not to decide.[245] The Council had agreed on a position against a network neutrality principle when Germany relinquished its support. BEREC was tasked with implementing the Open Internet and Roaming Regulation via guidelines.[246]

[240] European Parliament, 2012b
[241] Horten 2013, 54
[242] Horten 2016, 82
[243] Savin, 2018, 274-276
[244] Horten, 2016, 82-83
[245] Ibid.
[246] Savin, 2018, 277-278

The implementation of the European network neutrality regulation was criticized by proponents of it. It was said to lack a harmonized approach – national regulatory authorities were found to have divergent interpretations of the same EU-wide ruleset. They were also found to not be meeting their obligation to publish annual reports or to not follow the requirements issued by BEREC to provide at least a minimum level of transparency or comparability across Europe. Furthermore, the requirements in the regulation to clearly state minimum, average and maximum speeds in every contract for a fixed line internet connection was mostly ignored by the telecom industry and the telecom regulators. The fact that the Open Internet Regulation left the implementation of penalty provisions up to member states was found to have led to a "situation where some member states have not laid down rules for violations of net neutrality protection two years after the regulation entered into force."[247]

An explanation for the separation of the "Open Internet and Roaming Regulation" from the rest of the telecommunications agenda can be found in the Juncker Commission having decided that it would discontinue legislation which was stuck in the legislative process.[248] It decided to do this because it understood itself as a "political" Commission, in reaction to the sluggish recovery to the Financial Crisis in Europe.[249] It would have therefore opted to separate the network neutrality and the roaming issue from the rest of the telecommunications policy agenda.

The rest of the telecommunications policy agenda was addressed in the Digital Single Market Strategy, which it proposed in 2015. The DSM strategy was a broad plan which allowed for "elevating" the issue of digitalization together with an expanded focus on using public private partnerships as investment and steering technologies. This was the third turning point in the process.

The focus of the Juncker Commission was on digitizing European industry as part of the recovery from the financial crisis.[250] As part of this, the Juncker Commission focused on

[247] Lohninger et al., 2019, 6-7
[248] Selmayr, 2020, 46-47
[249] Selmayr, 2020
[250] Ibid. 38

facilitating investments via the EIF (European Investment Fund).[251] The EIF allowed for the circumvention of EU state aid rules via the expansion of national development banks.[252] The European Electronic Communications Framework (2016) would provide a comprehensive reform of telecommunications law.[253]

The European Electronic Communications Framework was passed in 2018. A 5G Action Plan had been adopted in 2016, and biannual roundtable meetings took place between social partners, ministers, and members of the 5G PPP on how to "roll out" 5G.

6.2.1.2. Aggregation and Analysis of the Constellation of Political Projects

Two political projects can be found in the development of the process.

6.2.1.2.1. A Core Political Project of Market-Led Next Generation High-Capacity Networks.

This political project is a special, concrete political initiative of fostering the deployment of NGA (Next Generation Access) networks. It was originally proposed by the European Commission as part of the "Digital Agenda for Europe" in 2010. It is based on the principles that,

"(i.) investment risk should be duly taken into account when establishing cost-oriented access prices, (ii.) National Regulatory Authorities should be able to impose the most appropriate access remedies in each case, allowing a reasonable investment pace for alternative operators while taking into account the level of competition in any given area and (iii.) co-investment and risk-sharing mechanisms should be promoted."[254]

It is a response to the social problem that,

"Today in Europe internet access is mainly based on the first generation of broadband, meaning internet accessed over legacy telephone copper and TV cable networks. However, citizens and businesses around the

[251] Bertrand, 2020, 71-74
[252] Mertens & Thiemann, 2019, 34-37
[253] Savin, 2018, 55-60
[254] European Commission, 2010a, 20

world are increasingly demanding much faster NGA networks. In this respect, Europe is still lagging behind some of our main international counterparts."[255]

Its purpose is to provide "fast and ultra-fast internet access"[256] in order to respond to the crisis in the Eurozone: "We need very fast Internet for the economy to grow strongly and to create jobs and prosperity […]".[257]

Under the Juncker Commission's Digital Single Market (DSM) Strategy, this political project shifted to address the pressing economic problem of the digitization of European industry. Its solution was to,

"[…] facilitate coordination of the large but fragmented R&D&I efforts in key digital technology fields. This can be achieved by strengthening the coordination role of the Public Private Partnerships (PPPs) established in H2020 (Horizon 2020) so that they become real aggregation frameworks and ecosystems for digital industrial innovations. PPPs can act as main vehicles for implementing EU-wide digital industrial strategies, ensure closer links between R&D&I and standardization efforts and foster the use of all available financial instruments, such as the work started towards a 5G Action Plan calling for coordinated investment in the next generation ubiquitous 5G networks, in order to deliver on industry's connectivity needs."[258]

Actors who are part of this political project are the following:

Standardization bodies such as the European Telecommunications Standards Institute (ETSI), 3GPP, The Open Network Foundation, OpenStack, Open Daylight, and OPNFV.[259]
Academics (e.g., the 5G Innovation Centre at Surrey University (UK), the Tactile Internet research at the Dresden Technical University (DE), the 5GmmWave center at New York University (US)).[260]
Equipment Supply Industry (e.g. Ericsson, Nokia, Siemens, Huawei, Samsung, etc.)[261]
Mobile Network Operators[262]
National Governments, The European Commission[263]

[255] Ibid.
[256] Ibid. 18
[257] Ibid.
[258] European Commission, 2016c, 9
[259] Lemstra, Cave, & Bourreau, 2017, 28-29
[260] Webb, 2019
[261] Ibid.
[262] Ibid.
[263] Ibid.

6.2.1.2.2. An Oppositional Political Project of Codifying a Network Neutrality Principle

This political project pursues "network neutrality" which is,

"[…] the principle that all traffic is treated without discrimination, restriction, or interference regardless of its sender, recipient, type or content. It means that users' freedom to communicate is not restricted by favoring or disfavoring (technically, financially, or otherwise) the transmission of specific Internet traffic."

It claims that,

"The fact that the network operator does not interfere with the traffic and no permission is needed to develop new applications is one of the important reasons why the Internet has grown to what it is today. People can access content from anywhere in the world, and they can publish to anywhere in the world. By implication, they can also trade with anyone, anywhere. The effect of network neutrality means small traders can reach big markets. Small media, for instance bloggers, can compete with big media. It is one of the reasons why democratic speech flourishes on the Internet, and why innovation thrives and trade can expand. Network neutrality means there are no gatekeepers and no tolls. The users can choose what they read, see and do, and not the network providers, and, in that regard, network neutrality protects free speech."[264]

This special, concrete political initiative proposes itself as a solution to the pressing social problem of the "negative externalities" which "interference with Internet traffic and restrictive practices by network operators" have:

"These restrictive practices concern the delivery of services and access to content. There are different ways that restrictions can be imposed. It can be, quite simply, discrimination, where the provider holds back or drops traffic. The motive may be commercial – to make the provider's own services look better and more desirable. Or it may be to act specifically against certain types of traffic, for example for copyright enforcement or parental controls. Another form of interference is throttling, where the traffic is slowed down. This is often done to peer-to-peer file-sharing traffic, making it so slow that the operator hopes to discourage people from doing it. Interference can also be paid prioritization, where, in return for payment, a provider will ensure that certain traffic travels faster and gets priority. Throttling and prioritization are sometimes referred to as the 'slow lane' and 'fast lane' Internet. On a similar principle, the operator may impose bandwidth caps – or limits – and then say that certain content is zero rated, which means it does not count towards the bandwidth limit."[265]

[264] Horten, 2016, 71
[265] Horten, 2016, 71-72

Actors who are part of this political project are the following:

Initiative für Netzfreiheit (AT), European Digital Rights (Brussels), Digitale Gesellschaft (DE), Access Now (Brussels), La Quadrature du Net (FR), Bits of Freedom (NL), GoVeto (DE), Reporters Without Borders, Open Rights Group (UK), IT-Politisk Forening (DK), Xnet (ES), Info House (SL), Startups for Net Neutrality (International), Föreningen för Digitala Frioch, Rättigheter (SE), Asociatia pentru Tehnologie si Internet (RO), Federation FDN (FR), Nurpa (BE), Digitalcourage (DE), Verbraucherzentrale Bundesverband e.V. (DE), Arbeitskreis, Vorratsdaten Österreich (AT), Wikimedia Austria (AT), Zveza potrosnikov Slovnije (SL), Active Consumers (BG), Fight for the Future (US), OpenMedia (CA).[266]

6.2.1.3. Summary and Findings

European telecommunications policy in this political process was constituted by two different political projects: one project which pursued next generation access networks and the digitization of European industry, and another project which pursued the codification of a network neutrality principle.

After an initial politicization of telecommunications policy in Europe – and therefore a variation in construals, the policy which was selected by the European Commission continued the previous approach to telecommunications policy. This happened due to the broader historical context of the financial crisis, and its imagined economic recovery – as well as the central role which telecommunications companies would play in investing in new networks. Public private partnerships were selected as governance technologies to facilitate research and development on 5G networks, with telecommunications regulation intended to defragment European markets.

This policy path confounded expectations of the proponents of safeguarding the open internet, leading to a repoliticization of telecommunications policy in 2014. Expectations had been built due to certain Member States introducing their own network neutrality laws, as well as the vocal advocacy of the European Parliament on this issue. This repoliticization led

[266] https://www.savetheinternet.eu/

to a split in the European Council between Member States with large telecommunications incumbents, and Member States who had introduced national network neutrality laws.

Ultimately, the European Commission chose to separate telecommunications policy issues, leading to both an "Open Internet and Roaming Regulation", and to a "Digital Single Market" Strategy, with a "5G Action Plan". Because of the way in which the "Open Internet and Roaming Regulation" was designed, it was effectively a Directive – which neither required Member States to alter their network neutrality laws, nor strictly speaking introduce new ones. It can therefore be seen as a concession to secure hegemony, and effectively depoliticized European telecommunications policy.

6.2.2. Actor Analysis

6.2.2.1. Critical Discourse Analysis of "5G Manifesto for timely deployment of 5G in Europe"

To investigate the hegemony projects in this process, the process of formulating the 5G Action Plan will be investigated. This will be done via a CDA analysis of the text "5G Manifesto for timely deployment of 5G in Europe". This text was published by the CEOs of 17 European telecommunication companies and four "vertical industries" in July 2016. It was intended as a response to EC Oettinger's call at Mobile World Congress 2016 in Barcelona for the industry to "make up its mind and contribute" to the formulation of the 5G Action Plan. The publishing of the 5G Manifesto took place towards the end of the public consultation on BEREC's draft guidelines for implementing the "Open Internet and Roaming Regulation". The process of formulating the 5G Action Plan was based on consultation with industry (roundtable meeting in Brussels), as well as "targeted consultations".

The practical reasoning exemplified in this text will be evaluated by drawing on the responses of other political actors to it at the time. This is possible because the "5G Manifesto for timely deployment of 5G in Europe" had a dual function: it provided an input to a roundtable meeting with the European Commission in Brussels; at the same time, however, it was also published and reported on by both general-interest media and industry-media. The dual function of this text – as being an instance of both public, political discourse,

while at the same time providing the input to a private round-table meeting, allows for this text to promise a particularly illuminating perspective on the constraints/enablement of the genre chain that had developed.

As far as can be seen, this text did not resonate in the international organization arena. It resonated in the supranational arena because it elicited a response by EC Oettinger in the form of an "opening statement" at the round-table meeting, which was made public by the European Commission – and whose argumentation was repeated by EC Oettinger copiously at the time [see Appendix 2]. The text also resonated in the (trans)national civil society arena: the three actors who explicitly responded to this text were "AK Vorrat" [see Appendix 3], "the Web Foundation" [see Appendix 4] and "Article 19" [see Appendix 5]. "Article 5" drew on an elaborate criticism levelled against the "5G Manifesto for timely deployment of 5G in Europe" by "Wireless Watch" [see Appendix 6]. Because this argument was explicitly referred to by "Article 5" as a relevant critique – although it appeared in a special-interest IT medium – it will be reproduced in the evaluation of the "5G Manifesto".

6.2.2.1.1. Argument Reconstruction

This argument reconstruction summarizes the findings. For a detailed argument reconstruction, see Appendix 1.

6.2.2.1.1.1. Circumstantial Premise

6.2.2.1.1.1.1. First issue

5G can be a key enabler for realizing the opportunities provided for the ICT and Vertical Sectors by the fast-paced digitalization of "vertical industries" and the public sector, but a strong 5G dialogue must be further developed between vertical industries and the telecom sector, starting from the basis of an in-depth mutual understanding.

The arguers claim that the situation is one where opportunities for Europe's information and communication technologies (ICT) and vertical industries to bring to market new and innovative solutions are provided. They explain that this is the case because of the fast-

paced digitalization of ‚vertical industries' and the public sector. The arguers claim that the situation is one where "5G can be a key enabler of this digitalization". They explain that this is the case because 5G accommodates "the diverse connectivity needs of industrial applications through a common 'system of systems' approach." The arguers assert that "industry Verticals expect 5G to deliver enhanced levels of service assurance and guarantees to cater for specialized use-cases." The arguers claim that the situation is one where 5G brings a fundamental enhancement. They explain that this is the case because it allows for the offering of different capabilities according to specialized needs via the possibility of delivering virtual 'network slices'. The arguers assert that "5G network slices are meant to run on shared infrastructure without deteriorating the agreed levels of service." The arguers claim that the situation is one where 5G avoids technology fragmentation, prevents energy and spectrum wastage, and facilitates cross-sector innovation thus improving the competitiveness of the European economy. They explain that this is the case because 5G preserves the economy of scale benefits of a common network infrastructure. The arguers assert that "5G can therefore facilitate connectivity, network access and service security of different vertical sectors and be instrumental to the management and automation of business assets and processes."

They assert that "4G technology and the future roadmap are pillars for 5G". They claim that "scale of investment is required to achieve 5G", "and an industrial collaboration between Telco and Industry stakeholders is required to ensure 5G can create substantial value by offering digital solutions that meet genuine business needs at European and global scale and across a variety of use-cases." The arguers claim that the situation is one where the telecommunication industry is inviting the European Commission and Member States to promote the benefits of 5G networks. They explain that this is the case because it is necessary to meet the digital connectivity needs of vertical industries and public institutions more cost-effectively than stand-alone or be-spoke solutions.

6.2.2.1.1.1.2. Second issue

The EU has a specific role to play in the ecosystem-forming initiatives by industry players

The arguers claim that "standards are crucial for 5G success". They claim that "EU policy makers play an important role in fostering 5G standardization, including: (i.) co-funding of standardization activities, (ii.) helping SDO (Standards Development Organization) harmonization; (iii.) incentivizing private sector investment into capital intensive, long-term R&D for contribution to 5G standards; (iv.) seamless interworking of verticals application across different technologies through standard interfaces (e.g. from cellular to satellite) to allow ubiquity and resilience in the 5G "system of systems" and (v.) encouraging 5G international coordination and cross-sectorial endorsement (through participation of representatives of European vertical industries to the development of 5G standards and vertical use-cases) while avoiding any duplication of standards across telco and vertical industries." The arguers claim that the situation is one where the creation of a skilled community of software developers is equally crucial to 5G success. They explain that this is the case because it is necessary to bring the next wave of technology innovation to full business fruition with value adding vertical applications.

The arguers claim that the situation is one where there ought to be greater coordination across European stakeholders' various pre-commercial trials. They explain that this is the case because it is necessary to achieve greater awareness and momentum for 5G. The arguers claim that the situation is one where 5G standards ought to be released. They explain that this is the case because these would allow deployments to act as catalysts to turn innovation into full business fruition. The arguers assert that "a two-phase trial roadmap, encompassing different use-cases, is being proposed." They show the two-phase trial roadmap. The arguers then assert that, "the industry players are committed to delivering a roadmap of trials and demonstrators by January 2017, to achieve interoperability of networks and use-cases for the period 2018 – 2020 and make 5G benefits known to vertical players, investors and the general public."

The arguers claim that “funding is required to incentivize vertical industries to experiment with new services that are enabled or enhanced by 5G technologies, as early as 2018 and to allow the 2-way process to align requirements between 5G networks and vertical industries. Such grants can be between the €0.5bn (billion) to €1.0bn range (also from existing EU funding instruments), awarded through agile governance.” The arguers claim that an instrument such as a 5G Venture Fund, “above the €1bn mark, would allow the EU to take equity stakes in European innovative start-ups aiming at developing 5G technologies and applications across verticals. If equipped with cross-industry expertise and venturing best practices, the 5G Venture Fund will become catalyst for digital innovation at European scale (500 million users, several billions of connected objects), attracting private capital along the way to accompany successful start-ups during the upscale process.” The arguers claim that “in order to bootstrap the 5G demand market, Public Institutions (such as national health services, education, municipal authorities, etc.) also have a critical role to play as early adopters or anchor tenants of 5G solutions that, with associated budgets, can help to kick-start 5G in Europe in the 2020 timeframe.”

6.2.2.1.1.1.3. Third Issue

There are specific requirements in order for a 5G action plan to unfold in a Digital Single Market.

6.2.2.1.1.1.3.1. First sub-issue

The arguers claim that “sufficient spectrum – licensed in time and at reasonable prices – is needed if the 5G target launch date is to be met and to support the various applications and technologies that are envisaged in a ‘system of systems’. They claim that “this means harmonized licensing of 700MHz, 3.4-3.8GHz and higher- frequency bands (for 24 GHz and beyond) by 2020 taking into account the outcomes of ongoing studies, preparing to identify and clear future expansion bands, and removing restrictions in existing licenses and uses that might prohibit the deployment of 5G”. The arguers then assert that “the spectrum aspects of the Digital Single Market – namely, harmonization and predictability of spectrum policy across Member States (including spectrum availability, licensing procedures and costs,

license terms, and liberalization and renewal of existing spectrum) – are also essential to encourage more investment into the mobile sector and in 5G".

6.2.2.1.1.1.3.2. Second sub-issue

The arguers claim that the situation is one where vertical industries require pan-European and cross-border 5G services. They explain that this is the case because vertical industries operate across European Member States. The arguers claim that the situation is one where the automotive, smart grid, transportation & mobility, manufacturing, and media & entertainment sectors call for initial deployments as soon as 2020. They explain that this is the case because they will be front-runner 5G users. They assert that "in order to help make this new ecosystem a reality, European operators will target launching 5G in at least one city in each of the 28 European Member States by 2020." The arguers claim that the situation is one where these cities will be strong and tangible innovation platforms for Europe. They explain that this is the case because they will be hubs of social and economic activities.

6.2.2.1.1.1.4. Fourth Issue

Investments need to be put at the center of the 5G policy framework

The arguers assert that, "5G is expected to require significant investments over time, including a new radio access layer, high bandwidth backhaul links, core network upgrades and, for certain scenarios, increased densification of cell sites". They then assert that "such investments will take place if the right regulatory environment is created in particular in the context of the forthcoming review of the European Electronic Communications Framework."

The arguers provide a description of what "improved regulatory certainty" means: "Fewer and simpler rules focused on cases where regulated access to key infrastructure (not replicable through competitive investment) still needs to be safeguarded, based on an assessment of market competition at the retail level; The right risk investment environment that encourages commercial flexibility through co-investment and risk-sharing models allowing for a fair long-term return on investments." The arguers claim that the situation is

one where ex-ante regulation ought to be withdrawn. They explain that this is the case because greater investment incentives for all players in fiber among other 5G ready infrastructures can be brought about. The arguers claim that the situation is one where long-term commercial agreements should be encouraged wherever possible as an alternative to regulation. They explain that this is the case because they can enable competitive outcomes.

Following the subheading, "local regulation to facilitate the construction of denser networks", the arguers claim that "5G will require a step-up in investment in mobile access points and supporting fixed infrastructure." The arguers claim that the situation is one where greater harmonization and simplification of rules and the removal of deployment barriers, including: right-of-way for the installation of passive facilities; supporting municipal site rental charges; removal of taxation on sites and antennas; and predictable, harmonized electromagnetic field (EMF) emissions limits is required. They explain that this is the case because it is necessary to achieve a dense deployment of 5G infrastructure.

The arguers claim that the situation is one where converged regulation that is light touch, future-proof and that facilitates a European single market for services is needed. They explain that this is the case because digital services are converging. They assert that "the telecom Industry warns that the current Net Neutrality guidelines, as put forward by BEREC, create significant uncertainties around 5G return on investment." They claim that "Investments are therefore likely to be delayed unless regulators take a positive stance on innovation and stick to it." They assert that "Telco and Industry Verticals concur that the implementation of Net Neutrality Laws should allow for both innovative specialized services required by industrial applications and the Internet Access quality expected by all consumers."

The arguers assert that "5G introduces the concept of "Network Slicing" to accommodate a wide-variety of industry verticals' business models on a common platform, at scale and with services guarantees." The arguers claim that the situation is one where a flexible and elastic configuration of resources in networks and platforms, on a continuous basis, depending on demand, context and the nature of the service is called for by automated driving, smart grid control, virtual reality, and public safety services. They explain that this is the case because

automated driving, smart grid control, virtual reality and public safety services are examples of use-cases with distinguished characteristics. The arguers claim that the situation is one where BEREC's draft proposal of implementation rules could make telcos risk-averse. They explain that this is the case because the telecom industry says that BEREC's draft proposal is excessively prescriptive. The arguers claim that the situation is one where the exploitation of 5G could be hampered. They explain that this is the case because the fundamental agility and elastic nature of 5G Network Slicing to adapt in real time to changes in end-user / application and traffic demand is being ignored by BEREC's excessively prescriptive draft proposal of implementation rules. The arguers claim that the situation is one where the 5G objective of creating new business opportunities to satisfy future end-user needs would be at risk. They explain that this is the case because the regulation would not be coherent with the market demand evolution.

The arguers claim that the situation is one where EU-wide scale support, with Member States acting coherently – whether in regard to licensing, providing appropriate state support (such as public investment into a digital spine), or directing early public sector participation is required. They explain that this is the case because the success of 5G will depend on it.

6.2.2.1.1.2. Goal Premise

The short-term change in the state of affairs is that "effective interactions and collaboration with industry verticals, the formation of ecosystems as a result of large-scale demonstrators and an investment-centric policy framework are being fostered."

The long-term change in the state of affairs is that "the 5G innovation 'window' is being capitalized on".

The medium-term change in the state of affairs is that:

- The development of the 5G ecosystem is being driven.
- The 5G target launch date is being met. The various applications and technologies that are envisaged in a 'system of systems' are being supported.

- The deployment priorities and roadmaps across EU Member States have been aligned.
- The required investments are taking place.
- 5G is exploitable.

6.2.2.1.1.3. Value Premise

The general concern is “to ensure European digital leadership in 5G and beyond.”

To the end of this general concern, a range of specific concerns are presented:

- “A strong 5G dialogue is being further developed between vertical industries and the telecom sector, starting from the basis of an in-depth mutual understanding.”

- “5G success.”

- “To achieve greater awareness and momentum for 5G.”

- “A 5G action plan unfolding in a Digital Single Market.”

- “Investments are at the center of the 5G Policy Framework.”

- “To realize the 5G objective of creating new business opportunities to satisfy future end-user needs.”

6.2.2.1.1.4. Claim for Action

The arguers advance a multi-layered claim for action.

The short-term claim for action is:

- “The agent (the arguers) (presumably) ought to publish a ‘5G Manifesto for timely deployment of 5G in Europe’.”

The long-term claim for action is:

- The agent (the EC and Member States) (presumably) ought to speedily implement ambitious cross-sector policy enhancements.

The medium-term claims for action are:

- The agent (the European Commission) (presumably) ought to consider allocating funds to trials and large-scale demonstrators and to a 5G Venture Fund (in addition to funding research and innovation projects of the 5GPPP), which are characterized by lean administrative procedures, simple and effective governance, while focusing any infrastructure funding on physical infrastructure, such as ducts or a digital spine.

- The agent (an authority) (presumably) ought to license sufficient spectrum in time and at reasonable prices.

- The agent (the European 5G Action Plan) (presumably) ought to reassure vertical industries that 5G deployment, as a progressive evolution from the existing 4G technologies, will be synchronized across Europe to achieve homogenous availability both in terms of location and time.

- The agent (an authority) (presumably) ought to create the right regulatory environment, in particular in the context of the forthcoming review of the European Electronic Communications Framework.

- The agent (the arguers) (presumably) ought to highlight the danger of restrictive Net Neutrality rules in the context of 5G technologies, business applications and beyond, state that it is paramount to ensure 5G monetization to drive investments, state that operators should also be free to mix and manage different technology generations, and state that the success of 5G will depend on EU-wide scale support (whether in regard to licensing, providing appropriate state support, or directing early public sector participation), with Member States acting coherently.

6.2.2.1.1.5. Means-Goal Relation

The means-goal relations advanced by the arguers are centered around necessity. The arguers do not state whether they are to be regarded as sufficient:

- It is necessary for the agent (the arguers) to publish a 5G Manifesto for timely deployment of 5G in Europe, in order for effective interactions and collaboration with industry verticals, the formation of ecosystems as a result of large-scale demonstrators and an investment-centric policy framework to be fostered.

- It is necessary for the EC and Member States to implement ambitious cross-sector policy enhancements in order for the 5G innovation 'window' to be capitalized on.

- It is necessary for the agent (the European Commission) to consider allocating funds to trials and large scale demonstrators and to a 5G Venture Fund (in addition to funding research and innovation projects of the 5GPPP), which are characterized by lean administrative procedures, simple and effective governance, while focusing any infrastructure funding on physical infrastructure, such as ducts or a digital spine, in order for [the development of the] 5G ecosystem to be driven.

- It is necessary for the agent (an authority) to license sufficient spectrum in time and at reasonable prices, in order for the target launch date to be met and the various applications and technologies that are envisaged in a 'system of systems' to be supported.

- It is necessary for the agent (the European 5G Action Plan) to reassure vertical industries that 5G deployment, as a progressive evolution from the existing 4G technologies, will be synchronized across Europe to achieve homogenous availability both in terms of location and time, in order for roadmaps and deployment priorities across EU Member States to be aligned.

- It is necessary for the agent (an authority) to create the right regulatory environment, in particular in the context of the forthcoming review of the European Electronics Communications Framework, in order for the required investments to take place.

- It is necessary for the agent (the arguers) to highlight the danger of restrictive Net Neutrality rules in the context of 5G technologies, business applications and beyond, state that it is paramount to ensure 5G monetization to drive investments, state that operators should also be free to mix and manage different technology generations, and state that the success of 5G will depend on EU-wide scale support, with Member States acting coherently (whether in regard to licensing, providing appropriate state support, or directing early public sector participation), in order for 5G to be exploitable.

6.2.2.1.1.6. Negative Consequences of (No) Action

The arguers explore the negative consequences of interpreting “the right regulatory environment” to mean imposing stricter obligations on “electronic communications” providers than on other providers of digital services, instead of promoting equality of opportunity to innovate. They argue that this will amount to a failure to act, by explaining that “converging digital services need converged regulation that is light-touch, future-proof and that facilitates a European single market for services.” Regulation, therefore, “should define principles to protect consumer rights and competition, focusing on outcomes (e.g., service characteristics) rather than on means (e.g., how operators evolve and manage their networks).” They say that “the telecom Industry warns that the current Net Neutrality guidelines, as put forward by BEREC, create significant uncertainties around 5G return on investment” and claim that “investments are therefore likely to be delayed unless regulators take a positive stance on innovation and stick to it.” Therefore, “the EU and Member States must reconcile the need for Open Internet with pragmatic rules that foster innovation.” They assert that “Telco and Industry Verticals concur that the implementation of Net Neutrality Laws should allow for both innovative specialized services required by industrial applications and the Internet Access quality expected by all consumers.”

6.2.2.1.2. Argument Evaluation

6.2.2.1.2.1. Criticism of the Rational Acceptability of Premises

6.2.2.1.2.1.1. Is the context of action defined in a rationally persuasive way?

####### 6.2.2.1.2.1.1.1. The National and Supranational Arena

EC Oettinger agrees with the problematization of the circumstances of action:

"Connectivity and courage is a must. That the technology can be used. Pan-European cross-border, in rural areas, all over Europe. And so, no doubt you, your companies, your products, and your services, in the past have been mainly relevant for mobile communication. For to send human messages from A to B. And now it's about data flow. It's about transport of data. Between machines; between other devices; between smart buildings; between trucks and cars; between cars and cloud and back to other cars. So, the telecom sector; installations, infrastructure, and services: hardware and software, is in an important and increasing role. And I think, Europe shouldn't be a late comer. Europe should have the ambition, beyond some differences we have, to organize a world class digital infrastructure via fiber, via satellite, via 5G. That's our common ambition."

####### 6.2.2.1.2.1.1.2. The (Trans-)National Civil Society Arena

AK Vorrat disagrees with the definition of the circumstances of action in relation to the characterization of the affordances and limitations of 5G network slicing, and the policy requirements which flow from this characterization:

"The claim that network slicing is an enhancement 'brought by 5G' is inaccurate since network slicing can also be achieved in other networks such as current specialized networks (via Network Functions Virtualization (NFV) and Software Defined Networks (SDN)). It should therefore be understood that legal restrictions on the use of network slicing do not constitute legal restrictions on the rollout of 5G networks as such".

AK Vorrat also disagrees with the claim that "BEREC's Guidelines are 'excessively prescriptive' as they ignore the fundamental agility and elastic nature of 5G Network Slicing to adapt in real time to changes in end-user / application and traffic demand and would hamper the exploitation of 5G":

"We dispute this claim and argue that 5G can be deployed under the first draft of BEREC's guidelines, as well as under the guidelines described in our Recommendation submitted with European Digital Rights together with 7 other organizations. This can be proven with the announcement from Verizon to roll out 5G in the USA under the recently court-affirmed net neutrality rules of the FCC Open Internet order. FCC open Internet access rules give precedence to application agnostic traffic management measures over class-based traffic management measures and the FCC rules don't have a specific exception for specialized services which would go beyond the specialized service provisions in the BEREC draft guidelines."

They add that,

"On a technical note, it is important to highlight that 5G is in no way dependent on technologies like 'network slicing', which as specified by Ericsson's white paper, as an addition to 5G specification: 'The concept of network slices is not a new one; a VPN, for example, is a basic version of a network slice.'

"Article 19" does not disagree with the characterization of the context of action; however, it argues that considerations around the development of 5G concerning human rights have not been considered and ought to be included in the circumstances of action:

"The manifesto has been strongly criticized by 'the register' [special interest IT publication on whose site an article by "Wireless Watch" was published], as it calls into question the necessity of current net neutrality standards in Europe. The companies claim that the guidelines may limit innovation, warning that the current European net neutrality guidelines 'create significant uncertainties around 5G's potential for return on investment.' Article 19 suggests that the [UN] Special Rapporteur highlight the need for respecting human rights in all 5G discussions […]"

"Article 19 suggests that the [UN] Special Rapporteur closely monitor the developments surrounding 5G, and advocates for telcos to deploy and develop it in full respect of human rights. 5G is the next generation of mobile internet connection (tentatively scheduled for rollout in 2020), which will enable faster Internet connections and more portability. It is not merely an evolution of mobile networks, but as a new technology that will allow for entirely new capabilities in a number of fields: it will impact Internet speed, bandwidth, power consumption for devices, and human rights. It promises a major shift in the way radio spectrum is allocated and used, allowing for a hugely expanded "Internet of Things", as well as a dramatic improvement in the speed of content. At the same time, it is unclear what standards and protocols this new connectivity will use, how much it will cost, or what infrastructure will be needed to implement it. How these decisions are made will drive the impact of 5G on human rights – in particular, the right to freedom of expression and access to information. 5G could replace wired Internet, at least in urban centers: this would give even more power to

telcos, centralizing power to one stakeholder group and potentially creating a chokehold of control over the Internet."

The argument presented by "Wireless Watch", which "Article 19" referred to, criticizes the representation of the circumstances of action as not being adequate to the reality of the next generation of mobile services. It also criticizes the representation of the circumstances of action in relation to the central premise of the "5G Manifesto", namely that "5G can be a key enabler for realizing the opportunities provided for the ICT and Vertical Sectors by the fast-paced digitalization, but a strong 5G dialogue must be further developed between vertical industries and the telecom sector, starting from the basis of an in-depth mutual understanding", by casting doubt on the representation of the relationship between the telecommunication companies and the vertical industries:

"The central argument was that strict neutrality rules, if applied to MNOs [Mobile Network Operators], would limit their ability or motivation to invest in 5G. This reflected several key preoccupations of the MNOs:

- Can they secure return on investment on 5G capacity investments when much of the service revenue goes to over-the-top providers?
- Can they avoid being just bit-pipes for those providers?
- How can they maintain their connection or data feed in the IoT world?

Operators are missing the point of 5G on many levels. All these are the wrong questions when it comes to the next generation of mobile internet services, and they explain why there is deep mistrust of the MNOs in many of the vertical sectors which hope to harness 5G to become always-connected. Senior players in markets like transport, utilities and manufacturing believe that mobile operators remain fixated on mobile broadband data and will not prioritize services which require different network behavior (high availability, but small amounts of data, for instance), or different methods of charging.

In reality, those three questions are already being answered, by a new set of companies which are coming from the IT and over-the-top worlds into the heart of the mobile network. As the European operators were rehashing their 4G concerns under a 5G banner, Facebook was showing off its OpenCellular open-source network concept; Lenovo was unveiling its OpenPlatform for virtualized telco systems; and AWS was acknowledging that cloud services are already commoditized – but not sounding dismayed about that.

These are the companies which will really drive the next generation of mobile broadband and bring it to the unserved masses and the sidelined vertical sectors. Regardless of what the 3GPP decides about air interfaces, these broader architectures, which turn the mobile network into an easily deployable, commoditized IT platform, are the real revolution. So far, very few MNOs are really driving these changes, despite lip service to

Cloud-RAN. Even where they are investing in radical architectures, they are stuck in old approaches to ROI on those build-outs, erecting garden walls to keep out unlicensed spectrum operators, cablecos or OTT providers; talking about NB-IoT service fees based on similar models to those for consumers; worrying about neutrality.

Meanwhile, the barbarians are at the gates already. The over-the-top giants have turned into drivers of new infrastructure. Google, Amazon, and Facebook know all about building multi-billion-dollar platforms very cost-effectively and using them to enable a host of other providers. They will now turn that expertise to mobile networks, as those evolve into IT service platforms thanks to developments like Mobile Edge Computing (MEC) and network slicing – the real cornerstones of 5G, not a new evolution of OFDM."

6.2.2.1.2.2. Criticism of the Validity of the Argument

6.2.2.1.2.2.1. Are the suggested means necessary? Are there other (better) means to achieve the stated goals?

6.2.2.1.2.2.1.1. The National and Supranational Arena

EC Oettinger agrees that the suggested means are necessary but says that they are not sufficient regarding the goal of convincing European politicians and citizens that "Europe and 5G is the future", regarding the goal of increasing collaboration between the telecom sector and "other advanced vertical sectors", and regarding the goal of benchmarking European 5G deployment against other regions of the world. He suggests additional means, which he would like to discuss with the authors of the "5G Manifesto for Timely Deployment of 5G in Europe":

"First of all, I would like to thank you, your teams, for the timely delivery of the 5G Manifesto. I could read it, it's clear, it's I think in a perfect structure, it's an ambitious offer from your side to us and our European citizens. This remarkable result was achieved in three or four months only and I'm very grateful for your efforts. Let me also thank those of you who joined the initiative since our initial meeting on the twelfth of January. The additional telecommunication operators as well as the representatives of other industries. I think we should all feel privileged to be here in such a distinguished company and I would like you to make the best of this occasion. Ladies and Gentlemen, what is at stake is nothing less than our future competitiveness. Back in 2007, five major mobile phone manufacturers controlled ninety percent of the industry's global profit. These were Nokia, Samsung, Motorola, Sony Ericson, and LG. Europe was in lead as far as 3G deployment was concerned. You know what happened next? Almost the entire mobile phone business was wiped out from Europe. Member states took their time before releasing 4G licenses, and the deployment of 4G networks has been

slower in Europe than in Korea, Japan, the US or even China. Europe is now catching up with 4G but we have a chance with 5G to go further, and to put our economies in the lead of the next digital revolution. Connecting everything that can be connected. And this is why business as usual can't be an option. This is why the Commission has launched in December 2013 the 5G Public Private Partnership, with a planned budget of 700 million Euros until 2020; and you are investing much more. Our 5G PPP is doing well and Europe has the capacity to emerge once more as technology leader, I think. However, as we agreed in January, it's not enough. 5G is not only about the telecom industry, it is about the whole economy. The whole society. It is about using networks as part of our businesses and of our lives. My hope is therefore, that we can deploy 5G networks with a plan to use them to digitize the economy and society. To enable a virtuous circle where we are both leading on the supply side, with excellent technology providers, and at the same time pioneering services on the usage side, followed by quick deployment in emerging lead markets. Today I don't want to lecture you about what you should be doing. I want a candid and honest conversation about what we can do together so that 5G technology deployment delivers positive results for your businesses as well as for European citizens and consumers. Dear colleagues, I could read your manifesto, and I think it makes a lot of sense. And I would like to thank you for the contribution. There are also a few elements of the manifesto where I would like more discussion today. We need something visible to offer to our EU citizens. To make them believe in our 5G future: in Asia they use the Olympics, what should we use in Europe? Here I would like to hear from you what are the attractive options that we could single out? Is it the next European football championship? Is it Formula 1? Eurovision? Tour de France? Or something totally different? Like a series of Smart Cities that connect and showcase some similar applications? To convince politicians and our citizens that Europe and 5G is the future, we need some concrete projects, some concrete test fields, some concrete demonstrations. Secondly, I would like to hear some concrete steps that we could take to increase collaboration between the telecom sector and other advanced vertical sectors. What should we do already in 2017 for instance? Before 5G is available commercially? And finally, I was expecting some inspirational targets going beyond 2020. So that we can benchmark ourselves against other regions of the world. Should we have all motorways in Europe with 5G by 2025? What is our ambition? All new buildings with fiber? All new cars with 5G and upgrades for the rest cars so that everyone can migrate to 5G? Here I am looking for something realistic, but something tangible in terms of a common goal."

6.2.2.1.2.2.1.2. The (Trans-)National Civil Society Arena

"Article 19" does not disagree with the necessity of the proposed means, but says that these are not sufficient: they ought to be supplemented by the creation of a coordinated and inclusive action plan on standards, spectrum, and infrastructure development in the deployment of 5G technologies:

"Article 19 suggests that the Special Rapporteur highlight the need for respecting human rights in all 5G discussions and supports the creation of a coordinated and inclusive action plan on standards, spectrum, and infrastructure development in the deployment of 5G technologies."

"AK Vorrat" disagrees with the suggested means that "it is necessary for the agent (the arguers) to highlight the danger of restrictive Net Neutrality rules in the context of 5G technologies, business applications and beyond, state that it is paramount to ensure 5G monetization to drive investments, state that operators should also be free to mix and manage different technology generations, and state that the success of 5G will depend on EU-wide scale support, with Member States acting coherently (whether in regard to licensing, providing appropriate state support, or directing early public sector participation), in order for 5G to be exploitable", arguing that this fundamentally misunderstands the relationship between strong net neutrality rules and incentives to invest in network infrastructure. More deliberation would have been necessary, in other words:

"The Manifesto claims that BEREC's first draft of the Guidelines will lead to delayed investment in infrastructure rollout, since it is too restrictive. We note that strong net neutrality rules - such as those outlined in our Recommendations - will actually increase incentives to invest in network infrastructure. Firstly, invasive, application-specific forms of traffic management, can allow ISPs to delay necessary upgrades to their infrastructure. Secondly, application-specific zero-rating and price differentiation can distort IAS markets by tying such services to specific CAPs and reducing pressure to compete on the IAS' 'core business' of bandwidth & price. Thirdly, if technical or economic discrimination is allowed to grant certain CAPs priority in terms of service quality (via specialized services) or exclusion from data cap allowances, the incentive for ISPs to expand network capacity actually decreases, because scarcity of network resources is a precondition for the monetization of this type of vertical integration."

"Wireless Watch" claims that the suggested means around coordinated action on standards, spectrum, network deployment and ecosystem development across different verticals can reasonably be seen as necessary. It disagrees, however, with the position that the means connected to a "light regulatory approach" are necessary. It says that these means are not necessary in relation to the reality of the market situation, and their pursuit would actually be dangerous - more deliberation by the Manifesto authors would have been necessary, in other words:

“The 5G Manifesto, presented to Digital Economy Commissioner Gunther Oettinger last week by a group of 17 leading operators and vendors, does not raise high hopes that the new-look "5G operator" is going to emerge in Europe.

Ostensibly, the Manifesto is a roadmap to accelerate testing and deployment of 5G in order to get new services to citizens and to put Europe back in the cellular driving seat. The operators – which include Deutsche Telekom, BT, Telecom Italia, Vodafone, Orange, Telefonica and others, as well as the large vendors Ericsson and Nokia – would commit to cooperating on multi-country trials from next year; to mounting user trials as soon as the standards are finalized in 2018; and to deploy a commercial network in at least one city per EU country by 2020. […]

On the reasonable side, it calls for coordinated action on standards, spectrum, network deployment and ecosystem development across different verticals. But beyond that, it descends into the same kind of lobbying the operators have been doing for a decade.

The European MNOs always tend to get a rush to the head when they try to work collectively, but this Manifesto is particularly wrong-headed.

The details of the proposal revolve around the "5G Action Plan" - a timetable for testing and deploying 5G, which would be welcome if it were related to market need rather than net neutrality haggling. The operators say they would start with technology trials, using pre-standard prototypes, by multi-country consortia in 2017; then kick off user trials once the 3GPP standards are finalized in 2018. The aim would be to have live 5G services running in at least one city per EU country by 2020.

There is a list of caveats attached to this roadmap. One, the industry wants the EU's support to ensure appropriate spectrum is available, with harmonized licensing of the 700 MHz, 3.4-3.8 GHz and higher frequency bands above 24 GHz, across the EU by 2020. That would necessitate a unified EU position at the World Radio-communication Conference in 2019.

Two, the operators want financial support for large scale 5G demonstrations, which they say would encourage vertical industries to get involved in trials. Those verticals may feel like poor relations in a 5G process which is so driven by the telecoms vertical itself, but their digital transformation is critical to the EU’s vision of the socio-economic impact of 5G. The Manifesto suggests that existing EU funding mechanisms could be used to provide grants totaling €500m to €1bn, in addition to proposing a new 5G venture capital fund, to support startups developing 5G technologies and services.

Three, the operators think the Action Plan is dependent on the EU taking a light regulatory touch, to make it easier for essential enablers like spectrum, fiber and small cell sites to be made available. The Manifesto echoes similar demands by operators in the past, as well as their trade bodies GSMA and ETNO, to reform the regulatory framework. The general theme is that the EU should keep its regulatory attention mainly on

encouraging competition in retail services, while the rules surrounding sites and infrastructure should be relaxed in order to ease and accelerate network deployments, and support co-investment and network sharing agreements among MNOs.

This last is almost inevitable if there is to be a next wave of infrastructure building, before most operators have seen the return on their initial LTE rollouts.

Network sharing on a large scale is a natural first step to a wholesale-only, utility model, a massive bitpipe role which most MNOs are still resisting.

And in looking for new cost structures for 5G networks, sharing will not be radical enough – in reality, operators will be forced to adopt the commoditized, open-source approach espoused by Facebook's TIP (Telecoms Infrastructure Project), and by Google and Amazon. That will ease their ROI burdens, but will push them into a supply chain which they no longer control.

While the first three caveats are not unreasonable, even though they betray worryingly old-fashioned thinking, the fourth really highlights how the MNOs have been left behind by modern thinking."

6.2.2.1.2.2.2. Are the goals of action rationally acceptable? What other goals have been considered?

6.2.2.1.2.2.2.1. The National and Supranational Arena

EC Oettinger agrees that the goal premises are rationally acceptable. This is because he says they further his goal of a "perfect public private partnership" between the European Commission and the 5G Manifesto authors as a European response to the "global challenge" of developing next generation infrastructure:

"We are seeing what is happening in the world - looking to South Korea - and I'm sure Hillary Clinton will have a clear priority campaigning next month saying the digital sector with online platforms, with hardware and software, with infrastructure, has to be an American advantage. An argument to invest in the US. And so, we are in challenging times. What we need is a perfect public private partnership. What we need is a clear common vision. What should be developed, what should be regulated, what should be non- or deregulated, what should be moderated, what should be constructed, installed, in the next three four five years. That's it. And here we count on you, on your expertise, on your economic and technical and financial capacity, and we want to hear your expectations to us. Looking to our 700-megahertz band proposal, looking to our telecom review, looking to our 5G Action Plan, looking to spectrum policy and so on. And I'm sure, even eurosceptical people named Farage or whatever else, Johnson, they can't be against our todays work. Nobody can. And it's

about EU 28 plus to integrate Switzerland, Norway, West Balkan states, Ukraine, Turkey, Russian Federation. Because it's a global challenge and we need a continental answer as you and we are doing. 5G is an opportunity for Europe to reclaim the lead, to use connectivity as a way to invent future markets and make good business for you."

6.2.2.1.2.2.2.2. The (Trans-)National Civil Society Arena

"Wireless Watch" claims that the stated goals of the "5G Manifesto" authors are not their real goals: their real goals are to mitigate net neutrality rules in order to protect their traditional strategies:

"So the European operators' "5G Manifesto" was not a vision of a whole new way of building networks and delivering services. It was basically a negotiating ploy to mitigate net neutrality rules. […]
Three weaknesses in the MNOs' position:

- One, it does not reflect the real objectives of most of the operators, whose priority – outside the showcase 5G roll-outs to keep board directors and PR advisers happy – is to continue to squeeze more capacity, revenues, and ROI from LTE for as long as possible. Deutsche Telekom itself said this week that it needed at least a decade of LTE evolution and coexistence after 5G appears, echoing a similar statement by 5G trailblazer NTT Docomo of Japan.
- Two, the motivations are not as pure as the top line public statements suggest. There are significant strings attached to the operators' commitments – not just the call for more spectrum and lighter touch regulation, but (the real agenda) demands for concessions on net neutrality. The draft neutrality guidelines are "excessively prescriptive", warned the MNOs, and would be a barrier to 5G investment and the provision of vertical market services. The operators have legitimate points, especially when it comes to offering mission critical services to enterprises and public agencies, which will require priority.
- And three, the thinly veiled bribes in the Manifesto just confirmed that, when thinking about 5G, most MNOs remain preoccupied with their traditional concerns - protecting their exclusive network and spectrum rights, competing in the same old way. […]

The EU and national regulators are still working on exact guidelines and interpretations of Europe's neutrality rules, even though these are already in place. The draft regulations are "excessively prescriptive", say the operators, and "could make telcos risk-averse" when it comes to 5G investment. One of the points they raise seems very pertinent – will neutrality laws allow operators to offer specialized services for verticals, which may require priority treatment in terms of availability and reliability? Driverless cars and smart grids clearly require a different level of QoS from YouTube viewing, so this point is valid. "We must highlight the danger of restrictive net neutrality rules, in the context of 5G technologies, business applications and beyond," the telcos

wrote. “5G introduces the concept of Network Slicing to accommodate a wide variety of industry verticals’ business models on a common platform, at scale and with services guarantees.”

In fact, many lessons will be learned from how high-quality services are being launched in license-exempt spectrum, where Wi-Fi and LPWA networks are effectively supporting an early version of slicing, and are blurring the lines between open and closed, licensed-spectrum models. And there is a growing body of opinion that slicing and neutrality, far from being contradictory, actual enable one another. Pure network slicing, based on virtualization and SDN, can place the decision about how the slices are deployed and optimized in the hands of the customer, not the operator.

TelecomTV points to a presentation last year, by Diego Lopez of Telefonica’s R&D team, which showed a layered architecture that allows guaranteed QoS with truly dynamic resource allocation for slices. This would guarantee that every user application could request and receive the class of service it required – low latency for voice, high availability for cars, and so on – without the operator making any decisions about priorities.

That, of course, could raise yet more potential for disruption of the traditional business and revenue models, but MNOs cannot have it both ways – they can embrace new architectures which will enable them to generate new revenues, but they will have to accept that this will be a world where customers and OTT service providers will have the upper hand.

Not just operators, but the Digital Commissioner himself, will need to look to these new ways of delivering services, and ensure that neutrality is safeguarded while not itself becoming anachronistic by failing to support the huge range of services enabled by slicing and virtualization. The Manifesto will be one input to a public consultation which concluded on July 11 and to a series of high-level meetings this week focused on neutrality and regulatory framework reform.

In welcoming the Manifesto, Oettinger largely ignored the lobbying aspects and focused on the draft Action Plan, saying: "5G is needed to move one gear up, and envisage a European continent where everything that can be connected will be connected to offer new products and services and improve our quality of life and our competitiveness. I very much welcome the 5G Manifesto and discussions today with the high level industry group. These will help us focus on the key levers to ensure European digital leadership in 5G. I will come forward with a 5G Action Plan in the autumn.”

“AK Vorrat” argues that if the goal of the “Open Internet Regulation” is added, the argument by the “5G Manifesto” authors would not hold anymore:

“The 5G Manifesto argues for internet business models that are based on vertical integration and CAPs subsidizing the returns of ISPs. At the outset, we acknowledge that the Regulation is relatively flexible as regards the monetization of specialized services - as distinct and separate services from Internet Access

Services - along the value chain of end-users, service providers and industry verticals. However, to allow providers of Internet Access Service to monetize the entire value chain of the Internet would be inimical to the concept of net neutrality, which involves a clear separation between content and conduit to avoid harmful discrimination. It is crucial that providers of IAS are not permitted to impose charges on CAPs for privileged treatment of their traffic (e.g. for traffic prioritization, or zero-rating and other data pricing differentiation). The alternative would be turning the internet into a two-sided market, where ISPs can extract value from both consumers and online service providers - which is precisely what net neutrality and the telecom single market regulation according to Recital 1, 3 and 6 are intended to avoid through clear rules on non-discrimination. Such pricing practices from ISPs would throw up barriers to entry for new online services, thereby harming competition, innovation and diversity online. It would be in clear contradiction to the letter and spirit of the Regulation and Continued development of 'the engine for innovation'.

Furthermore, the Manifesto is baseless in its claim that vertical monetization of the internet value chain will 'ensure consumers are not alone in picking up the bill for the innovation that will help the business cases of the service providers.' Any additional charges imposed at earlier stages in the value chain by ISPs on content providers, service providers and hardware providers can still be reflected in increased costs for consumers. The Manifesto does not provide any evidence to the contrary, and its signers certainly make no promises about not raising end-user IAS rates.

In light of the above, BEREC should reject attempts by ISPs to turn internet access into a double-sided market where ISPs can charge CAPs for access to their subscribers. As the Regulation intended in Article 3(5), such vertically integrated monetization must only be permitted for specialized services because traffic management according to Article 3(3) subparagraph 2 cannot be based on commercial considerations. This means that any form of paid privileges, including prioritization of traffic and data pricing differentiation such as zero-rating, should be prohibited on IAS and furthermore that the provision of SpS should not be to the detriment of IAS bandwidth or quality, as outlined in our Policy Analysis. The regulation is clear in Recital 2 that it has to be applied according to the 'principle of technological neutrality'. Therefore, there is no legal ground to argue for an application of the regulation which is specific to 5G. On the investment argument we want to add that notwithstanding the differences in the network investment situation in the USA and EU, it is important to note that Verizon starts the 5G rollout one year earlier already in 2017."

The "Web Foundation" argues that the goals which the "5G Manifesto" authors claim to be pursuing are not their real goals. Their real goals, rather, stem from knowing that the guidelines being written by BEREC could secure net neutrality in Europe if regulators use them to close potential loopholes in the law. The "5G Manifesto" authors are therefore lobbying hard to get regulators to adopt weak guidelines that would benefit their businesses over the public interest:

“In October, the European Parliament voted on network neutrality rules for the European Union. Now regulators are writing guidelines to determine how the law will be applied in practice. These guidelines could secure net neutrality in Europe – if regulators use them to close potential loopholes in the law.

Telecom companies know this. And so they are lobbying hard to get regulators to adopt weak guidelines that would benefit their businesses over the public interest. They have connections to the highest levels of EU governments, a well-oiled lobbying machine, and lots of money to pay lawyers and experts to write extensive comments. Their latest move came last Wednesday, when the 17 largest telecom companies in Europe threatened *not* to invest in the next generation of 5G mobile networks unless regulators water down the guidelines.

The Internet has become the critical infrastructure of our time – for our daily life, for our economy, for our democracy. Strong guidelines will protect the future of competition, innovation, and creative expression in Europe, enhancing Europe’s ability to lead in the digital economy. They will ensure that every European, no matter the color of their skin or the size of their wallets, has an equal chance to innovate, compete, speak, organize, and connect online.”

6.2.2.1.2.2.3. Is the value premise rationally acceptable? Does it actually support the goal and the action?

6.2.2.1.2.2.3.1. The National and Supranational Arena

EC Oettinger says that the value premise is compatible with the stated means and goals, and goes further to claim that the values espoused in the “5G Manifesto for timely deployment of 5G in Europe” ought to be adopted by “Europe”:

“My strong belief is that we can together, public and private, make a difference and secure the confidence of our citizens and our consumers. The Digital Single Market is our strategy to unify our European markets and to offer greater opportunities for innovation, for digitizing our economy and society. And no doubt advanced networks based on 5G are critical for our competitiveness. This morning, here, we had a round table - the third one - and we organized the structured dialogue between our automotive sector, our EM’s [Engineering Mobility] and suppliers, and the telecom sector and our telecom regulators and our cybersecurity agencies. Why? For to speak about connected trucks, connected cars, autonomous driving, automated driving. It can be a reality in a few years. Cars, as a new Renault or an E-Class from Mercedes Benz, or a BMW 7 are more or less autonomous. And highways are there. From Lisbon to Vladivostok. But connectivity and courage is a must. That the technology can be used. Pan-European cross-border, in rural areas, all over Europe. And so, no doubt you, your companies, your products, and your services, in the past have been mainly relevant for mobile

communication. For to send human messages from A to B. And now it's about data flow. It's about transport of data. Between machines; between other devices; between smart buildings; between trucks and cars; between cars and cloud and back to other cars. So, the telecom sector; installations, infrastructure, and services: hardware and software, is in an important and increasing role. And I think, Europe shouldn't be a late comer. Europe should have the ambition, beyond some differences we have, to organize a world class digital infrastructure via fiber, via satellite, via 5G. That's our common ambition. We are seeing what is happening in the world - looking to South Korea - and I'm sure Hillary Clinton will have a clear priority campaigning next month saying the digital sector with online platforms, with hardware and software, with infrastructure, has to be an American advantage. An argument to invest in the United States. And so, we are in challenging times. What we need is a perfect public private partnership. What we need is a clear common vision. What should be developed, what should be regulated, what should be non- or deregulated, what should be moderated, what should be constructed, installed, in the next three four five years. That's it. And here we count on you, on your expertise, on your economic and technical and financial capacity, and we want to hear your expectations to us. Looking to our 700-megahertz band proposal, looking to our telecom review, looking to our 5G Action Plan, looking to spectrum policy and so on. And I'm sure, even eurosceptical people named Farage or whatever else, Johnson, they can't be against our todays work. Nobody can. And it's about EU 28 plus to integrate Switzerland, Norway, West Balkan states, Ukraine, Turkey, Russian Federation. Because it's a global challenge and we need a continental answer as you and we are doing. 5G is an opportunity for Europe to reclaim the lead, to use connectivity as a way to invent future markets and make good business for you. Today I want to hear from you, and I want to see are your ambitions comparable with ours. First of all, I would like to thank you, your teams, for the timely delivery of the 5G Manifesto. I could read it, it's clear, it's I think in a perfect structure, it's an ambitious offer from your side to us and our European citizens."

6.2.2.1.2.2.3.2. The (Trans-)National Civil Society Arena

"AK Vorrat" argues that the value premise is not compatible with the stated means and goals. It argues that the means and goals espoused in the "5G Manifesto" are due to a concern for raising profits by taxing participants in the Internet ecosystem:

"Perhaps closer to the industry's true motivation for supporting weaker net neutrality rules; it allows them to raise profits by taxing participants in the Internet ecosystem. It's no secret that big telecoms worldwide have suffered "Google envy" for some years now, in which they shun their designation as mere network providers (aka critical infrastructure) and want desperately to play in the often very lucrative digital content space."

The “Web Foundation” also argues that the value premise is not compatible with the stated means and goals. It argues that the “5G Manifesto” authors are acting prudentially, out of a concern for their own business strategies:

*“*Telecom companies know this. And so they are lobbying hard to get regulators to adopt weak guidelines that would benefit their businesses over the public interest.”

“Wireless Watch” also argues that the actual concern of the “5G Manifesto” authors is to mitigate net neutrality rules:

“So the European operators’ "5G Manifesto" was not a vision of a whole new way of building networks and delivering services. It was basically a negotiating ploy to mitigate net neutrality rules. The central argument was that strict neutrality rules, if applied to MNOs, would limit their ability or motivation to invest in 5G.”

6.2.2.1.2.3. Criticism of the Conclusion of the Argument

6.2.2.1.2.3.1. Will the goals be attained with no negative consequences?

6.2.2.1.2.3.1.1. The National and Supranational Arena

EC Oettinger claims that the consequences which the “5G Manifesto” envisions the suggested means will have will indeed be attained and argues further that no negative consequences will arise. This is said to be due to the envisioned actions being able to facilitate the project of European integration, thereby allowing it to gain the support of European citizens:

“Me coming from the Stuttgart region, I’m driving often from Brussels via Luxemburg via Metz to Strasbourg and afterwards to Stuttgart. I don’t need any Passport. I have one pocket with Euro. No D-Mark, no Franc, no Lira, nothing. But I know all borders, all national borders, coming from Waterloo, coming from the Vienna Congress, coming from Potsdam and Yalta, coming from Versailles: it’s impossible. I get a list of phone calls; - ten, for four hours, - I have twenty phone calls but just with five people. Because, sorry, so often, there was a break. And at any European border, there is a break. For me that is no more acceptable. And connected trucks, cars, can’t function in these fragmented mobile silos. I think there is a value added, and we have best arguments to convince our European citizens that Europe can bring a value added. In the digital sector with your installations, with our technology, and with your Pan-European services.”

6.2.2.1.2.3.1.2. The (Trans-)National Civil Society Arena

The “Web Foundation” rejects the conclusion of the argument, on the grounds that negative consequences on the goals of other agents, namely “every European, no matter the color of their skin or the size of their wallets”, will arise:

*“*There are four areas that regulators need to get right to secure meaningful net neutrality in Europe.

BAN FAST LANES: Regulators need to close a loophole that could allow carriers to offer special “fast lanes” to normal websites and applications for a fee.

The telecom companies that connect us to the Internet want the power to charge websites extra fees to reach people faster. In a world where some websites can pay telcos to be in the “fast lane,” anyone who can’t afford the extra fees – start-ups, small businesses, bloggers, artists, activists, and everyday Europeans – will be left behind in the slow lane. Innovation and economic growth will suffer, and Europeans will be left with an Internet that is less vibrant, less diverse, and less useful.

Europe’s net neutrality law stops telecom carriers from creating fast lanes online. But it contains an exception for “specialized services” that cannot work on the regular Internet. Carriers want to squeeze as much of a pay-to-play business model as they can into this exception, turning it into a giant loophole. Their stated goal: A world in which any application can buy a fast lane – not just those that could not function without it.

Regulators need to close this loophole by clarifying that the “specialized services” exception cannot be used to create fast lanes for normal Internet content. And they should regularly review what qualifies as a specialized service – remember that in the not-too-distant past, everyday services like web-based email or online video would have been seen as a specialized service!

BAN ZERO-RATING: Regulators need to ban harmful forms of zero-rating.

Carriers want to be able to exempt certain favored applications from users’ monthly data caps, a practice called “zero-rating”.

Like fast lanes, zero-rating lets carriers pick winners and losers by making certain apps more attractive than others. And like fast lanes, zero-rating hurts users, innovation, competition, and creative expression. In advanced economies like those in the European Union, there is no argument for zero-rating as a potential onramp to the Internet for first-time users.

The draft guidelines acknowledge that zero-rating can be harmful, but they leave it to national regulators to evaluate zero-rating plans on a case-by-case basis. Letting national regulators address zero-rating case-by-case disadvantages Internet users, start-ups, and small businesses that do not have the time or resources to defend themselves against discriminatory zero-rating before 28 different regulators.

The guidelines need a comprehensive, Europe-wide ban on harmful forms of zero-rating.

BAN DISCRIMINATION: Regulators need to prevent carriers from discriminating among classes of traffic to manage their networks.

Carriers would like to define classes of traffic to be sped up or slowed down, even in the absence of congestion. They say this will let them offer better quality Internet access. But class-based traffic management lets carriers discriminate against services at will. It allows carriers to distort competition, stifle innovation, and hurt users and providers who encrypt by putting all encrypted traffic in the slow lane.

The draft guidelines make clear that class-based traffic management can only be used as a last resort during exceptional or temporary congestion if less discriminatory methods cannot solve the problem. This is good, and ensures that the Internet remains a level playing field even during times of severe congestion.

But the guidelines are less clear for traffic management in the absence of congestion. This ambiguity could be misused as a loophole to allow carriers to discriminate in the name of addressing problems admittedly less severe than congestion, where discrimination can only be used as a last resort.

The draft guidelines should clarify that class-based traffic management can be used only if less discriminatory, application-agnostic methods cannot solve the problem, regardless of whether there is congestion or not.

PROTECT INTERNET ACCESS: Regulators need to prohibit new "specialized" services from taking over bandwidth that people bought to access the Internet.

Carriers want to offer new kinds of "specialized" services that need special handling not available on the Internet. People would buy these services separately, in addition to their normal Internet access. Carriers find these services attractive because they can charge the providers of these services extra fees for special treatment.

The draft guidelines allow these specialized services to take away bandwidth from people's Internet connection. In essence, telecom companies would take bandwidth that a customer bought to connect to the Internet and use it for a specialized service that the same person (and, potentially, the providers of these services) is paying for separately. That means people signing up for a specialized service would pay twice for the same bandwidth and would have less bandwidth available for the websites and Internet apps of their choice. This harms people signing up for a specialized service, and makes it harder for Internet applications, content, and services to reach consumers.

The current version of the guidelines directly contradicts the law, which requires that specialized services be offered in addition to access to the Internet and must not reduce the quality of normal Internet access. Regulators need to correct the guidelines."

"Article 19" also rejects the conclusion of the argument, on the grounds that negative consequences on the goals of other agents will arise which ought to be considered:

"5G also poses major risks to human rights. The principle of net neutrality may prove to be genuinely threatened by 5G, as the diversity of needs to be met by 5G networks may create the space for an argument in favor of developing 'fast lanes' for certain types of content and special treatment of some data packets, or even 'bandwidth throttling'. This violation of net neutrality poses more of a danger than just fast streams and special treatment. It might result in the fragmentation of the Internet itself: risking the loss of the benefits of the network in terms of freedom of expression and freedom to receive information."

"Wireless Watch" also does not accept the conclusion of the argument. It argues that the consequences of the actions envisaged by the authors of the "5G Manifesto" will undermine the attainability of their own purported, as well as hidden, goals. This is because the arguers are not acknowledging the reality of next generation infrastructure development. There will, in other words, be unintended consequences for the "5G Manifesto" authors – more deliberation would have been necessary:

"EU Operators' 5G Manifesto misses the point. Never before have events coincided so neatly to demonstrate the gap between mobile operators' thinking about 5G, and how future networks will really be deployed for disruptive effect. While Europe's leading MNOs were presenting a backwards-looking "5G Manifesto" to the European Commission, veiling pleas for net neutrality special treatment with promises of 5G build-out, Facebook was announcing an open-source approach to the mobile network, OpenCellular – part of a wider trend which could rip apart the network cost base and the operators' and 3GPP vendors' cozy world.

Various developments last week highlighted how MNOs are stuck in their traditional thought processes, to potentially fatal effect. This is clear in many critical areas – investment/return on investment (ROI) models; pricing of new services; architecture; and their actual role in the value chain. […]

The Manifesto echoes similar demands by operators in the past, as well as their trade bodies GSMA and ETNO, to reform the regulatory framework. The general theme is that the EU should keep its regulatory attention mainly on encouraging competition in retail services, while the rules surrounding sites and infrastructure should be relaxed in order to ease and accelerate network deployments, and support co-investment and network sharing agreements among MNOs.

This last is almost inevitable if there is to be a next wave of infrastructure building, before most operators have seen the return on their initial LTE rollouts. But in lobbying for the kind of sharing which will reduce upfront costs, operators are dangerously close to being turkeys voting for Christmas. Network sharing on a large scale is a natural first step to a wholesale-only, utility model, a massive bitpipe roll out which most MNOs are still resisting.

And in looking for new cost structures for 5G networks, sharing will not be radical enough – in reality, operators will be forced to adopt the commoditized, open-source approach espoused by Facebook's TIP (Telecoms Infrastructure Project), and by Google and Amazon. That will ease their ROI burdens but will push them into a supply chain which they no longer control.

While the first three caveats are not unreasonable, even though they betray worryingly old-fashioned thinking, the fourth really highlights how the MNOs have been left behind by modern thinking. They are not yet thinking like open internet players, even though internet access and services, and the IoT, are now their primary revenue drivers.

So, they are making connections between infrastructure investment and direct monetization, which have long ago been broken in the non-mobile internet world."

6.2.2.2. Characterization of Hegemony Projects

The responses of these different agents can be grouped into two hegemony projects.

6.2.2.2.1. Core Hegemony Project

EC Oettinger and the Manifesto authors can be grouped into one hegemony project. This is because the strategies of these two agents display significant overlapping similarities: as could be seen in the argument evaluation, EC Oettinger does not refute any of the premises by the Manifesto authors, rather he expands on their premises.

6.2.2.2.1.1. Situation Analysis

This hegemony project says that the situation is one where 5G can be a key enabler for realizing the opportunities provided for the ICT and Vertical Sectors by the fast-paced digitalization of 'vertical industries' and the public sector, but a strong 5G dialogue must be

further developed between vertical industries and the telecom sector, starting from the basis of an in-depth mutual understanding.

In this process, the EU has a specific role to play in the ecosystem-forming initiatives by industry players. There are specific requirements in order for a 5G action plan to unfold in a Digital Single Market, and investments need to be put at the center of the 5G policy framework.

More generally, the situation is one where data flow between machines, between other devices, between smart buildings, between trucks and cars, between cars and cloud and back to other cars, is central. The telecom sector, installations, infrastructure and services: hardware and software, is therefore in an important and increasing role.

This is a situation which is “about our future competitiveness”. This is because there is global competition – e.g., from the United States and South Korea – to draw investments in their economies based on the argument that they are able to provide a world-class infrastructure.

In such a situation, a lack of connectivity and courage, of ambition, would lead to Europe being a late comer and miss out on organizing a world class digital infrastructure via fiber, via satellite, via 5G.

6.2.2.2.1.2. Overall Strategic Aims

In order for the 5G innovation ‘window’ to be capitalized on, the development of the 5G ecosystem needs to be driven, the 5G target launch date needs to be met and the various applications and technologies that are envisaged in a ‘system of systems’ need to be supported, the deployment priorities and roadmaps across EU Member States need to be aligned, the required investments need to be taking place, and 5G needs to be exploitable. Therefore, effective interactions and collaboration with industry verticals, the formation of ecosystems as a result of large-scale demonstrators and an investment-centric policy framework need to be fostered.

These aims will ensure European digital leadership in 5G and beyond. This is because a strong 5G dialogue - starting from the basis of an in-depth mutual understanding - will be further developed between vertical industries and the telecom sector; greater awareness and momentum for 5G will be achieved; a 5G action plan will unfold in a Digital Single Market; investments will be at the center of the 5G Policy Framework; and the 5G objective of creating new business opportunities to satisfy future end-user needs will be brought about.

In addition, the aim is to convince European politicians and citizens that “Europe and 5G is the future”, to increase collaboration between the telecom sector and other advanced vertical sectors, and to benchmark European 5G deployment against other regions of the world.

A perfect public private partnership is understood to be an adequate European response to the ‘global challenge‘ of developing next generation infrastructure. Because Europe should not be a late comer, it ought to have the ambition, beyond its differences, to organize a world class digital infrastructure via fiber, via satellite, via 5G. 5G is seen as an opportunity for Europe to reclaim the lead, to use connectivity as a way to invent future markets and make good business for European telecommunications companies.

A clear common vision about what needs to be developed, what needs to be regulated, what needs to be non- or deregulated, what needs to be moderated, what needs to be constructed, installed, in the next three four five years will provide a continental answer to this global challenge. Work on this common vision transcends European politics because “it is a global challenge, and we need a continental answer” – therefore even Eurosceptics cannot be against it.

6.2.2.2.1.3. Conflict-Related Strategy

This hegemony project claims that in order for the 5G innovation ‘window’ to be capitalized on, the EC and Member States must implement ambitious cross-sector policy enhancements. It is therefore necessary for the European Commission to drive the

development of the 5G ecosystem by allocating funds to trials and large-scale demonstrators and to a 5G Venture Fund (in addition to funding research and innovation projects of the 5GPPP), which are characterized by lean administrative procedures, simple and effective governance, while focusing any infrastructure funding on physical infrastructure, such as ducts or a digital spine. It is also necessary for an authority to license sufficient spectrum in time and at reasonable prices, in order for the target launch date to be met and the various applications and technologies that are envisaged in a 'system of systems' to be supported. The 5G Action Plan needs to reassure vertical industries that 5G deployment, as a progressive evolution from the existing 4G technologies, will be synchronized across Europe to achieve homogenous availability both in terms of location and time, in order for roadmaps and deployment priorities across EU Member States to be aligned. Finally, it is necessary for an authority to create the right regulatory environment, in particular in the context of the forthcoming review of the European Electronic Communications Framework, in order for the required investments to take place.

In order for 5G to be exploitable, it is necessary to highlight the danger of restrictive Net Neutrality rules in the context of 5G technologies, business applications and beyond, state that it is paramount to ensure 5G monetization to drive investments, state that operators should also be free to mix and manage different technology generations, and state that the success of 5G will depend on EU-wide scale support, with Member States acting coherently (whether in regard to licensing, providing appropriate state support, or directing early public sector participation).

This hegemony project says that imposing stricter obligations on Electronic Communications providers than on other providers of digital services, instead of promoting equality of opportunity to innovate, will amount to a failure to act because converging digital services need converged regulation that is light-touch, future-proof and that facilitates a European single market for services. Regulation, therefore, should define principles to protect consumer rights and competition, focusing on outcomes (e.g., service characteristics) rather than on means (e.g., how operators evolve and manage their networks). It refers to the telecom industry, which is warning that the current Net Neutrality guidelines, as put forward by BEREC, create significant uncertainties around 5G return on investment, claiming that

investments are therefore likely to be delayed unless regulators take a positive step on innovation and stick to it. The EU and Member States must therefore reconcile the need for Open Internet with pragmatic rules that foster innovation. It refers to telco and industry verticals concurring that the implementation of Net Neutrality laws should allow for both the innovative specialized services required by industrial applications and the Internet Access quality expected by all consumers.

Because these are extraordinary circumstances, telecommunication companies should not be lectured about what they should be doing. Rather, a candid and honest conversation should be had about what the European Commission and "industry" can do together in order for 5G technology deployment to deliver positive results for their businesses as well as for European citizens and consumers.

6.2.2.2.1.4. Social Basis

The central actors of this hegemony project are:

Transnational European telecommunications companies and device vendors, the European Commission

6.2.2.2.1.5. Assessment

This core hegemony project abounds in organizational resources. As transnational companies, its actors have direct access to the European Commission and to Member States' governments. Via the European Roundtable of Industrialists (ERT), these transnational companies have been recognized in European policymaking as important, agenda setting voices. As national incumbents, telecommunication companies tended to be treated by Member States' governments as "National Champions". This hegemony project also has access to bureaucracies, in that there is a path-dependent legacy of linear, coordinated telecommunications innovation. It also has access to contact networks. As transnational companies, it also has access to capital.

This core hegemony project abounds in systemic resources, as its actors are leading telecommunications companies and device vendors, who have the power to decide whether to withhold investments which have systemic consequences. They are thereby able to face conflicts because they possess the ability to plausibly threaten to withhold a system-relevant effort. This can be seen in the text with “the investments are taking place.”

As can be seen via the response of EC Oettinger to the “5G Manifesto for timely deployment of 5G in Europe”, this hegemony project abounds in discursive, ideological and symbolic resources in the sense that it has the capacity to articulate its situation analysis, aims and strategy in a way that is acceptable to key actors [or: it is capable of providing political actors with reasons for action]: the definition of the European Union according to embedded neoliberalism is one where the Union is integrated via the economy. Representing the strategy of this hegemony project as being about “our future competitiveness”, and carried out by “public and private”, would appear acceptable in this framework to key actors. Representing the strategy of this hegemony project as being about the surmounting of national borders – as exemplified by EC Oettinger in his response to the 5G Manifesto – would seem acceptable to key actors such as Member State governments as well, since this is the legitimating principle of the European Union.

The institutional, strategic-structural selectivities privilege this hegemony project. This is because – as stated above – embedded neoliberalism understands the core of the EU as constituted via markets. This is favorable to a strategy which wants to frame telecommunications innovation as unpolitical, and as managed by experts. The supply-side path-dependency of the EU also privileges this strategy, in that the role of government is defined as assisting companies and enabling markets. The role of government is limited. The “regulatory gap” of the European Union is also favorable to this strategy, since it privileges an indirect form of governance in “orchestration”, which sequesters “the industry” and the European Commission off from public scrutiny – and affords them a space with considerable leeway in how the relationship between public and private is enacted. These aspects of how the institutional, structural selectivities favor the strategy of this hegemony project provide for a powerful position of this hegemony project in the relationship of forces.

6.2.2.2.2. Oppositional Hegemony Project

AK Vorrat, Article 19, The Web Foundation and Wireless Watch can be grouped into an "oppositional hegemony project": this is because the strategies of these agents show significant overlap in their criticism of the telecommunications companies, and, by extension, of the European Commission, as could be seen in the argument evaluation: these authors consistently criticize the circumstantial premises, goal premises, value premises, means, and intended consequences of the 5G Manifesto authors.

6.2.2.2.2.1. Situation Analysis

This hegemony project understands the situation as one which is being defined by telecommunications companies. In this vein, it criticizes the representations made by these companies in the course of their argumentation.

It criticizes these representations in relation to technical affordances, arguing, for example, that characterizing network slicing as an enhancement "brought by 5G" is inaccurate since network slicing can also be achieved in other networks such as current specialized networks and Software Defined Networks, and that 5G is in no way dependent on technologies like 'network slicing'.

It criticizes these representations in relation to BEREC's draft guidelines, arguing that these guidelines are not inimical to the deployment of 5G.

It also criticizes these representations in relation to human rights, arguing that human rights questions are being unreasonably excluded from planning on 5G.

Finally, it criticizes these representations as not being adequate to the reality of next generation mobile services, as well as to the relationship between telecommunication companies and the vertical industries.

6.2.2.2.2.2. Overall Strategic Aims

This hegemony project has a variety of strategic aims:

An aim is to create a coordinated and inclusive action plan on standards, spectrum, and infrastructure development in the deployment of 5G technologies.

An aim is to point out that the telecommunication companies fundamentally misunderstand the relationship between strong net neutrality rules and incentives to invest in network infrastructure.

An aim is to point out that the means envisioned by the telecommunications companies are not necessary in relation to the reality of the market situation, and their pursuit would actually be dangerous.

This hegemony project says that the goals stated by the telecommunications companies are not their real goals – their real goals are to mitigate net neutrality rules in order to protect their traditional strategies.

This hegemony project says that the goals of the “Open Internet Regulation” are valid and ought not to be diluted by telecoms companies.

This hegemony project says that the goals which the telecoms say they are pursuing are not their real goals. Their real goals, rather, stem from knowing that the guidelines being written by BEREC could secure net neutrality in Europe if regulators use them to close potential loopholes in the law. Telecoms are therefore lobbying hard to get regulators to adopt weak guidelines that would benefit their businesses over the public interest.

This hegemony project argues that the telecoms real concern is to raise profits by taxing participants in the Internet ecosystem.

This hegemony project argues that the telecoms are acting prudentially, out of a concern for their own business strategies.

This hegemony project argues that the actual concern of the telecoms is to mitigate net neutrality rules.

6.2.2.2.2.3. Conflict-Related Strategy

This hegemony project has a variety of conflict-related strategies:

It appeals to the public to contact BEREC, which needs to get four areas of the "Open Internet Regulation" Guidelines right in order to secure meaningful net neutrality in Europe. This is because it rejects the conclusion of the telecom's arguments, on the grounds that negative consequences will arise on the goals of other agents, namely "every European, no matter the color of their skin or the size of their wallets."

This hegemony project writes to BEREC, criticizing the "5G Manifesto" as not being relevant to network neutrality guidelines (AK Vorrat).

This hegemony project appeals to the special rapporteur to look at human rights being respected in processes surrounding the development of 5G – also because negative consequences on the goals of other agents will arise which ought to be considered.

This hegemony project analyzes the strategies of the telecommunications companies and says that the consequences of the actions which these companies envisage will undermine the attainability of their own purported, as well as hidden, goals. This is because the telecoms are not acknowledging the reality of next generation infrastructure development.

This hegemony project is divided/heterogenous – meaning that the strategies show inconsistencies: while all the strategies share criticism of the telecommunication companies and advocate the "dumb network", they do so for different reasons and with different implications for their pursuit of "network neutrality".

6.2.2.2.2.4. Social Basis

The social basis of this hegemony project is the transnational activist class and the "transnational software developer class". This is where its strongest social basis is. It has a weak social basis in the wider part of national polities.

6.2.2.2.2.5. Assessment

This hegemony project has very few organizational resources: It has limited access to bureaucracies, contact networks, money, or the capacity to threaten or use force. [However, it has organizational resources via the internet which allow it to reach a wide, transnational audience. It can thereby mobilize public demonstrations and mobilize public participation in public consultations (as seen with BEREC)].

This hegemony project has little systemic resources – its actors cannot plausibly threaten to withhold a system-relevant activity or effort or disrupt system-relevant processes. It is thereby not really able to face conflicts.

This hegemony project has discursive, ideological, and symbolic resources in that it can refer to the weakly institutionalized notion of "participation" which is part of the vision of information society policy, as well as the promise with which information technology was marketed in the 1990s and 2000s.[267] This resource allows it to articulate its situation analysis, aims and strategy in a way that is acceptable to broader parts of society, (as can be seen in the interest which the public took in "network neutrality"). It can confront the European Union with an immanent critique, in that the promise of "participation" by the information technologies can be used in combination with the tension the European Union is in by being, on the one hand, a supranational institution which governs "for and with the people", while on the other hand, intentionally having structures which are unaccountable to national publics.[268]

[267] Schäfer, 2011
[268] Schmitt, 2006

This hegemony project is not privileged by the institutional or strategic-structural selectivities of the European Union. This is because "embedded neoliberalism" privileges an economic core of the European Union. The Digital Single Market strategy privileged the digitalization of European industry. In addition, a quirk about "network neutrality" is that – because it concerns the "last-mile" internet – it can be technically regulated on Member State level (whereas a lot of other internet policy issues necessitate transnational treatment).[269] Therefore, "network neutrality" could be treated on the Member State level as part of the "principle of social protection". In other words, the institutional or strategic-structural selectivities of the European Union did not privilege this hegemony project.

More concretely, as can be seen by the responses of the different arguers of this hegemony project, they are not able to actually take part in the discussion on the roll-out of 5G where it is taking place – between the EC and the 5GPPP. They are left to offer critiques in special-interest publications (Wireless Watch), appeal to the public and BEREC (Web Foundation, AK Vorrat), or to the UN Special Rapporteur for Human Rights (Article 19).

7. Results

The context analysis showed that the question of whether European telecommunications networks ought to be regulated as if they were a public infrastructure was the central issue in the policy conflict I investigated.

This issue became central because European telecommunications companies became capable of opening IP data packets in the 2000s.

The historical situation which had led to this issue was made up of structural and contingent factors.

The structural factors were that although "network neutrality" had been part of European telecommunications regulation, it had been intended as part of the European project of building a single market for telecommunications, and as enabling economic growth by

[269] DeNardis, 2014, 131-134

building an “information society” – and in this line, it had been seen as a narrow measure to set up the relation between different industrial sectors in this new growth model.

The contingent factors were that the confrontative response of the copyright industries to losing control of distribution due to the EU’s information society policies led to them to want to alter the “openness” of telecommunications networks. This response led to a politicization of telecommunications policy in Europe, against a background of the previous politicization of information society policies in the United States and at the United Nations. This politicization, as well as the confrontative response by the copyright industries, threatened the strategies of European telecommunications companies who saw themselves at a disadvantage when building their mobile platforms due to the different regulation of information society (“content”) and telecommunication services (“carrier”).

In this way, the conflict between two sectors: the copyright industries and the telecommunication companies, created a space in which telecommunications policy could be politicized – the question could legitimately be posed whether the “openness” of telecommunications networks ought not be grounded in citizens’ fundamental rights. The interests of European citizens appeared on the scene of European telecommunications policy, which conflicted with the interest the European telecommunications industry had in abandoning the “mere conduit” principle due to it taking up “platformization” strategies.

The “network neutrality” issue was problematized regarding structural deficiencies in the institutional environment for innovation and efficiency in Europe, and problematized from two opposing perspectives:

One perspective argued that innovation could be secured by seeing the internet as a “free” market, and that the future efficiency of the internet could be secured by allowing for paid prioritization.

The other perspective argued that innovation could be secured by safeguarding the open-ended engineering of the internet, and that efficiency could be secured by not allowing paid prioritization, which would lead to a degrading of the public internet.

Telecommunication companies strongly argued for the former perspective, Activists and outside groups which had no ties to for-profit companies in the sector strongly argued for the latter. CAPs (Both Media Companies and Platform Companies) were divided on the issue and seemed to be taking advantage of the network neutrality debate to further their own interests.

European telecommunications policy in this political process was constituted by two different political projects: one project which pursued next generation access networks and the digitization of European industry, and another project which pursued the codification of a network neutrality principle.

After an initial politicization of telecommunications policy in Europe – and therefore a variation in construals, the policy which was selected by the European Commission continued the previous approach to telecommunications policy. This happened due to the broader historical context of the financial crisis, and its imagined economic recovery – as well as the central position that telecommunications companies would play in investing in new networks. Public private partnerships were selected as governance technologies to facilitate research and development on 5G networks, with telecommunications regulation intended to defragment European markets.

This policy path confounded expectations of the proponents of safeguarding the open internet, leading to a repoliticization of telecommunications policy in 2014. Expectations had been built due to certain Member States introducing their own network neutrality laws, as well as the vocal advocacy of the European Parliament on this issue. This repoliticization led to a split in the European Council between Member States with large telecommunications incumbents, and Member States who had introduced national network neutrality laws.

Ultimately, the European Commission chose to separate telecommunications policy issues, leading to both an “Open Internet and Roaming Regulation”, and to a “Digital Single Market” Strategy, with a “5G Action Plan”. Because of the way in which the “Open Internet and Roaming Regulation” was designed, it was effectively a Directive – which neither required Member States to alter their network neutrality laws, nor strictly speaking introduce new

ones. It can therefore be seen as a concession to secure hegemony, and effectively depoliticized European telecommunications policy.

In asking why the first political project was retained I looked at two hegemony projects involved in the process of formulating the 5G Action Plan.

The first hegemony project in this process was made up of transnational European telecommunications companies and vertical industries, together with the European Commission.

It analyzed the situation as one which was about the future global competitiveness of Europe, a competitiveness which could be brought about if 5G were used to enable the opportunities provided by the fast-paced digitalization of "vertical industries" and the public sector. It was therefore seen as essential that a strong 5G dialogue between vertical industries and the telecom sector be brought about.

Its overall strategic aims were to capitalize on the 5G innovation "window" by driving the development of 5G ecosystems, meeting the 5G target launch date and supporting the various applications and technologies envisaged in a "system of systems", aligning the deployment priorities and roadmaps across EU Member States, allowing the required investments to be taking place, and making 5G exploitable. Therefore, convincing European politicians and citizens that "Europe and 5G is the future" was seen as central, as was increasing collaboration between the telecom sector and other advanced vertical sectors and benchmarking European 5G deployment against other regions of the world. A perfect public private partnership was understood to be an adequate European response to the "global challenge" of developing next generation infrastructure – therefore, a clear common vision developed within this partnership about different issues related to the deployment of 5G was seen as providing a continental answer to this global challenge. Work on this common vision was seen as transcending European politics because a continental answer was needed – a response to the Eurosceptic argument that telecommunications policy ought not be addressed at the scale of the EU.

In relation to the policy conflict about a network neutrality regulation, this hegemony project argued that imposing stricter obligations on Electronic Communications providers than on other providers of digital services would amount to a failure to act because converging digital services needed light-touch, future-proof converged regulation that would facilitate a European single market for services. The EU and Member States were said to be responsible for reconciling the need for Open Internet with pragmatic rules that would foster innovation. The implementation of network neutrality laws ought to therefore allow for both the innovative specialized services required by industrial applications and the Internet Access quality expected by all consumers. Because these were extraordinary circumstances, the telecommunication companies ought not be lectured about what they should be doing – instead the EC and industry ought to have a candid and honest conversation about what they could do together in order for 5G technology deployment to deliver positive results for telecommunications and vertical industry businesses as well as for European citizens and consumers.

In assessing this hegemony project, we can find the following characteristics:

It abounds in organizational resources, since these transnational companies have direct access to the EC and to Member States' governments, as well as having a strong voice in European policymaking via the European Roundtable of Industrialists. These organizational resources are also due to a path-dependent legacy of linear, coordinated telecommunications innovation. As transnational companies, these agents also have access to capital.

It also abounds in systemic resources since these transnational companies can face conflicts because they possess the ability to plausibly threaten to withhold a system-relevant effort by withholding investments in next generation networks.

It also abounds in discursive, ideological, and symbolic resources in the sense that it has the capacity to articulate its situation analysis, aims and strategy in a way that is acceptable to key actors. This is because "embedded neoliberalism" privileges arguments based on "our

future competitiveness", carried out by "public and private", and as being about the surmounting of national borders.

This hegemony project is privileged by the institutional, strategic-structural selectivities of "embedded neoliberalism" because it understands the core of the EU as constituted via markets. This is favorable to strategies which want to frame telecommunications innovation as unpolitical, and as managed by experts. The supply-side path-dependency also privileges this strategy, in that the role of government is defined as assisting companies and enabling markets. The "regulatory gap" of the EU is also favorable because it privileges an indirect form of governance in "orchestration" and affords them a space with considerable leeway in how the relationship between public and private is enacted.

This hegemony project was therefore provided a powerful position in the relationship of forces.

The second hegemony project had its social basis in the transnational activist class and the transnational software developer class. It analyzed the situation as one which was being defined by telecommunication companies. It criticized the representations made by these companies in relation to different issues such as the actual technical affordances of 5G, the actual guidelines by BEREC, human rights, and to the reality of next generation mobile services as well as to the relationship between telecommunication companies and vertical industries.

It had a variety of strategic aims, ranging from creating a coordinated and inclusive action plan, to pointing out that telecommunications companies fundamentally misunderstood the relationship between strong network neutrality rules and incentives to invest in network infrastructure, to pointing out that the means envisioned by the telecommunications companies were not necessary in relation to the market situation and would actually be dangerous, to pointing out that the stated goals by the telecommunications companies were not their real goals – their real goals being the protection of their traditional strategies, to saying that the goals of the "open internet regulation" were valid and ought not be diluted.

It also had a variety of conflict-related strategies, ranging from appealing to BEREC to write strict guidelines, to contributing critiques of the telecommunication companies' arguments to public consultations by BEREC, to appealing to the special rapporteur on human rights, to analyzing the unintended consequences which the strategies of the telecommunication companies would have on their own purported as well as hidden goals. Fundamentally, however, this hegemony project was heterogenous, and the strategies showed inconsistencies: while they all shared criticism of the telecommunications companies and advocated the dumb network, they did so for different reasons and with different implications for their pursuit of "network neutrality". It appears that not one fraction was able to integrate the other fractions, which casts doubt as to the coherence of this hegemony project.

In assessing this hegemony project, we can find the following characteristics:

It had very few organizational resources: limited access to bureaucracies, contact networks, money, or the capacity to threaten or use force. The organizational resources which it had were the tools offered by computers, software, and the internet, which allowed it to orchestrate international public awareness, pressure campaigns and demonstrations at different scales.

This hegemony project had few systemic resources – its actors could not plausibly threaten to withhold a system-relevant activity or effort or disrupt system-relevant processes, thereby not being able to face conflicts. It could attempt to compensate this by threatening to withhold public consent to European policymaking.

It had discursive, ideological, and symbolic resources in that it could refer to the weakly institutionalized notion of "participation" which was part of the vision of information society policy. This allowed it to articulate its situation analysis, aims and strategy in a way that was acceptable to broader parts of society, and allowed it to confront the EU with an immanent critique due to the EU being in tension between being a supranational set of institutions which govern "for and with the people", while on the other hand intentionally having structures unaccountable to national publics.

However, this hegemony project was not privileged by the institutional or strategic-structural selectivities of the EU, because "embedded neoliberalism" privileges an economic core of the EU. The DSM strategy privileged the digitalization of European industry. And, furthermore, when viewed strictly as a technical issue, network neutrality could be regulated on Member State level – and was thereby capable of being treated as part of the "principle of social protection". This hegemony project was not able to actually take part in the discussion on the roll-out of 5G where it was taking place – between the EC and the 5GPPP. It was left to offer critiques in public consultations by BEREC, appeal to the public, to the special rapporteur for human rights, and in special interest publications.

Overall, therefore, this hegemony project was provided a weak position in the relationship of forces.

8. Answering of Research Questions

The research question guiding this investigation was: "What are the reasons for why *this* policy was selected and retained, although it is counterproductive towards the stated goals of the European Union in this area?"

This policy is part of the core political project of next generation high-capacity networks.

It was a political project that was part of the EU's recovery from the financial crisis.

It's approach to the implementation of 5G networks – which is counterproductive towards the stated goals of the European Union in this domain – was formulated by the European telecommunication companies.

It was *reinforced* by the *shift* in the political project to make public private partnerships coordination instruments to digitize European industry.

The European telecommunication companies were part of a broader hegemony project which favored an economic core to the European Union – for market-based solutions to social problems.

They could thereby articulate their concerns in a way which significantly overlapped with other parties who had an interest in a European Union integrated by an economic core.

5G is therefore being rolled out in Europe as an evolution on previous networks, without the necessary political actions to facilitate the creation of Virtual Mobile Network Operators, and enabled by an imaginary which views it as part of a geostrategic competition, because the telecommunication companies were capable of limiting broader considerations on 5G due to the governance technologies used after the financial crisis and the privileging of an economic core by embedded neoliberalism. Because this limited intertextuality, the political project of next generation access networks could be recontextualized in an economic competitiveness discourse. The broader issue of the social benefits of open networks was thereby depoliticized.

9. Discussion

By looking at the failure of European policymaking to adequately account for the potentials for a federated European platform tree which lay in its own designs for the fifth generation of mobile networks, we can get a better understanding for how the structures of the EU worked to its own disadvantage.

In this policy domain, the heritage of “embedded neoliberalism” – timely as it may have been in the 1990s – worked to the disadvantage of the European Union when attempting to address the process of platformization. This is because it privileged transnational actors – in this domain, transnational telecommunication companies – whose strategies were rooted in their experience of close coordinative innovation cycles with governments. As the policy analysis has shown, these transnational companies were afforded a space by the “bias of the system” in which they *don’t have to learn from their mistakes.*

However, as “Wireless Watch” noted – and whose consideration were suppressed by the venue of the PPP – this works to the disadvantage of the European telecommunication companies because in not needing to reflect their assumptions, they will be outmaneuvered by the intermediary platforms whose cross-sectorization dynamics will digitize the “vertical industries”.

Whether or not a codified “network neutrality” principle is intelligent or not – sensible or not – is an open question, one which is a historical one because of the way the political process developed. What the policy analysis has shown, however, is that a) a debate about a holistic development of European information society policymaking towards the future, starting from the idea of network neutrality from the 1990s/2000s was shut down in the past ten years, and b) that a central component of this process was that *power* did not need to be acknowledged due to the use of public private partnerships after the financial crisis.

These results provide an explanation for the findings by Mansell that the imaginary enabling the network of practices implementing EU’s 5G policy that understands 5G as a geopolitical territorialization project in that the European telecommunications companies could mobilise the „bias of the system“.

These results supplement the project of a European platformization tree, by contributing to an explanation for why there has as yet been no systemic addressing of platformization: in the domain of telecommunications policy, telecommunications companies have advocated a „hands off“ approach.

In recalling the suggestion of the field of platformization studies for Europe, that it might try a novel strategy where it targets platformization dynamics as a meaningful starting point for regulatory counter power, the results of this study suggest that policymakers may as yet take the necessity to make political decisions on shifting the telecommunications framework seriously. This would be possible given the articulateness gained by this paper, which provides the argument for action that without government intervention and steering - leaving the telecommunications companies to their own devices, so to speak - the European platform tree will continue to be a Californian sequoia. In other words, the articulation of principles is necessary in this policy domain.

In her book "Imagining the Internet" (2012), Mansell argues that the network neutrality debate suffers from a vicious cycle because power is unacknowledged. My results confirm this assessment by showing why power is unacknowledged: this was a) because of the selectivities of discourse, which were based on untested assumptions about social progress and the internet or about untested assumptions about the social benefits which would inevitably come with the internet, therefore not needing extra scrutiny, but also b) because of the orchestrated character of the European Union which allows for policy to be developed and shaped by governance technologies which are invisible to those who are not part of them and are made up of value coordination by those who are a part of them - thereby making the development of policy possible without the consideration of power.

Moving forward, an implication of the articulatedness we have gained by these results is that we can take the affordances and constraints of governance technologies such as public private partnerships more seriously in their role in steering telecommunications policy and the imaginaries they make possible – an implication of this would be scrutinizing the EU's contemporary industrial policy based on state aid frameworks in the context of platformization policy, a scrutinization which is beginning to happen in 2023 in searching for a European policy response to the United States' decision to provide government subsidies to industries aimed at facilitating the "Green Transition".

In lieu of what further scholarship could also offer, let me recall an experience that confounded me throughout my research on the alternative hegemony project across the European Union: What is missing is scholarship which tells the story of the different politicizations in the different European member states comparatively to give an overview of what happened in each.[270] This would inevitably draw on the national histories, a very important dimension because these span a vast spectrum - east/west being just one line of difference. With Mansell[271], we can argue for localized histories of the internet - to account for the differences in societal experience. This is a position which is different from the two „dominant" imaginaries found in the two political projects in that it doesn't make central

[270] An interesting first step in such a pursuit has recently been provided by Ganz, 2018 for the German context.
[271] Mansell, 2017

assumptions about the internet, rather, it proceeds by exploring the uneven politicizations of different social groups and looks at the ways in which untested assumptions hindered political action. Such scholarship could provide a valuable contribution to a European perspective on the process of platformization.

10. Conclusion

This investigation has provided a “thick” description of the development of European telecommunications policy in the past twenty years, with a focus on the interaction of the practices of actors, their problematizations, and European governance institutions.

I hope that this thesis was able to contribute to our understanding of continuity in change in the evolving transformation that is platformization.

11. Appendix

11.1. Appendix 1

11.1.1. Text

5G Manifesto for timely deployment of 5G in Europe

Introduction

Commissioner G.H. Oettinger, responsible for the Digital Economy & Society, announced in February that the European Commission intends to develop a **5G Action Plan** aimed at giving Europe the leadership in the deployment of standardised 5G networks as from 2020. In this context, the Commissioner has called upon the industry to contribute to the shaping and consequent backing of the 5G Action Plan.

The Digital Single Market (DSM) calls for actions to "boost competitiveness through interoperability and standardisation" and to support the digitalisation of Europe's industry and services sectors. 5G has the potential to deliver substantial performance and capacity improvements for personal, public and enterprise communications. It has the potential to provide a suitable communication solution basis for vertical applications, as well as to offer new architectural concepts and value chains to efficiently support innovation and future needs. 5G is about the seamless interworking of different network technologies, mobile, fixed as well as satellite, and their co-existence within a common infrastructure of standardised and customer specific networks or IT functionalities, designed to fit vertical industries as well as consumers to broaden digital inclusiveness.

The industry took on the challenge to identify the best context in which to launch 5G services across Europe by 2020 (including enhanced mobile broadband, massive machine type communications and ultra-reliable and low-latency communications, as currently being standardised within 3GPP and ITU). Such commercial 5G launches will require substantial investments in new infrastructure, a large amount of spectrum and new capabilities, as well as a close collaboration between telecom players (telecom operators, mobile operators, satellite operators, infrastructure and device vendors) and vertical industries (including their hardware and software ecosystems) in order to ensure that (i.) technical requirements are identified and suitably addressed and (ii.) business models are available and acceptable to

providers and users. Cooperation between the telco Industry and Verticals is paramount to achieve scale and return on investment for 5G.

This **5G Manifesto** intends to foster effective interactions and collaboration with industry verticals, the formation of ecosystems as a result large-scale demonstrators and, last but not least, an investment-centric policy framework - bringing together the key levers to ensure European digital leadership in 5G and beyond.

5G can be the key enabler for the digitalisation of the European economy

The fast-paced digitalisation of "vertical industries" (such as transport, logistics, automotive, health, manufacturing, energy, media, entertainment) and the public sector (including smart cities, public safety and education) - provides opportunities for Europe's information and communication technologies (ICT) and vertical industries to bring to market new and innovative solutions.

5G can be a key enabler of this digitalisation, accommodating the **diverse connectivity needs of industrial applications** (e.g. high speed, low latency, resilience, ubiquity etc.) through a common "system of systems" approach. Industry Verticals expect 5G to deliver enhanced levels of service assurance and guarantees to cater for specialised use-cases. A fundamental enhancement brought by 5G is the possibility to deliver virtual "network slices" offering different capabilities according to specialised needs. 5G network slices are meant to run on shared infrastructure without deteriorating the agreed levels of service. At the same time, 5G preserves the economy of scale benefits of a common network infrastructure, avoiding technology fragmentation, preventing energy and spectrum wastage and facilitating cross-sector innovation, thus improving the competitiveness of the European economy. 5G can therefore facilitate connectivity, network access and service security of different vertical sectors and be instrumental to the management and automation of business assets and processes.

A strong 5G dialogue must be further developed between vertical industries and the telecom sector, starting from the basis of an in-depth mutual understanding. 4G technology and the future roadmap are pillars for 5G. Scale of investment is required to achieve 5G and an industrial collaboration between Telco and Industry stakeholders is required to ensure 5G can create substantial value by offering digital solutions that meet genuine business needs at

European and global scale and across a variety of use-cases. The telecommunication industry therefore invites the European Commission and Member States to promote the benefits of 5G networks as these meet the digital connectivity needs of vertical industries and public institutions more cost-effectively than stand-alone or be-spoke solutions. In addition, the European Commission should legally secure investment and welfare-enhancing forms of economic cooperation between market-players involved in the development of 5G ecosystems.

In order to facilitate the adoption of 5G technologies, the European Commission and Member States must encourage and incentivise cross-sector innovation through adequate policies and support for cross-sector hubs for experiments, trials and large scale pilot programs. Policies and rules must be future-oriented, pro-investment and pro-innovation. It would be appropriate to investigate whether regulatory harmonisation in some industry sectors, such as healthcare, energy or automated transport, is feasible and could help unlock truly pan-European services. Cross-sector policy enhancements must be ambitious and implemented speedily in order to capitalise on the 5G innovation "window".

Ecosystem-forming initiatives by industry players and the role of EU

Supporting standards definition activities. Standards are crucial for 5G success. EU policy makers play an important role in fostering 5G standardisation, including: (i.) co-funding of standardisation activities, (ii.) helping SDO (Standards Development Organisation) harmonisation; (iii.) incentivising private sector investment into capital intensive, long-term R&D for contribution to 5G standards; (iv.) seamless interworking of verticals application across different technologies through standard interfaces (e.g. from cellular to satellite) to allow ubiquity and resilience in the 5G "system of systems" and (v.) encouraging 5G international coordination and cross-sectorial endorsement (through participation of representatives of European vertical industries to the development of 5G standards and vertical use-cases) while avoiding any duplication of standards across telco and vertical industries.

Equally crucial to 5G success in Europe is the creation of a skilled community of software developers to bring the next wave of technology innovation to full business fruition with value adding vertical applications.

Pan-European 5G trials. Greater awareness and momentum for 5G in Europe will be achieved if there is coordination across European stakeholders' various pre-commercial trials. These deployments would act as catalysts to turn innovation into full business solutions once 5G standards have been released. A two-phase trial roadmap, encompassing different use-cases, is being proposed.

Before 2018 (before the availability of the first 5G 3GPP release): Technology trials run by independent trial consortia in various countries, **independent of the status of standardisation,** demonstrate and validate new 5G capabilities as well as foster an ecosystem around new 5G capabilities. Vertical industries will already be involved in this phase.

Around 2018 (5G 3GPP first release close to being finalised – and additional frequency spectrum for 5G expected to be identified in WRC 2019 to enable the full performances capabilities of 5G in terms of capacity and speed): European stakeholders agree on **trial specifications** (use-cases, scenarios, interfaces, agreement to transfer use-cases across trial networks) valid for pan- European trials, based as much as possible on standard-compliant systems. These trials aim to demonstrate wider interoperability and support for vertical use-cases in order to claim global public attention. The following 5G use-cases are currently under consideration:

Demonstration of the concept of 5G network virtualisation (slicing) to accommodate specific needs or business models with enhanced levels of service assurance and guarantees.

Connected **automotive** scenarios, including ultra-broadband infotainment, safety applications and automated / autonomous driving across motorways in Europe.

Connected eHealth scenarios that can spark Healthcare innovation and business transformation across the continuum of care, keeping Healthcare affordable to citizens and government (and tax payers).

Reliable, high capacity broadband connectivity in connected planes, railway and high-speed transportation across Europe, and **transport and logistic** networks with multimodal cargo (truck, rail, shortsea, barge, plane/drone).

Public Safety use-cases providing security, reliability and real-time broadband connectivity for

key events involving large audience, for example at European Soccer Championship 2020.

Smart grids: ensuring networks stability and coordinating energy distribution from diverse sources (e.g. wind, solar, power-plant) and different regions.

Smart City use-cases including connected bus shelters, real-time traffic monitoring and analytics, crowd management, smart homes, ageing population, augmented reality for tourism and advertising.

Media and entertainment use-cases, including the integration of satellite and terrestrial network services, demonstrating the power of multicast and caching for delivering a cost-effective and scalable user experience **anywhere in Europe** (e.g. at the Glasgow-Berlin European Championships in 2018 and European Soccer Championship 2020)**,** as well as immersive video scenarios showcasing the benefits of 5G capacity enhancements.

The industry players are committed to delivering a roadmap of trials and demonstrators by January 2017, to achieve interoperability of networks and use-cases for the period 2018 – 2020 and make 5G benefits known to vertical players, investors and the general public.

Funding Instruments to drive the 5G ecosystem: In addition to funding research and innovation projects of the 5GPPP, the European Commission should consider allocating funds to trials and large- scale demonstrators as well as establishing a 5G Venture Fund to foster a new wave of start-ups and innovation around 5G technologies.

FUND FOR LARGE SCALE DEMONSTRATORS: Funding is required to incentivise vertical industries to experiment with new services that are enabled or enhanced by 5G technologies, as early as 2018 and to allow the 2-way process to align requirements between 5G networks and vertical industries. Such grants can be between the €0.5bn (billion) to €1.0bn range (also from existing EU funding instruments), awarded through agile governance.

5G VENTURE FUND: such an instrument, above the € 1bn mark, would allow the EU to take equity stakes in European innovative start-ups aiming at developing 5G technologies and applications across verticals. If equipped with cross-industry expertise and venturing best practices, the 5G Venture Fund will become catalyst for digital innovation at European scale (500 million users, several billions of connected objects), attracting private capital along the

way to accompany successful startups during the upscale process.

Both instruments must be characterised by lean administrative procedures, simple and effective governance.

Separately, any infrastructure funding should be focused on physical infrastructure, such as ducts or a digital spine, that provides the greatest benefit for operators and that can facilitate wider fibre investment and competition in the development of 5G.

In order to bootstrap the 5G demand market, Public Institutions (such as national health services, education, municipal authorities, etc.) also have a critical role to play as early adopters or anchor tenants of 5G solutions that, with associated budgets, can help to kick-start 5G in Europe in the 2020 timeframe.

A 5G action plan unfolding in a Digital Single Market

Spectrum: Sufficient spectrum - licensed in time and at reasonable prices - is needed if the 5G target launch date is to be met and to support the various applications and technologies that are envisaged in a "system of systems". This means harmonised licensing of 700MHz, 3.4-3.8GHz and higher- frequency bands (for 24GHz and beyond) by 2020 taking into account the outcomes of ongoing studies, preparing to identify and clear future expansion bands, and removing restrictions in existing licences and uses that might prohibit the deployment of 5G. The spectrum aspects of the Digital Single Market - namely, harmonisation and predictability of spectrum policy across Member States (including spectrum availability, licensing procedures and costs, licence terms, and liberalisation and renewal of existing spectrum) - are also essential to encourage more investment into the mobile sector and in 5G. The telecommunication industry expects substantial evolution in spectrum policy harmonisation and bands availability well ahead of WRC 19.

Aligned roadmaps and deployment priorities across EU Member States: Vertical industries operate across European Member States and require pan-European and cross-border 5G services. The European 5G Action Plan must reassure vertical industries that 5G deployment, as a progressive evolution from the existing 4G technologies, will be synchronised across Europe to achieve homogenous availability both in terms of location and time. The automotive, smart grid, transportation & mobility, manufacturing and media & entertainment

sectors will be front-runner 5G users. They call for 5G initial deployments as soon as 2020. In order to help make this new ecosystem a reality, **European operators will target launching 5G in at least one city in each of the 28 European Member States by 2020**. These smart cities will be strong and tangible innovation platforms for Europe, as hubs of social and economic activities.

Investments at the centre of 5G Policy Framework

5G is expected to require significant investments over time, including a new radio access layer, high bandwidth backhaul links, core network upgrades and, for certain scenarios, increased densification of cell sites. Such investments will take place if the **right regulatory environment is created** in particular in the context of the forthcoming review of the European Electronic Communications Framework.

A regulatory environment that puts increased emphasis on investment including R&D: The EU regulatory framework should be reformed to have as **a primary objective** a requirement for NRAs (National Regulatory Authorities) to secure long-term benefits to consumers and European economic development by **incentivising investments in connectivity by all players** and promoting innovation, in contrast to the past focus on cheaper prices. This is especially important in the 5G context, as well as more generally.

Improved regulatory certainty means:

Fewer and simpler rules focused on cases where regulated access to key infrastructure (not replicable through competitive investment) still needs to be safeguarded, based on an assessment of market competition at the retail level;

The right investment environment that encourages commercial flexibility through **co-investment and risk-sharing models** allowing for a fair long-term return on investments;

A **withdrawal of ex-ante regulation** when appropriate is consistent with **greater investment incentives for all players**, in fibre among other 5G ready infrastructures.

Where access regulation remains, **long-term commercial agreements that enable competitive outcomes** should be encouraged wherever possible as an alternative to regulation.

Local regulation to facilitate the construction of denser networks: 5G will require a step-up in investment in mobile access points and supporting fixed infrastructure. Achieving a dense deployment of 5G infrastructure requires **greater harmonisation and simplification of rules** and **the removal of deployment barriers**, including: right-of-way for the installation of passive facilities; supportive municipal site rental charges; removal of taxation on sites and antennas; and predictable, harmonised electromagnetic field (EMF) emissions limits. **Shaping of other ICT regulations that otherwise risk creating barriers to 5G services**: **Policies and rules must be future-oriented, pro-investment and pro-innovation**. All players in the **digital value chain** should operate on a **level playing field**, with equivalent and proportionate privacy requirements to innovate in data-driven markets. There is no justification for imposing stricter obligations on Electronic Communications providers than on other providers of digital services. Converging digital services need converged regulation that is light-touch, future-proof and that facilitates a European single market for services. Regulation should define principles to protect consumer rights and competition, focusing on outcomes (e.g. service characteristics) rather than on means (e.g. how operators evolve and manage their networks).

The EU and Member States **must reconcile the need for Open Internet with pragmatic rules that foster innovation**. The telecom Industry warns that the current Net Neutrality guidelines, as put forward by BEREC, **create significant uncertainties around 5G return on investment**. Investments are therefore likely to be delayed unless regulators take a positive stance on innovation and stick to it.

Telco and Industry Verticals concur that the implementation of Net Neutrality Laws should allow for both innovative specialised services required by industrial applications and the Internet Access quality expected by all consumers.

In this context we must highlight **the danger of restrictive Net Neutrality rules**, in the context of 5G technologies, business applications and beyond. 5G introduces the concept of "Network Slicing" to accommodate a **wide-variety of industry verticals' business models** on a common platform, at scale and with services guarantees.

Automated driving, smart grid control, virtual reality and public safety services are examples of use- cases with distinguished characteristics which call for a **flexible and elastic configuration of resources** in networks and platforms, on a **continuous basis**, depending **on**

demand, **context** and the **nature of the service**. According to the telecom industry, BEREC's draft proposal of implementation rules is excessively prescriptive and could make telcos risk-averse thus hampering the exploitation of 5G, ignoring the fundamental agility and elastic nature of 5G Network Slicing to adapt in real time to changes in end-user / application and traffic demand. The 5G objective of creating new business opportunities and satisfying future end-user needs would be at risk, with a regulation not coherent with the market demand evolution.

It is paramount **to ensure 5G monetisation** to drive investments. Monetisation can take place across the entire value chain with **end-users, service providers and industry verticals** in order to ensure **fair returns**, speed up adoption by end-users and ensure consumers are not alone in picking up the bill for the innovation that will help the business cases of the service providers. Operators should also be **free to mix and manage** different technology generations, mobile or otherwise, that are enabling 5G mobile technology to serve their customers optimally.

Member States and public organisations playing a role in realising 5G: The success of 5G will depend on EU-wide scale support, with **Member States acting coherently** - whether in regard to licensing, providing appropriate state support (such as public investment into a digital spine), or directing early public sector participation.

July 7th 2016

5G Manifesto for timely deployment of 5G in Europe

This 5G Manifesto is endorsed by, ***Gavin Patterson****, Chief Executive Officer, BT Group plc.* ***Timotheus Höttges,*** *Chief Executive Officer, Deutsche Telekom* ***Hans Vestberg****, President and Chief Executive Officer, Ericsson* ***Christian Salbaing****, Deputy Chairman, Hutchison Whampoa Europe* ***Rupert Pearce****, Chief Executive Officer, Inmarsat plc* ***Rajeev Suri****, President and Chief Executive Officer, Nokia* ***Stéphane Richard****, Chief Executive Officer, Orange* ***Dominique Leroy****, Chief Executive Officer, Proximus SA/NV* ***Eelco Blok****, Chief Executive Officer, Royal KPN N.V.* ***Karim Michel Sabbagh****, President and Chief Executive Officer, SES* ***Allison Kirkby****, Group Chief Executive Officer, Tele2 AB* ***Flavio Cattaneo****, Chief Executive Officer, Telecom Italia S.p.A.* ***José María Álvarez-Pallete****, Executive Chairman &*

Chief Executive Officer, Telefonica ***Alejandro Plater,*** *Chief Executive Officer, Telekom Austria Group* ***Sigve Brekke****, President & Chief Executive Officer, Telenor Group* ***Johan Dennelind****, President & Chief Executive Officer, Telia Company* ***Vittorio Colao****, Chief Executive Officer, Vodafone Group*

The following companies from the vertical industries express interest in this initiative and are willing to engage in the next phase:

Ahlers, Airbus Defence & Space, Royal Philips, Siemens AG, Thales Alenia Space

7th July 2016 This list is now open for additional companies in the ***vertical industries*** *as well as in the* ***telecommunications sector*** *to add their names and express support to this 5G Manifesto, as well as to take part in the next phase.*

10.1.2. Detailed Argument Reconstruction

10.1.2.1. Argument 1

The arguers commence their argumentation by asserting through indirect reporting that *"Commissioner G.H. Oettinger, responsible for the Digital Economy & Society, announced in February that the European Commission intends to develop a 5G Action Plan aimed at giving Europe the leadership in the deployment of standardized 5G networks as from 2020.*" Through indirect reporting, the arguers specify that "*in this context, the Commissioner has called upon the industry to contribute to the shaping and consequent backing of the 5G Action Plan."* This narration of events refers to the context of action and is part of the circumstantial premise.

The act of "calling upon the industry" suggests a specific, institutionalized relationship between the European Commission and specific companies which have been included in the concept of "the industry": this act suggests that these companies can be interpellated as "the industry".

The arguers are stating that a consequence of the industry contributing to the shaping of the 5G Action Plan would be that the industry would also be backing the 5G Action Plan. This means that they have identified a social, institutional fact: "the industry *ought* to be concerned with fulfilling its duty to collaborate with the EC." This social, institutional fact enters the circumstantial premise separately. By stating that contributing to the shaping of the 5G Action Plan would imply its backing, the arguers are problematizing the deontology which arises from this social, institutional fact.

Using a mixture of direct and indirect reporting, the arguers assert that, *"the Digital Single Market (DSM)* [policy framework] *calls for actions to 'boost competitiveness through interoperability and standardization' and to support the digitalisation of Europe's industry and services sectors."* This is a description of the actions called for by the Digital Single Market (DSM) policy framework. It refers to the context of action and is also part of the circumstantial premise.

The arguers then assert that, "*5G has the potential to deliver substantial performance and capacity improvements for personal, public and enterprise communications. It has the potential to provide a suitable communication solution basis for many vertical applications, as well as to offer new architectural concepts and value chains to efficiently support innovation and future needs."* This refers to the context of action and is part of the circumstantial premise.

They assert that, *"5G is about the seamless interworking of different network technologies, mobile, fixed as well as satellite, and their co-existence within a common infrastructure of standardized and customer specific networks or IT functionalities, designed to fit vertical industries as well as consumers to broaden digital inclusiveness."* This refers to the context of action and is also part of the circumstantial premise.

The arguers then state that, *"the industry took on the challenge to identify the best context in which to launch 5G services across Europe by 2020 (including enhanced mobile broadband, massive machine type communications and ultra-reliable and low-latency communications,*

as currently being standardized within 3GPP and ITU)." This is a narration of a past deliberative event, in which the industry identified the best context in which to launch 5G services across Europe by 2020. It is also an implicit narration of another past deliberative event, in which the decision itself was taken to "take on the challenge".[272] It refers to the context of action and is also part of the circumstantial premise.

The arguers then assert that, *'such commercial 5G launches will require substantial investments in new infrastructure, a large amount of spectrum and new capabilities, as well as a close collaboration between telecom players (telecom operators, mobile operators, satellite operators, infrastructure and device vendors) and vertical industries (including their hardware and software ecosystems) in order to ensure that (i.) technical requirements are identified and suitably addressed and (ii.) business models are available and acceptable to providers and users."* The arguers are asserting which considerations were weighed in a past instance of deliberation. This assertion is part description of what will be required, and part explanation of why "close collaboration between telecom players and vertical industries" will be required.[273] It refers to the context of action and is part of the circumstantial premise.

The arguers then assert via explanation that "*cooperation between the telco Industry and Verticals is paramount to achieve scale and return on investment for 5G".*[274] This also refers to the context of action and is part of the circumstantial premise.

The arguers state that: "*this 5G Manifesto intends to foster effective interactions and collaboration with industry verticals, the formation of ecosystems as a result of large-scale*

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[272] The arguers are referring to a past – unspecified - instance of deliberation by different companies about "what should be done", in which the expectations of them by the European Commissioner by virtue of the social, institutional fact of their being part of an institutional framework appeared as a relevant circumstantial premise in their reasoning. The fact of this past instance of deliberation indicates that "the industry" met, motivated by the concern that it "ought to be concerned with European leadership in 5G and beyond." In the course of their deliberation, these companies seem to have decided that this expectation of them was a relevant concern and/or overrode other relevant concerns.

[273] The *explanandum* of the explanation – that which needs to be explained – is why "close collaboration between telecom players (telecom operators, mobile operators, satellite operators, infrastructure and device vendors) and vertical industries (including their hardware and software ecosystems)" is required.
The *explanans* – that which contains the explanation - is the cause that it is necessary to identify and suitably address technical requirements and make business models available and acceptable to providers and users.

[274] The explanandum – that which needs to be explained – is why cooperation between the telco Industry and Verticals is paramount. The explanans – that which contains the explanation – is the necessary condition of achieving scale and return on investment.

demonstrators and, last but not least, an investment-centric policy framework – bringing together the key levers to ensure European leadership in 5G and beyond." This statement identifies both the claim for action, the goal premise and the motivational premise. The claim for action is: *The Agent (the arguers) presumably ought to publish a 5G Manifesto.* The goal premise is: "*Effective interactions and collaboration with industry verticals, the formation of ecosystems as a result of large-scale demonstrators and an investment-centric policy framework are being fostered".*

The motivational premise is: *"To ensure European digital leadership in 5G and beyond.*

The envisioned consequence the action will have is that "the key levers" will be 'brought together'.

The means-goal premise is: it is necessary for the agent (the arguers) to publish a 5G Manifesto for timely deployment of 5G in Europe, in order for effective interactions and collaboration with industry verticals, the formation of ecosystems as a result of large-scale demonstrators and an investment-centric policy framework to be fostered.

10.1.2.2. Argument 2

The arguers begin their argumentation by explaining that, *"the fast-paced digitalization of 'vertical industries' (such as transport, logistics, automotive, health, manufacturing, energy, media, entertainment) and the public sector (including smart cities, public safety and education) – provides opportunities for Europe's information and communication technologies (ICT) and vertical industries to bring to market new and innovative solutions."*[275] This refers to the context of action and is part of the circumstantial premise.

The arguers then explain that "***5G can be a key enabler of this digitalization*** [emphasis in original]*, accommodating* ***the diverse connectivity needs of industrial applications*** [emphasis in original] *(e.g., high speed, low latency, resilience, ubiquity etc.) through a*

[275] The explanandum – what needs to be explained – is why opportunities for Europe's information and communication technologies (ICT) and vertical industries to bring to market new and innovative solutions are provided. The explanans – that which contains the explanation – is the cause of the fast-paced digitalisation of ‚vertical industries' and the public sector.

common 'system of systems' approach."[276] This refers to the context of action and is part of the circumstantial premise.

The arguers then assert that "*industry Verticals expect 5G to deliver enhanced levels of service assurance and guarantees to cater for specialized use-cases.*" This is a description of "industry Verticals'" expectations of 5G. It refers to the context of action and is part of the circumstantial premise.

The arguers explain that *"A fundamental enhancement brought by 5G is the possibility to deliver virtual 'network slices' offering different capabilities according to specialized needs."*[277] This refers to the context of action and is part of the circumstantial premise.

They state that, "*5G network slices are meant to run on shared infrastructure without deteriorating the agreed levels of service."* This is a description of intent: "5G network slices were *meant* to run on shared infrastructure […]". It refers to the context of action and is part of the circumstantial premise.

The arguers then explain that "*At the same time, 5G preserves the economy of scale benefits of a common network infrastructure, avoiding technology fragmentation, preventing energy and spectrum wastage and facilitating cross-sector innovation, thus improving the competitiveness of the European economy."*[278] This refers to the context of action and is part of the circumstantial premise.

The arguers conclude by claiming that, "*5G can therefore facilitate connectivity, network access and service security of different vertical sectors and be instrumental to the*

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[276] The explanandum – what needs to be explained - is why "5G can be a key enabler of this digitalisation". The explanans – that which contains the explanation - is the cause that 5G accommodates "the diverse connectivity needs of industrial applications through a common 'system of systems' approach."

[277] The explanandum - what needs to be explained – is why 5G brings a fundamental enhancement. The explanans - that which contains the explanation - is the cause that it allows for the offering of different capabilities according to specialized needs via the possibility of delivering virtual 'network slices'.

[278] The explanandum – what needs to be explained – is why 5G avoids technology fragmentation, prevents energy and spectrum wastage and facilitates cross-sector innovation thus improving the competitiveness of the European economy. The explanans – that which contains the explanation – is the cause that 5G preserves the economy of scale benefits of a common network infrastructure.

management and automation of business assets and processes." This also refers to the context of action and is part of the circumstantial premise.

The arguers then claim that, *"**a strong 5G dialogue must be further developed between vertical industries and the telecom sector*** [emphasis in original], *starting from the basis of an in-depth mutual understanding."*

This is the arguers' motivational premise, their actual concern: "a strong 5G dialogue is being further developed between vertical industries and the telecom sector, starting from the basis of an in-depth mutual understanding".

They state that, *"4G technology and the future roadmap are pillars for 5G"*. This is a description which refers to the context of action and is part of the circumstantial premise.

The arguers then claim that *'scale of investment is required to achieve 5G', 'and an industrial collaboration between Telco and Industry stakeholders is required to ensure 5G can create substantial value by offering digital solutions that meet genuine business needs at European and global scale and across a variety of use-cases.'* This refers to the context of action and is part of the circumstantial premise.

The arguers explain that "*the telecommunication industry therefore invites the European Commission and Member States to promote the benefits of 5G networks as these meet the digital connectivity needs of vertical industries and public institutions more cost-effectively than stand-alone or be-spoke solutions. In addition, the European Commission should legally secure investment and welfare-enhancing forms of economic cooperation between market-players involved in the development of 5G ecosystems."*[279] This refers to the context of action and is part of the circumstantial premise.

[279] The explanandum – what needs to be explained – is why the telecommunication industry is inviting the European Commission and Member States to promote the benefits of 5G networks. The explanans – that which contains the explanation – is the necessary condition of meeting the digital connectivity needs of vertical industries and public institutions more cost-effectively than stand-alone or be-spoke solutions.

They explain that *"in order to facilitate the adoption of 5G technologies, the European Commission and Member States must encourage and incentivize cross-sector innovation through adequate policies and support for cross-sector hubs for experiments, trials and large-scale pilot programs."*[280] This refers to the context of action and is part of the circumstantial premise.

They then assert that, *"Policies and rules must be future-oriented, pro-investment and pro-innovation."* This refers to the context of action and is part of the circumstantial premise.

The arguers explain that "*it would be appropriate to investigate whether regulatory harmonization in some industry sectors, such as healthcare, energy or automated transport, is feasible and could help unlock truly pan-European services."*[281] This refers to the context of action and is part of the circumstantial premise.

The arguers explain that "*cross-sector policy enhancements must be ambitious and implemented speedily in order to capitalize on the 5G innovation 'window'".*[282]

The claim for action is: The agent (the EC and Member States) (presumably) ought to speedily implement ambitious cross-sector policy enhancements.

The goal premise is: The 5G innovation 'window' is being capitalized on.

The means-goal premise is: It is necessary for the EC and Member States to implement ambitious cross-sector policy enhancements in order for the 5G innovation 'window' to be capitalized on.

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[280] The explanandum – what needs to be explained – is why the EC and Member States must encourage and incentivize cross-sector innovation through adequate policies and support for cross-sector hubs for experiments, trials and large scale pilot programs. The explanans – that which contains the explanation – is the necessary condition of facilitating the adoption of 5G technologies.

[281] The explanandum – what needs to be explained – is why it should be investigated whether regulatory harmonization in some industry sectors, such as healthcare, energy or automated transport is feasible. The explanans – that which contains the explanation – is the cause that truly pan-European services could be unlocked.

[282] The explanandum – what needs to be explained – why cross-sector policy enhancements ought to be ambitious and implemented speedily. The explanans – that which contains the explanation – is the necessary condition of capitalizing on the 5G innovation 'window'.

10.1.2.3. Argument 3

This instance of argumentation commences under the headline "*Ecosystem-forming initiatives by industry players and the role of the EU".*

Following the subheading "supporting standards definition activities", the arguers claim that "standards are crucial for 5G success." This refers to the context of action and is part of the circumstantial premise. It also contains the motivational premise of the arguers, their actual concern: "5G success".

The arguers then claim that, "*EU policy makers play an important role in fostering 5G standardization, including: (i.) co-funding of standardization activities, (ii.) helping SDO (Standards Development Organization) harmonization; (iii.) incentivizing private sector investment into capital intensive, long-term R&D for contribution to 5G standards; (iv.) seamless interworking of verticals application across different technologies through standard interfaces (e.g. from cellular to satellite) to allow ubiquity and resilience in the 5G "system of systems" and (v.) encouraging 5G international coordination and cross-sectorial endorsement (through participation of representatives of European vertical industries to the development of 5G standards and vertical use-cases) while avoiding any duplication of standards across telco and vertical industries.*" This refers to the context of action and is part of the circumstantial premise.

The arguers then explain that, "*equally crucial to 5G success is the creation of a skilled community of software developers to bring the next wave of technology innovation to full business fruition with value adding vertical applications.*"[283] This refers to the context of action and is part of the circumstantial premise.

[283] The explanandum – what needs to be explained – is why the creation of a skilled community of software developers is equally crucial to 5G success. The explanans – that which contains the explanation – is the necessary condition of bringing the next wave of technology innovation to full business fruition with value adding vertical applications.

Following the subheading "Pan-European 5G trials", the arguers explain that *"greater awareness and momentum for 5G will be achieved if there is coordination across European stakeholders' various pre-commercial trials."*[284]

This contains another actual concern of the arguers, "to achieve greater awareness and momentum for 5G."

They then explain that, "*these deployments would act as catalysts to turn innovation into full business solutions once 5G standards have been released".*[285]

The arguers assert that, *"a two-phase trial roadmap, encompassing different use-cases, is being proposed.*

*"**Before 2018*** [emphasis in original] *(before the availability of the first 5G 3GPP release): Technology trials run by independent trial consortia in various countries, **independent of the status of standardization,*** [emphasis in original] *demonstrate and validate new 5G capabilities as well as foster an ecosystem around new 5G capabilities. Vertical industries will already be involved in this phase."*

They then report that: *"**Around 2018*** [emphasis in original] *(5G 3GPP first release close to being finalized – and additional frequency spectrum for 5G expected to be identified in WRC 2019 to enable the full performance capabilities of 5G in terms of capacity and speed): European stakeholders agree on **trial specifications*** [emphasis in original] *(use-cases, scenarios, interfaces, agreement to transfer use-cases across trial networks) valid for pan-European trials, based as much as possible on standard-compliant systems. These trials aim to demonstrate wider interoperability and support for vertical use-cases in order to claim global public attention. The following 5G use-cases are currently under consideration:*

Demonstration of the concept of 5G network virtualization (slicing) to accommodate specific

[284] The explanandum – what needs to be explained – is why there ought to be greater coordination across European stakeholders' various pre-commercial trials. The explanans – that which contains the explanation – is the necessary condition of achieving greater awareness and momentum for 5G.
[285] The explanandum – what needs to be explained – is why 5G standards ought to be released. The explanans – that which contains the explanation – is the cause that these would allow deployments to act as catalysts to turn innovation into full business fruition.

needs or business models with enhanced levels of service assurance and guarantees.

*Connected **automotive*** [emphasis in original] *scenarios, including ultra-broadband infotainment, safety applications and automated / autonomous driving across motorways in Europe.*

Connected eHealth [emphasis in original] *scenarios that spark Healthcare innovation and business transformation across the continuum of care, keeping Healthcare affordable to citizens and government (and tax payers).*

*Reliable, high capacity broadband connectivity in connected planes, railway and high-speed transportation across Europe, and **transport and logistics*** [emphasis in original] *networks with multimodal cargo (truck, rail, shortsea, barge, plane/drone).*

Public Safety [emphasis in original] *use-cases providing security, reliability and real-time broadband connectivity for key events involving large audience, for example at European Soccer Championship 2020.*

Smart grids [emphasis in original]*: ensuring networks stability and coordinating energy distribution from diverse sources (e.g. wind, solar, power-plant) and different regions.*

Smart City [emphasis in original] *use-cases including connected bus shelters, real-time traffic monitoring and analytics, crowd management, smart homes, ageing population, augmented reality for tourism and advertising.*

Media and entertainment [emphasis in original] *use-cases, including the integration of satellite and terrestrial network services, demonstrating the power of multicast and caching for delivering a cost-effective and scalable user experience **anywhere in Europe*** [emphasis in original] *(e.g., at the Glasgow-Berlin European Championships in 2018 and European Soccer Championship 2020), as well as immersive video scenarios showcasing the benefits of 5G capacity enhancements."* This refers to the context of action and is part of the circumstantial premise.

The arguers then assert that, *"the industry players are committed to delivering a roadmap of trials and demonstrators by January 2017, to achieve interoperability of networks and use-cases for the period 2018 – 2020 and make 5G benefits known to vertical players, investors*

and the general public." This assertion of the fact that there is a commitment by 'industry players' refers to the context of action and is part of the circumstantial premise.

The subheading "*funding instruments to drive the 5G ecosystem"* contains the goal premise: The [development of the] 5G ecosystem is being driven.

The arguers state that, "*in addition to funding research and innovation projects of the 5GPPP, the European Commission should consider allocating funds to trials and large-scale demonstrators as well as establishing a 5G Venture Fund to foster a new wave of start-ups and innovation around 5G technologies."*

This contains the first part of the claim for action: the agent (the European Commission), (presumably) ought to consider allocating funds to trials and large-scale demonstrators and establishing a 5G Venture Fund (in addition to funding research and innovation projects of the 5GPPP).

Concerning the "funds for trials and large-scale demonstrators", the arguers claim that "*funding is required to incentivize vertical industries to experiment with new services that are enabled or enhanced by 5G technologies, as early as 2018 and to allow the 2-way process to align requirements between 5G networks and vertical industries. Such grants can be between the €0.5bn (billion) to €1.0bn range (also from existing EU funding instruments), awarded through agile governance."* This refers to the context of action and is part of the circumstantial premise.

Concerning the "5G Venture Fund", the arguers claim that "*such an instrument, above the €1bn mark, would allow the EU to take equity stakes in European innovative start-ups aiming at developing 5G technologies and applications across verticals. If equipped with cross-industry expertise and venturing best practices, the 5G Venture Fund will become catalyst for digital innovation at European scale (500 million users, several billions of connected objects), attracting private capital along the way to accompany successful start-ups during the upscale process."* This refers to the context of action and is part of the circumstantial premise.

The arguers then specify the claim for action: "*both instruments must be characterized by lean administrative procedures, simple and effective governance*".

They claim that "*separately, any infrastructure funding should be focused on physical infrastructure, such as ducts or a digital spine, that provides the greatest benefit for operators and that can facilitate wider fiber investment and competition in the development of 5G.*" Here, the arguers have elaborated on the claim for action.

Formalized, the entire claim for action is: The agent (the European Commission), (presumably) ought to consider allocating funds to trials and large-scale demonstrators and to a 5G Venture Fund (in addition to funding research and innovation projects of the 5GPPP), which are characterized by lean administrative procedures, simple and effective governance, while focusing any infrastructure funding on physical infrastructure, such as ducts or a digital spine.

The means-goal premise is: it is necessary for the agent (the European Commission) to consider allocating funds to trials and large scale demonstrators and to a 5G Venture Fund (in addition to funding research and innovation projects of the 5GPPP), which are characterized by lean administrative procedures, simple and effective governance, while focusing any infrastructure funding on physical infrastructure, such as ducts or a digital spine, in order for [the development of the] 5G ecosystem to be driven.

In closing, the arguers claim that "*in order to bootstrap the 5G demand market, Public Institutions (such as national health services, education, municipal authorities, etc.) also have a critical role to play as early adopters or anchor tenants of 5G solutions that, with associated budgets, can help to kick-start 5G in Europe in the 2020 timeframe."* This also refers to the context of action and is part of the circumstantial premise.

10.1.2.4. Argument 4

The argument commences under the heading "*A 5G action plan unfolding in a Digital Single Market".* This is the motivational premise of the arguers, the actual concern.

The arguers begin their argumentation by claiming that *"**Sufficient spectrum – licensed in time and at reasonable prices – is needed if the 5G target launch date is to be met*** [emphasis in original] *and to support the various applications and technologies that are envisaged in a 'system of systems'."*

This is the claim for action: the agent (an authority) (presumably) ought to license sufficient spectrum in time and at reasonable prices.

The goal premises are: "the 5G target launch date is being met" and "the various applications and technologies that are envisaged in a 'system of systems' are being supported".

The means-goal premise is: It is necessary for the agent (an authority) to license sufficient spectrum in time and at reasonable prices, in order for the target launch date to be met and the various applications and technologies that are envisaged in a 'system of systems' to be supported.

The arguers then provide a description of what the suggested action, "licensing sufficient spectrum in time and at reasonable prices", is intended to entail: *"This means harmonized licensing of 700MHz, 3.4-3.8GHz and higher- frequency bands (for 24 GHz and beyond) by 2020 taking into account the outcomes of ongoing studies, preparing to identify and clear future expansion bands, and removing restrictions in existing licenses and uses that might prohibit the deployment of 5G".* This refers to the context of action and is part of the circumstantial premise.

The arguers then assert that *"the spectrum aspects of the Digital Single Market – namely, harmonization and predictability of spectrum policy across Member States (including spectrum availability, licensing procedures and costs, license terms, and liberalization and renewal of existing spectrum) – are also essential to encourage more investment into the mobile sector and in 5G*". This also refers to the context of action and is part of the circumstantial premise.

The arguers then assert that, *"the telecommunication industry expects substantial evolution in spectrum policy harmonization and bands availability well ahead of WRC 19"* (158-159). This also refers to the context of action and is part of the circumstantial premise.

10.1.2.5. Argument 5

The fifth argument is also under the heading "*A 5G action plan unfolding in a Digital Single Market"*. This is the motivational premise of the arguers.

The instance of argumentation begins with the subheading "*aligned roadmaps and deployment priorities across EU Member States".* This is the goal premise, a (possible) future state of affairs in which deployment priorities and roadmaps across EU Member States have been aligned.

The arguers explain that "*vertical industries operate across European Member States and require pan-European and cross-border 5G services."*[286] This refers to the context of action and is part of the circumstantial premise.

They claim that "*the European 5G Action Plan must reassure vertical industries that 5G deployment, as a progressive evolution from the existing 4G technologies, will be synchronized across Europe to achieve homogenous availability both in terms of location and time."* This is the claim for action.

Formalized, the claim for action is the following: the agent (the European 5G Action Plan) (presumably) ought to reassure vertical industries that 5G deployment, as a progressive evolution from the existing 4G technologies, will be synchronized across Europe to achieve homogenous availability both in terms of location and time.

The means-goal premise is: It is necessary for the agent (the European 5G Action Plan) to reassure vertical industries that 5G deployment, as a progressive evolution from the existing

[286] The explanandum – what needs to be explained – is why vertical industries require pan-European and cross-border 5G services. The explanans – that which contains the explanation – is the cause of vertical industries operating across European Member States.

4G technologies, will be synchronized across Europe to achieve homogenous availability both in terms of location and time, in order for roadmaps and deployment priorities across EU Member States to be aligned.

The arguers then explain that "*the automotive, smart grid, transportation & mobility, manufacturing and media & entertainment sectors will be front-runner 5G users. They call for initial deployments as soon as 2020."*[287] This refers to the context of action and is part of the circumstantial premise.

The arguers then assert that "*in order to help make this new ecosystem a reality,* ***European operators will target launching 5G in at least one city in each of the 28 European Member States by 2020*** [emphasis in original]." They explain that "*these smart cities will be strong and tangible innovation platforms for Europe, as hubs of social and economic activities.*"[288] This refers to the context of action and is part of the circumstantial premise.

10.1.2.6. Argument 6

The instance of argumentation commences under the headline "*Investments* [are] *at the center of* [the] *5G Policy Framework"*. This is the actual concern.

The arguers assert that, *"5G is expected to require significant investments over time, including a new radio access layer, high bandwidth backhaul links, core network upgrades and, for certain scenarios, increased densification of cell sites"* (171-173). This is a description of an expectation which refers to the context of action, thereby being part of the circumstantial premise.

[287] The explanandum – what needs to be explained – is why the automotive, smart grid, transportation & mobility, manufacturing and media & entertainment sectors call for initial deployments as soon as 2020. The explanans – that which contains the explanation – is the cause that they will be front-runner 5G users.
[288] The explanandum – what needs to be explained – is why these cities will be strong and tangible innovation platforms for Europe. The explanans – that which contains the explanation – is the cause that they will be hubs of social and economic activities.

The arguers then assert that *"such investments will take place if the **right regulatory environment is created*** [emphasis in original] *in particular in the context of the forthcoming review of the European Electronic Communications Framework."* (173-175)

This contains the claim for action: the agent (an authority) (presumably) ought to create the right regulatory environment, in particular in the context of the forthcoming review of the European Electronic Communications Framework.

The goal premise is: "the required investments are taking place".

Means-goal premise: it is necessary for the agent (an authority) to create the right regulatory environment, in particular in the context of the forthcoming review of the European Electronics Communications Framework, in order for the required investments to take place.

Below the subheading, "*a regulatory environment that puts increased emphasis on investment including R&D"* the arguers describe the envisioned "right regulatory environment":

The arguers claim that "*the EU regulatory framework should be reformed to have as **a primary objective*** [emphasis in original] *a requirement for NRAs (National Regulatory Authorities) to secure long-term benefits to consumers and European economic development by **incentivizing investments in connectivity by all players*** [emphasis in original] *and promoting innovation, in contrast to the past focus on cheaper prices. This is especially important in the 5G context, as well as more generally.*" This refers to the context of action and is part of the circumstantial premise.

The arguers then describe what *"**Improved regulatory certainty*** [emphasis in original] *means".* It means, "***Fewer and simpler rules** focused on cases where regulated access to key infrastructure (not replicable through competitive investment) still needs to be safeguarded, based on an assessment of market competition at the retail level; The right risk investment environment that encourages commercial flexibility through **co-investment and risk-sharing***

models *allowing for a fair long-term return on investments; A* ***withdrawal of ex-ante regulation*** *when appropriate is consistent with* ***greater investment incentives for all players****, in fiber among other 5G ready infrastructures.*[289] *Where access regulation remains,* ***long-term commercial agreements that enable competitive outcomes*** *should be encouraged wherever possible as an alternative to regulation."* [290] This also refers to the context of action and is part of the circumstantial premise.

Following the subheading, "*local regulation to facilitate the construction of denser networks", t*he arguers claim that *"5G will require a step-up in investment in mobile access points and supporting fixed infrastructure."* This refers to the context of action and is part of the circumstantial premise.

They explain that "*achieving a dense deployment of 5G infrastructure requires* ***greater harmonization and simplification of rules*** *and* ***the removal of deployment barriers,*** *including: right-of-way for the installation of passive facilities; supporting municipal site rental charges; removal of taxation on sites and antennas; and predictable, harmonized electromagnetic field (EMF) emissions limits."*[291] This also refers to the context of action and is part of the circumstantial premise.

Following the subheading, "*shaping of other ICT regulations that otherwise risk creating barriers to 5G services", t*he arguers claim that "***policies and rules must be future-oriented, pro-investment and pro-innovation*** [emphasis in original]." This refers to the context of action and is part of the circumstantial premise. It also re-states a previously made claim in Argument 2.

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[289] This statement contains an explanation: the explanandum – what needs to be explained – is why ex-ante regulation ought to be withdrawn. The explanans – that which contains the explanation – is the cause that greater investment incentives for all players in fiber among other 5G ready infrastructures can be brought about.

[290] This statement contains an explanation: the explanandum – what needs to be explained – is why long-term commercial agreements should be encouraged wherever possible as an alternative to regulation. The explanans – that which contains the explanation – is the cause of them being able to enable competitive outcomes.

[291] The explanandum – what needs to be explained – is why greater harmonization and simplification of rules and the removal of deployment barriers, including: right-of-way for the installation of passive facilities; supporting municipal site rental charges; removal of taxation on sites and antennas; and predictable, harmonized electromagnetic field (EMF) emissions limits is required. The explanans – that which contains the explanation – is the cause that it is necessary to achieve a dense deployment of 5G infrastructure.

They claim that *"all players in the **digital value chain*** [emphasis in original] *should operate on a **level playing field*** [emphasis in original]*, with equivalent and proportionate privacy requirements to innovate in data-driven markets."* This also refers to the context of action and is part of the circumstantial premise.

They claim that "there is no justification for imposing stricter obligations on Electronic Communications providers than on other providers of digital services. Converging digital services need converged regulation that is light-touch, future-proof and that facilitates a European single market for services."

Here, the arguers have considered an imagined objection – that "the right regulatory environment" ought to mean imposing stricter obligations on Electronic Communications providers than on other providers of digital services, instead of promoting equality of opportunity to innovate. They have *rejected* this on the basis of negative consequences of failing to modify the regulatory strategy in light of change in circumstance, by explaining that *"converging digital services need converged regulation that is light-touch, future-proof and that facilitates a European single market for services*"[292].

They claim that "*regulation should define principles to protect consumer rights and competition, focusing on outcomes (e.g., service characteristics) rather than on means (e.g., how operators evolve and manage their networks)*."

The arguers claim that "*The EU and Member States **must reconcile the need for Open Internet with pragmatic rules that foster innovation***."

They assert that "*the telecom Industry warns that the current Net Neutrality guidelines, as put forward by BEREC, **create significant uncertainties around 5G return on investment***." This refers to the context of action and is part of the circumstantial premise.

[292] The explanandum – what needs to be explained – is why converged regulation that is light touch, future-proof and that facilitates a European single market for services is needed. The explanans – that which contains the explanation – is the cause that digital services are converging.

They claim that *"Investments are therefore likely to be delayed unless regulators take a positive stance on innovation and stick to it."*

They assert that *"Telco and Industry Verticals concur that the implementation of Net Neutrality Laws should allow for both innovative specialized services required by industrial applications and the Internet Access quality expected by all consumers."* This refers to the context of action and is part of the circumstantial premise.

10.1.2.7. Argument 7

The arguers claim that "*in this context, we must highlight* ***the danger of restrictive Net Neutrality rules*** [emphasis in original], *in the context of 5G technologies, business applications and beyond*."

This is the first part of the claim for action: The agent (the arguers) (presumably) ought to highlight the danger of restrictive Net Neutrality rules, in the context of 5G technologies, business applications and beyond.

They assert that "*5G introduces the concept of "Network Slicing" to accommodate a* ***wide-variety of industry verticals' business models*** [emphasis in original] *on a common platform, at scale and with services guarantees."* This refers to the context of action and is part of the circumstantial premise.

They explain that, *"****automated driving, smart grid control, virtual reality and public safety services*** [emphasis in original] *are examples of use-cases with distinguished characteristics which call for a* ***flexible and elastic configuration of resources*** [emphasis in original] *in networks and platforms, on a* ***continuous basis*** [emphasis in original]*, depending* ***on demand, context*** [emphasis in original] *and the* ***nature of the service*** [emphasis in original]*".*[293] This refers to the context of action and is part of the circumstantial premise.

[293] The explanandum – what needs to be explained – is why a flexible and elastic configuration of resources in networks and platforms, on a continuous basis, depending on demand, context and the nature of the service is called for by automated driving, smart grid control, virtual reality and public safety services. The explanans – what contains the explanation – is the cause of automated driving, smart grid control, virtual reality and public safety services being examples of use-cases with distinguished characteristics.

They then explain that *"according to the telecom industry, BEREC's draft proposal of implementation rules is excessively prescriptive and could make telcos risk-averse*[294] *thus hampering the exploitation of 5G, ignoring the fundamental agility and elastic nature of 5G Network Slicing to adapt in real time to changes in end-user / application and traffic demand.*[295]

The goal premise is: 5G is exploitable.

They explain that *"The 5G objective of creating new business opportunities to satisfy future end-user needs would be at risk, with a regulation not coherent with the market demand evolution."*[296]

The actual concern is: To realize the 5G objective of creating new business opportunities to satisfy future end-user needs.

The arguers claim that "*it is paramount* ***to ensure 5G monetization*** [emphasis in original] *to drive investments."*

This contains the second part of the claim for action: the agent (the arguers) (presumably) ought to state that it is paramount to ensure 5G monetization to drive investments.

They claim that *"monetization can take place across the entire value chain with* ***end-users, service providers and industry verticals*** [emphasis in original] *in order to ensure* ***fair returns*** [emphasis in original]*, speed up adoption by end-users and ensure consumers are not alone*

[294] the explanandum – what needs to be explained – is why BEREC's draft proposal of implementation rules could make telcos risk-averse. The explanans – that which contains the explanation – is the cause that the telecom industry says that BEREC's draft proposal is excessively prescriptive.
[295] The explanandum – what needs to be explained – is why the exploitation of 5G could be hampered. The explanans – that which contains the explanation – is the cause that the fundamental agility and elastic nature of 5G Network Slicing to adapt in real time to changes in end-user / application and traffic demand is being ignored by BEREC's excessively prescriptive draft proposal of implementation rules.
[296] The explanandum – what needs to be explained – is why the 5G objective of creating new business opportunities to satisfy future end-user needs would be at risk. The explanans – that which contains the explanation – is the cause that the regulation would not be coherent with the market demand evolution.

in picking up the bill for the innovation that will help the business cases of the service providers." This refers to the context of action and is part of the circumstantial premise.

The arguers claim that "o*perators should also be* ***free to mix and manage*** [emphasis in original] *different technology generations, mobile or otherwise, that are enabling 5G mobile technology to serve their customers optimally".*

This contains the third part of the claim for action: the agent (the arguers) (presumably) ought to state that operators should also be free to mix and manage different technology generations.

Following the subheading *"Member States and public organizations playing a role in realizing 5G", t*he arguers end their deliberation by explaining that, "*the success of 5G will depend on EU-wide scale support, with* ***Member States acting coherently*** [emphasis in original] – *whether in regard to licensing, providing appropriate state support (such as public investment into a digital spine), or directing early public sector participation."*[297]

This contains the fourth part of the claim for action: the agent (the arguers) (presumably) ought to state that the success of 5G will depend on EU-wide scale support, with Member States acting coherently.

Taking these four parts together, the entire claim for action is: the agent (the arguers) (presumably) ought to highlight the danger of restrictive Net Neutrality rules in the context of 5G technologies, business applications and beyond, state that it is paramount to ensure 5G monetization to drive investments, state that operators should also be free to mix and manage different technology generations, and state that the success of 5G will depend on EU-wide scale support (whether in regard to licensing, providing appropriate state support, or directing early public sector participation), with Member States acting coherently.

[297] The explanandum – what needs to be explained – is why EU-wide scale support, with Member States acting coherently – whether in regard to licensing, providing appropriate state support (such as public investment into a digital spine), or directing early public sector participation is required. The explanans – that which contains the explanation – is the cause that the success of 5G will depend on it.

The means-goal premise is: It is necessary for the agent (the arguers) to highlight the danger of restrictive Net Neutrality rules in the context of 5G technologies, business applications and beyond, state that it is paramount to ensure 5G monetization to drive investments, state that operators should also be free to mix and manage different technology generations, and state that the success of 5G will depend on EU-wide scale support, with Member States acting coherently (whether in regard to licensing, providing appropriate state support, or directing early public sector participation), in order for 5G to be exploitable.

11.2. Appendix 2

Opening Statement by EC Oettinger

My strong belief is that we can together, public and private, make a difference and secure the confidence of our citizens and our consumers. The Digital Single Market is our strategy to unify our European markets and to offer greater opportunities for innovation, for digitizing our economy and society. And, no doubt advanced networks based on 5G are critical for our competitiveness. This morning, here, we had a round table - the third one - and we organized the structured dialogue between our automotive sector, our EM's [Engineering Mobility] and suppliers, and the telecom sector and our telecom regulators and our cybersecurity agencies. Why? For to speak about connected trucks, connected cars, autonomous driving, automated driving. It can be a reality in a few years. Cars, as a new Renault or an E-Class from Mercedes Benz, or a BMW 7 are more or less autonomous. And highways are there. From Lissabon to Vladivostok. But connectivity and courage is a must. That the technology can be used. Pan-European cross-border, in rural areas, all over Europe. And so no doubt you, your companies, your products, and your services, in the past have been mainly relevant for mobile communication. For to send human messages from A to B. And now it's about data flow. It's about transport of data. Between machines; between other devices; between smart buildings; between trucks and cars; between cars and cloud and back to other cars. So, the telecom sector; installations, infrastructure, and services: hardware and software, is in an important and increasing role. And I think, Europe shouldn't be a late comer. Europe should have the ambition, beyond some differences we have, to organize a world class digital infrastructure via fiber, via satellite, via 5G. That's our common ambition. We are seeing what is happening

in the world - looking to South Korea - and I'm sure Hillary Clinton will have a clear priority campaigning next month saying the digital sector with online platforms, with hardware and software, with infrastructure, has to be an American advantage. An argument to invest in the US. And so, we are in challenging times. What we need is a perfect public private partnership. What we need is a clear common vision. What should be developed, what should be regulated, what should be non- or deregulated, what should be moderated, what should be constructed, installed, in the next three four five years. That's it. And here we count on you, on your expertise, on your economic and technical and financial capacity, and we want to hear your expectations to us. Looking to our 700 megahertz band proposal, looking to our telecom review, looking to our 5G Action Plan, looking to spectrum policy and so on. And I'm sure, even eurosceptical people named Farage or whatever else, Johnson, they can't be against our todays work. Nobody can. And its about EU 28 plus to integrate Switzerland, Norway, West Balkan states, Ukraine, Turkey, Russian Federation. Because it's a global challenge and we need a continental answer as you and we are doing. 5G is an opportunity for Europe to reclaim the lead, to use connectivity as a way to invent future markets and make good business for you. Today I want to hear from you and I want to see are your ambitions comparable with ours. First of all, I would like to thank you, your teams, for the timely delivery of the 5G Manifesto. I could read it, it's clear, it's I think in a perfect structure, it's an ambitious offer from your side to us and our European citizens. This remarkable result was achieved in three or four months only and I'm very grateful for your efforts. Let me also thank those of you who joined the initiative since our initial meeting on the twelfth of January. The additional telecommunication operators as well as the representatives of other industries. I think we should all feel privileged to be here in such a distinguished company and I would like you to make the best of this occasion. Ladies and Gentlemen, what is at stake is nothing less than our future competitiveness. Back in 2007, five major mobile phone manufacturers controlled ninety percent of the industry's global profit. These were Nokia, Samsung, Motorola, Sony Ericson, and LG. Europe was in lead as far as 3G deployment was concerned. You know what happened next? Almost the entire mobile phone business was wiped out from Europe. Member states took their time before releasing 4G licenses, and the deployment of 4G networks has been slower in Europe than in Korea, Japan, the US or even China. Europe is now catching up with 4G but we have a chance with 5G to go further, and to put our economies in the lead of the next digital revolution. Connecting everything that can be connected. And this

is why business as usual can't be an option. This is why the Commission has launched in December 2013 the 5G Public Private Partnership, with a planned budget of 700 million Euros until 2020; and you are investing much more. Our 5G PPP is doing well and Europe has the capacity to emerge once more as technology leader, I think. However, as we agreed in January, it's not enough. 5G is not only about the telecom industry, it is about the whole economy. The whole society. It is about using networks as part of our businesses and of our lives. My hope is therefore, that we can deploy 5G networks with a plan to use them to digitize the economy and society. To enable a virtuous circle where we are both leading on the supply side, with excellent technology providers, and at the same time pioneering services on the usage side, followed by quick deployment in emerging lead markets. Today I don't want to lecture you about what you should be doing. I want a candid and honest conversation about what we can do together so that 5G technology deployment delivers positive results for your businesses as well as for European citizens and consumers. Dear colleagues, I could read your manifesto, and I think it makes a lot of sense. And I would like to thank you for the contribution. There are also a few elements of the manifesto where I would like more discussion today. We need something visible to offer to our EU citizens. To make them believe in our 5G future: in Asia they use the Olympics, what should we use in Europe? Here I would like to hear from you what are the attractive options that we could single out? Is it the next European football championship? Is it Formula 1? Eurovision? Tour de France? Or something totally different? Like a series of Smart Cities that connect and showcase some similar applications? To convince politicians and our citizens that Europe and 5G is the future, we need some concrete projects; some concrete test fields, some concrete demonstrations. Secondly, I would like to hear some concrete steps that we could take to increase collaboration between the telecom sector and other advanced vertical sectors. What should we do already in 2017 for instance? Before 5G is available commercially? And finally, I was expecting some inspirational targets going beyond 2020. So that we can benchmark ourselves against other regions of the world. Should we have all motorways in Europe with 5G by 2025? What is our ambition? All new buildings with fiber? All new cars with 5G and upgrades for the rest cars so that everyone can migrate to 5G? Here I am looking for something realistic, but something tangible in terms of a common goal. Me coming from the Stuttgart region, I'm driving often from Brussels via Luxemburg via Metz to Strasbourg and afterwards to Stuttgart. I don't need any Passport. I have one pocket with Euro. No D-Mark, no Franc, no Lira, nothing. But I know all borders, all national borders,

coming from Waterloo, coming from the Vienna Congress, coming from Potsdam and Yalta, coming from Versailles: it's impossible. I get a list of phone calls; - ten, for four hours, - I have twenty phone calls but just with five people. Because, sorry, so often, there was a break. And at any European border, there is a break. For me that is no more acceptable. And connected trucks, cars, can't function in these fragmented mobile silos. I think there is a value added, and we have best arguments to convince our European citizens that Europe can bring a value added. In the digital sector with your installations, with our technology, and with your Pan-European services. In practical terms, for today we have structured the discussion around some issues for discussion because you should feel free to say whatever you feel opportune and I hope we can have a proper discussion. So, let's start with our first point, the ambition level for 5G. Keeping Europe in the lead: essential steps to achieve effective 5G deployment throughout the digital single market.

[Own transcription from video of the Opening Statement]

11.3. Appendix 3

Response to 5G Manifesto
and
Dutch zero-rating provisions

as regards to net neutrality and the BEREC implementation guidelines for regulation of net neutrality (EU 2015/2120)
Arbeitskreis Vorratsdaten Österreich - Austria

Introduction

We want to thank BEREC for the opportunity to comment on their draft guidelines for the implementation of the Telecom Single Market regulation.

First we want to highlight that we have contributed to this process at the BEREC Stakeholder Dialog event on 15. December 2015 in Brussels with co-drafting a written contribution. As well as with two submissions from European Digital Rights for the policy analysis and recommendations to the BEREC draft guidelines. This comment should be read as an extension of these contributions to the process.

The purpose of this comment is to specifically answer to the arguments of the "5G Manifesto" which was released on July 7 by the telecom industry and to point towards information from the net neutrality debate in the Dutch parliament.

Network Slicing

The document released by 17 telecom companies on 6. July 2016 as “5G Manifesto” claims that BEREC’s Guidelines are ‘excessively prescriptive’, as they ignore the fundamental agility and elastic nature of 5G Network Slicing to adapt in real time to changes in end-user / application and traffic demand and would hamper the exploitation of 5G.

“In this context we must highlight the danger of restrictive Net Neutrality rules, in the context of 5G technologies, business applications and beyond. 5G introduces the concept of “Network Slicing” to accommodate a wide-variety of industry verticals’ business models on a common platform, at scale and with services guarantees.

We dispute this claim, and argue that 5G can be deployed effectively under the first draft of BEREC’s guidelines, as well as under the guidelines described in our Recommendation submitted with European Digital Rights together with 7 other organisations. This can be proven with the announcement from Verizon to roll out 5G in the USA under the recently court-affirmed net neutrality rules of the FCC Open Internet order. FCC open Internet access rules give precedence to application agnostic traffic management measures over class-based traffic management measures and the FCC rules don’t have a specific exception for specialised services which would go beyond the specialised service provisions in the BEREC draft guidelines.

On a technical note it is important to highlight that 5G is in no way dependent on technologies like “network slicing”, which as specified by Ericsson’s white paper, as an addition to 5G specification:

“The concept of network slices is not a new one; a VPN, for example, is a basic version of a network slice.”

Furthermore, it should be noted that “network slicing” can be implemented in a user-controlled, application-agnostic manner. Under this approach, end-users (including CAPs) would be free to determine for themselves which ‘network slice’ to utilize, based on the QoS-characteristics they desire. This method can ‘adapt in real time to changes in end-user / application and traffic demand’ - as the 5G Manifesto proposes - by letting end-users and applications determine their QoS requirements for themselves. Therefore, so long as these network slices are defined and made accessible in an ‘application-agnostic’ manner, based on objective QoS requirements, they could qualify as ‘reasonable measures’ for the purposes of Article 3(3) second subparagraph. Similarly, specialised services can, under the Regulation and the current BEREC draft guidelines, utilise “network slicing” if they do not deteriorate the availability and general quality of internet access services and if the optimisation provided by “network slicing” is objectively necessary. We provide these comments as general remarks since the 5G Manifesto fails to point out which parts of the BEREC Guidelines are “excessively prescriptive”.

We would also take this opportunity to make a factual correction to the Manifesto.
The 5G manifesto claims that ‘A fundamental enhancement brought by 5G is the possibility to deliver virtual “network slices” offering different capabilities according to specialised needs.”
The claim that network slicing is an enhancement ‘brought by 5G’ is inaccurate, since network slicing can also be achieved in other networks such as current specialised networks (via Network Functions Virtualisation (NFV) and Software Defined Networks (SDN)). It should therefore be understood that legal restrictions on the use of network slicing do not constitute legal restrictions on the rollout of 5G networks as such.

According to the Telecom Single Market Regulation it is important to note that the legislator has not foreseen an exception for 5G and although the Commission was already talking about 5G at the time it introduced this legislation, it chose not to create a technologically specific mandate for 5G in any provision of the Regulation. To the contrary, the legislation is completely neutral towards network

technologies and only differentiates between fixed and mobile networks. Therefore, the BEREC implementation guidelines should not introduce technologically specific provisions, particularly when they run contrary to the Regulation (Recital 2).

Infrastructure investment

The Manifesto claims that BEREC's first draft of the Guidelines will lead to delayed investment in infrastructure rollout, since it is too restrictive.

We note that strong net neutrality rules - such as those outlined in our Recommendations - will actually increase incentives to invest in network infrastructure. Firstly, invasive, application-specific forms of traffic management, can allow ISPs to delay necessary upgrades to their infrastructure. Secondly, application-specific zero-rating and price differentiation can distort IAS markets by tying such services to specific CAPs, and reducing pressure to compete on the IAS' 'core business' of bandwidth & price. Thirdly, if technical or economic discrimination is allowed to grant certain CAPs priority in terms of service quality (via specialised services) or exclusion from data cap allowances, the incentive for ISPs to expand network capacity actually decreases, because scarcity of network resources is a precondition for the monetization of this type of vertical integration.

In this context it is important to highlight past experience with the argument of the telecom industry that net neutrality safeguards would hinder their incentive to invest in their network infrastructure. We know from the debate in the USA around the FCC's proposed net neutrality reform in which the industry claimed this would impact investment in network infrastructure and in 5G rollout in particular. However, almost one year after these rules were implemented, there has been an increase in network investment by the majority of ISPs in the USA: "network investment (and not spending on set-top boxes) at many of these ISPs has been higher following the FCC's February 2015 reclassification". More so, Verizon and other US telecoms operators recently announced major investments in 5G rollout.

In short, strong net neutrality rules such as those proposed in our Recommendation to BEREC will not retard investment in 5G infrastructure. The Manifesto's claims to the contrary have no basis in theory or in empirical fact.

Monetisation of the internet value chain

The 5G Manifesto argues internet business models that are based on vertical integration and CAPs subsidizing the returns of ISPs.

"It is paramount to ensure 5G monetisation to drive investments. Monetisation can take place across the entire value chain with end-users, service providers and industry verticals in order to ensure fair returns, speed up adoption by end-users and ensure consumers are not alone in picking up the bill for the innovation that will help the business cases of the service providers. Operators should also be free to mix and manage different technology generations, mobile or otherwise, that are enabling 5G mobile technology to serve their customers optimally."

At the outset, we acknowledge that the Regulation is relatively flexible as regards the monetisation of specialised services - as distinct and separate services from Internet Access Services - along the value chain of end-users, service providers and industry verticals.

However, to allow providers of Internet Access Service to monetise the entire value chain of the Internet would be inimical to the concept of net neutrality, which involves a clear separation between content and conduit to avoid harmful discrimination. It is crucial that providers of IAS are not permitted to impose charges on CAPs for privileged treatment of their traffic (e.g. for traffic prioritization, or zero-rating and other data pricing differentiation). The alternative would be turning the internet into a two-sided market, where ISPs can extract value from both consumers and online service providers - which is precisely what net neutrality and the telecom single market regulation according to Recital 1, 3 and 6 are intended to avoid through clear rules on non-discrimination. Such pricing practices from ISPs would throw up barriers to entry for new online services, thereby harming competition, innovation and diversity online. It would be in clear contradiction to the letter and spirit of the Regulation and Continued development of 'the engine for innovation'.

Furthermore, the Manifesto is baseless in its claim that vertical monetisation of the internet value chain will 'ensure consumers are not alone in picking up the bill for the innovation that will help the business cases of the service providers.' Any additional charges imposed at earlier stages in the value chain by ISPs on content providers, service providers and hardware providers can still be reflected in increased costs for consumers. The Manifesto does not provide any evidence to the contrary, and its signers certainly make no promises about not raising end-user IAS rates.
In light of the above, BEREC should reject attempts by ISPs to turn internet access into a double-sided market where ISPs can charge CAPs for access to their subscribers. As the Regulation intended in Article 3(5), such vertically integrated monetisation must only be permitted for specialised services because traffic management according to Article 3(3) subparagraph 2 cannot be based on commercial considerations.

This means that any form of paid privileges, including prioritisation of traffic and data pricing differentiation such as zero-rating, should be prohibited on IAS and furthermore that the provision of SpS should not be to the detriment of IAS bandwidth or quality, as outlined in our Policy Analysis Perhaps closer to the Industry's true motivation for supporting weaker net neutrality rules; it allows them to raise profits by taxing participants in the Internet ecosystem. It's no secret that big telecoms worldwide have suffered "Google envy" for some years now, in which they shun their designation as mere network providers (aka critical infrastructure) and want desperately to play in the often very lucrative digital content space.

The regulation is clear in Recital 2 that it has to be applied according to the 'principle of technological neutrality'. Therefore there is no legal ground to argue for an application of the regulation which is specific to 5G.

On the investment argument we want to add that notwithstanding the differences in the network investment situation in the USA and EU, it is important to note that Verizon starts the 5G rollout one year earlier already in 2017.

Legal certainty

The Manifesto also claims that strong net neutrality rules will create uncertainty and therefore make the industry risk-averse.

"The EU and Member States must reconcile the need for Open Internet with pragmatic rules that foster innovation. The telecom Industry warns that the current Net Neutrality guidelines, as put forward by BEREC, create significant uncertainties around 5G return on investment. Investments are therefore likely to be delayed unless regulators take a positive stance on innovation and stick to it."

As traditional telecoms, the industry is already risk-averse. That is by design precisely because communications networks are critical infrastructure. We can all agree that the Guidelines must be as clear as possible - as repeatedly emphasised in our Policy Analysis. For instance, introducing bright-line rules on prohibited types of commercial practices such as application-based price discrimination - as opposed to relegating such practices to case-by-case assessments - creates far more certainty for all internet stakeholders. Clear distinction between specialised services and internet-based services, which eliminates any potential confusion between these groups, is also a crucial clarification.

We also note that the Manifesto's call for certainty also contradicts its critique that the Guidelines are 'excessively prescriptive'. Clear specifications of what is permitted and prohibited are precisely what is necessary to allow for legal certainty, a healthy and sustainable climate for investments, low regulatory costs and through the harmonized implementation the fulfilment of the digital single market. Open norms and case-by-case approaches achieve the opposite effect.

We see that regulation that is nebulous about net neutrality creates uncertainty for the growth and vitality of the internet today. Given that development of technologies that will support 5G are still ongoing, clear net neutrality rules governing the openness of Internet access services are the only thing that can protect all stakeholders on the internet growing into this uncertain future. It is clear that for 5G to serve the functions of the "engine of innovation" any developments must support fundamental rights of all internet stakeholders which are enshrined in the telecom single market regulation and therefore should be enshrined in comprehensive BEREC guidelines.

Conclusion

This comment has considered and refuted central contention that weaker net neutrality rules are necessary to facilitate the rollout of 5G. Taking the strong net neutrality rules put forward in our Recommendations as a starting point, the underlying arguments are revealed to be meritless under closer scrutiny:

Network slicing can be rolled out effectively in net neutrality-compatible ways, either as a user-controlled, reasonable traffic management measure or in the form of a specialised service. The positive 5G developments in the USA after 2015 are proof of that. Investment in network rollout is not discernibly affected by net neutrality rules, which are instead likely to have beneficial effects for competition in IAS infrastructure, because they offer a predictable market situation, instead of dangerous experiments with untested vertically-integrated business models, which have to be rejected because of their harmful effects contrary to the goal of the Regulation. Regarding monetisation, the Manifesto does not distinguish adequately between Specialised Services, where the entire value chain for specialised services can be permitted, while such monetisation of Internet Access Service is rightfully permitted by the legislator.

With all these claims deflated, the 5 Manifesto leaves but one rationale for the weakening of net neutrality rules: protecting the return on investment for telecoms operators for a network rollout which will occur any way.

Additional remark on the Dutch government's position on net neutrality

We would also add that we endorse the following position of the Minister of Economic Affairs of the Netherlands regarding the regulation of zero-rating, which he outlines in a letter to the Dutch senate on 1 July 2016. For your convenience, we offer our unofficial translation of the relevant passage:

'*It is correct that BEREC's draft Guidelines leave some room for price discrimination, especially for zero-rating. In the opinion of the Dutch government, BEREC is hereby unduly ignoring the explicit prohibition of discrimination in the provision of internet access services laid down in Article 3(3) first paragraph. Of course, BEREC is not permitted to divert from the Regulation in their (non-binding) Guidelines. In order to remove all uncertainty regarding price discrimination in the application of the Regulation, and due to the great interest in a prohibition of price discrimination in practice, the legislative proposal explicitly determines that price discrimination is not permitted. BEREC's interpretation could lead to a situation where differences emerge amongst the Member States in the application of the net neutrality rules. Only a quote from the European Court of Justice can provide (definitive) clarity concerning this issue.'*

At a later point in the text, the Minister adds that the bright-line prohibition of application-based zero-rating is *'merely making explicit a rule which already follows from the Regulation'.*

In addition to this, we note that application-based differentiation would also be prohibited under Article 3(1) and 3(2) of the Regulation as a limitation of end-users rights', as outlined in our Policy Analysis. Furthermore, we emphasize the Minister's point that a case-by-case approach to price differentiation (in his words: 'leaving some room price discrimination') is likely to result in legal divergence between Member States, thus contravening the Regulation's purpose of creating 'common rules at the Union level to ensure the openness of the internet and to avoid fragmentation of the internal market resulting from measures adopted by individual Member States' (Recital 3, last sentence), and the Guidelines' aim to 'contribute to the consistent application of the Regulation, thereby contributing to regulatory certainty for stakeholders' (Paragraph 1). The clear position of the Dutch government on this issue already guarantees that a more permissive approach to price discrimination from other Member States will directly result in legal divergences in the internal market, thereby contributing the need for a bright-line rule such as the above.

Below is our unofficial translation of the Dutch prohibition of application-based price differentiation, which we propose as a best practice on this issue for BEREC's guidelines:

'Providers of internet access services shall not make the height of rates dependent on the services and applications which are offered or used through this service.'[298]

11.4. Appendix 4

Four Days to Save the Open Internet in Europe: An Open Letter
Web Foundation · July 14, 2016

The post below is an open letter to European citizens, lawmakers and regulators, from our founder and Web inventor Sir Tim Berners-Lee, Professor Barbara van Schewick, and Professor Larry Lessig. Join the conversation in the comments below or on Twitter using #savetheinternet or #netneutrality.

We have four days to save the open Internet in Europe

By Sir Tim Berners-Lee, Professor Lawrence Lessig, and Professor Barbara van Schewick

Network neutrality for hundreds of millions of Europeans is within our grasp. Securing this is essential to preserve the open Internet as a driver for economic growth and social progress.

[298] (Arbeitskreis Vorratsdaten Österreich - Austria, 2016)

But the public needs to tell regulators ***now*** to strengthen safeguards, and not cave in to telecommunications carriers' tactics.

We are so close. In October, the European Parliament voted on network neutrality rules for the European Union. Now regulators are writing guidelines to determine how the law will be applied in practice. These guidelines could secure net neutrality in Europe – if regulators use them to close potential loopholes in the law.

Telecom companies know this. And so they are lobbying hard to get regulators to adopt weak guidelines that would benefit their businesses over the public interest. They have connections to the highest levels of EU governments, a well-oiled lobbying machine, and lots of money to pay lawyers and experts to write extensive comments. Their latest move came last Wednesday, when the 17 largest telecom companies in Europe threatened *not* to invest in the next generation of 5G mobile networks unless regulators water down the guidelines.

We – the ordinary users of the Internet – don't have expensive lobbyists. But we have millions of people – everyday Europeans, startups, investors, small businesses, activists, NGOs, bloggers, independent artists – who have experienced the power of the open Internet first hand and want to protect it.

That's where you come in. For a few more days, ***until July 18***, the public has an opportunity to comment on the guidelines and convince regulators to close loopholes and protect the open Internet in Europe.

The Internet has become the critical infrastructure of our time – for our daily life, for our economy, for our democracy. Strong guidelines will protect the future of competition, innovation, and creative expression in Europe, enhancing Europe's ability to lead in the digital economy. They will ensure that every European, no matter the color of their skin or the size of their wallets, has an equal chance to innovate, compete, speak, organize, and connect online.

If we speak up now, we can convince regulators to do the right thing.

Here's what you can do to help.

Speak Up:

Before July 18th, 14:00 CEST, visit www.savenetneutrality.eu or www.savetheinternet.eu to participate in the public consultation by submitting a comment in support of strong net neutrality rules.

Spread the Word:

Share this post and others on Facebook, Twitter, or anywhere else, using #savetheinternet and/or #netneutrality.

Talk with your friends, colleagues, and family and ask them to take action.

If you are a blogger or journalist, write about what is going on.

If you are an entrepreneur or investor, review and sign the entrepreneurs' letter.

If you have a blog or a website, protest Internet slow lanes by adding a widget to your site.

There are four areas that regulators need to get right to secure meaningful net neutrality in Europe.

1. ***BAN FAST LANES: Regulators need to close a loophole that could allow carriers to offer special "fast lanes" to normal websites and applications for a fee.***

The telecom companies that connect us to the Internet want the power to charge websites extra fees to reach people faster. In a world where some websites can pay telcos to be in the "fast lane," anyone who can't afford the extra fees – start-ups, small businesses, bloggers, artists, activists, and everyday Europeans – will be left behind in the slow lane. Innovation and economic growth will suffer, and Europeans will be left with an Internet that is less vibrant, less diverse, and less useful.

Europe's net neutrality law stops telecom carriers from creating fast lanes online. But it contains an exception for "specialized services" that cannot work on the regular Internet. Carriers want to squeeze as much of a pay-to-play business model as they can into this exception, turning it into a giant loophole. Their stated goal: A world in which any application can buy a fast lane – not just those that could not function without it.

Regulators need to close this loophole by clarifying that the "specialized services" exception cannot be used to create fast lanes for normal Internet content. And they should regularly review what qualifies as a specialized service – remember that in the not too distant past, everyday services like web-based email or online video would have been seen as a specialized service!

2. ***BAN ZERO-RATING: Regulators need to ban harmful forms of zero-rating.***

Carriers want to be able to exempt certain favored applications from users' monthly data caps, a practice called "zero-rating".

Like fast lanes, zero-rating lets carriers pick winners and losers by making certain apps more attractive than others. And like fast lanes, zero-rating hurts users, innovation, competition, and creative expression. In advanced economies like those in the European Union, there is no argument for zero-rating as a potential onramp to the Internet for first-time users.

The draft guidelines acknowledge that zero-rating can be harmful, but they leave it to national regulators to evaluate zero-rating plans on a case-by-case basis. Letting national regulators address zero-rating case-by-case disadvantages Internet users, start-ups, and small businesses that do not have the time or resources to defend themselves against discriminatory zero-rating before 28 different regulators.

The guidelines need a comprehensive, Europe-wide ban on harmful forms of zero-rating.

3. ***BAN DISCRIMINATION: Regulators need to prevent carriers from discriminating among classes of traffic to manage their networks.***

Carriers would like to define classes of traffic to be sped up or slowed down, even in the absence of congestion. They say this will let them offer better quality Internet access. But

class-based traffic management lets carriers discriminate against services at will. It allows carriers to distort competition, stifle innovation, and hurt users and providers who encrypt by putting all encrypted traffic in the slow lane.

The draft guidelines make clear that class-based traffic management can only be used as a last resort during exceptional or temporary congestion if less discriminatory methods cannot solve the problem. This is good, and ensures that the Internet remains a level playing field even during times of severe congestion.

But the guidelines are less clear for traffic management in the absence of congestion. This ambiguity could be misused as a loophole to allow carriers to discriminate in the name of addressing problems admittedly less severe than congestion, where discrimination can only be used as a last resort.

The draft guidelines should clarify that class-based traffic management can be used only if less discriminatory, application-agnostic methods cannot solve the problem, regardless of whether there is congestion or not.

4. **PROTECT INTERNET ACCESS: Regulators need to prohibit new "specialized" services from taking over bandwidth that people bought to access the Internet.**

Carriers want to offer new kinds of "specialized" services that need special handling not available on the Internet. People would buy these services separately, in addition to their normal Internet access. Carriers find these services attractive because they can charge the providers of these services extra fees for special treatment.

The draft guidelines allow these specialized services to take away bandwidth from people's Internet connection. In essence, telecom companies would take bandwidth that a customer bought to connect to the Internet and use it for a specialized service that the same person (and, potentially, the providers of these services) is paying for separately. That means people signing up for a specialized service would pay twice for the same bandwidth, and would have less bandwidth available for the websites and Internet apps of their choice. This harms people signing up for a specialized service, and makes it harder for Internet applications, content, and services to reach consumers.

The current version of the guidelines directly contradicts the law, which requires that specialized services be offered in addition to access to the Internet and must not reduce the quality of normal Internet access. Regulators need to correct the guidelines.

. . .

Telecom regulators can still protect net neutrality in Europe – if they make the key changes described above. We urge regulators to make these changes. And we urge you to contact those regulators before July 18th and let them know the public supports strong network neutrality guidelines.

We have four days to save the open Internet in Europe. Let's use them.

Take action before July 18th, 14:00 CEST here:

www.savenetneutrality.eu

www.savetheinternet.eu.

Sir Tim Berners-Lee, inventor of the World Wide Web, and founding director of the World Wide Web Foundation

Professor Lawrence Lessig, author of "Code and Other Laws of Cyberspace" and Professor of Law, Harvard University

Professor Barbara van Schewick, author of "Internet Architecture and Innovation" and Professor of Law and (by courtesy) Electrical Engineering, Stanford University[299]

11.5. Appendix 5

Freedom of Expression and the Telecommunications and Internet Access Sector. Submission of ARTICLE 19: Global Campaign for Free Expression.

[…]
5G technologies and respect for human rights: ARTICLE 19 suggests that the Special Rapporteur closely monitor the developments surrounding 5G, and advocates for telcos to deploy and develop it in full respect of human rights. 5G is the next generation of mobile internet connection (tentatively scheduled for rollout in 2020), which will enable faster Internet connections and more portability. It is seen not merely as an evolution of mobile networks, but as a new technology that will allow for entirely new capabilities in a number of fields: it will impact Internet speed, bandwidth, power consumption for devices, and human rights It promises a major shift in the way radio spectrum is allocated and used, allowing for a hugely expanded "Internet of Things", as well as a dramatic improvement in the speed of content. At the same time, it is unclear what standards and protocols this new connectivity will use, how much it will cost, or what infrastructure will be needed to implement it. How these decisions are made will drive the impact of 5G on human rights – in particular, the right to freedom of expression and access to information. 5G could even replace wired Internet, at least in urban centers: this would give even more power to telcos, centralizing power to one stakeholder group and potentially creating a chokehold of control over the Internet. 5G also poses major risks to human rights. The principle of net neutrality may prove to be genuinely threatened by 5G, as the diversity of needs to be met by 5G networks may create the space for an argument in favor of developing 'fast lanes' for certain types of content and special treatment of some data packets, or even 'bandwidth throttling'. This violation of net neutrality poses more of a danger than just fast streams and special treatment. It might result in the fragmentation of the Internet itself: risking the loss of the benefits of the network in terms of freedom of expression and freedom to receive information.

In July 2016, some of the world's largest telecoms companies, including BT, Nokia, Orange, and Vodafone, signed a "5G Manifesto", aiming to drive forward the development of the next-generation network. This manifesto has been strongly criticized (the register), as it calls into question the necessity of current net neutrality standards in Europe. The companies claim that the guidelines may limit innovation, warning that the current European net neutrality

[299] (Berners-Lee, Lessig, & van Schewick, 2016)

guidelines “create significant uncertainties around 5G’s potential for return on investment.” Article 19 suggests that the Special Rapporteur highlight the need for respecting human rights in all 5G discussions, and supports the creation of a coordinated and inclusive action plan on standards, spectrum, and infrastructure development in the deployment of 5G technologies. […][300]

11.6. Appendix 6

EU Operators‘ 5G manifesto misses the point

Never before have events coincided so neatly to demonstrate the gap between mobile operators’ thinking about 5G, and how future networks will really be deployed for disruptive effect. While Europe’s leading MNOs were presenting a backwards-looking "5G Manifesto" to the European Commission, veiling pleas for net neutrality special treatment with promises of 5G build-out, Facebook was announcing an open source approach to the mobile network, OpenCellular – part of a wider trend which could rip apart the network cost base and the operators’ and 3GPP vendors’ cozy world.

Various developments last week highlighted how MNOs are stuck in their traditional thought processes, to potentially fatal effect. This is clear in many critical areas – investment/return on investment (ROI) models; pricing of new services; architecture; and their actual role in the value chain.

So the European operators’ "5G Manifesto" was not a vision of a whole new way of building networks and delivering services. It was basically a negotiating ploy to mitigate net neutrality rules. The central argument was that strict neutrality rules, if applied to MNOs, would limit their ability or motivation to invest in 5G. This reflected several key preoccupations of the MNOs:

- Can they secure return on investment on 5G capacity investments when much of the service revenue goes to over-the-top providers?
- Can they avoid being just bit-pipes for those providers?
- How can they maintain their connection or data fees in the IoT world?

Operators are missing the point of 5G on many levels

All these are the wrong questions when it comes to the next generation of mobile internet services, and they explain why there is deep mistrust of the MNOs in many of the vertical sectors which hope to harness 5G to become always-connected. Senior players in markets like transport, utilities and manufacturing believe that mobile operators remain fixated on mobile broadband data and will not prioritize services which require different network behaviour (high availability, but small amounts of data, for instance), or different methods of charging.

In reality, those three questions are already being answered, by a new set of companies which are coming from the IT and over-the-top worlds into the heart of the mobile network. As the European operators were rehashing their 4G concerns under a 5G banner, Facebook

[300] (Article 19, 2016)

was showing off its OpenCellular open source network concept; Lenovo was unveiling its OpenPlatform for virtualized telco systems; and AWS was acknowledging that cloud services are already commoditised – but not sounding dismayed about that.

These are the companies which will really drive the next generation of mobile broadband and bring it to the unserved masses and the sidelined vertical sectors. Regardless of what the 3GPP decides about air interfaces, these broader architectures, which turn the mobile network into an easily deployable, commoditized IT platform, are the real revolution. So far, very few MNOs are really driving these changes, despite lip service to Cloud-RAN. Even where they are investing in radical architectures, they are stuck in old approaches to ROI on those build-outs, erecting garden walls to keep out unlicensed spectrum operators, cablecos or OTT providers; talking about NB-IoT service fees based on similar models to those for consumers; worrying about neutrality.

Meanwhile, the barbarians are at the gates already. The over-the-top giants have turned into drivers of new infrastructure. Google, Amazon and Facebook know all about building multi-billion dollar platforms very cost-effectively, and using them to enable a host of other providers. They will now turn that expertise to mobile networks, as those evolve into IT service platforms thanks to developments like Mobile Edge Computing (MEC) and network slicing – the real cornerstones of 5G, not a new evolution of OFDM.

AWS's Brendan Bouffler, head of the Amazon unit's scientific computing team, put his finger on the button in a recent interview. He said companies like AWS had to accept that their services were commoditised and customer loyalty could not be assumed, but this made the business one of constant innovation in infrastructure efficiency and in service quality. "We're constantly holding our feet to the fire and forcing ourselves to innovate, that's how we keep customers," he said – a motto which few MNOs adopt as they plead for EU protection against the OTT providers which seek to share in the benefits of their networks.

They are fighting desperately against the tide which will carry them to the world of being a utility, in the same way as gas, electricity and transport operators have become – and in many cases, broadband providers. They have resisted the multi-operator technologies which would have made their networks so much more attractive to high value enterprise partners, yet the real 5G potential for the major cellular network operators must lie in a shift from retail to wholesale.

Network slicing is the great 5G disruptor. It creates the ability to dial up virtual, dedicated slices of the network, on-demand, for a particular customer or application, optimized for that usage – and dial them down again when no longer required. This flexible approach could revolutionize the rigid MVNO deals and allow hundreds of service providers and enterprises to use the 5G network, paying just for what they use and making a host of specialized services cost-effective for the first time.

Some MNOs get this – SK Telecom, always in the vanguard of innovation, last week described a software-defined infrastructure (SDTI) project with Ericsson to support slicing (see below). This shows two old guard 3GPP players adapting to the kind of norms Facebook and Google are establishing, but SK Telecom remains in a small minority. Yet if the MNOs do not invest in 5G and then use those networks to enable new services and value chains,

others will do it for them, harnessing unlicensed and dynamically shared spectrum, and technologies from the IT and IEEE worlds, to create an alternative 5G world.

The 5G Manifesto

The 5G Manifesto, presented to Digital Economy Commissioner Gunther Oettinger last week by a group of 17 leading operators and vendors, does not raise high hopes that the new-look "5G operator" is going to emerge in Europe.

Ostensibly, the Manifesto is a roadmap to accelerate testing and deployment of 5G in order to get new services to citizens and to put Europe back in the cellular driving seat. The operators – which include Deutsche Telekom, BT, Telecom Italia, Vodafone, Orange, Telefonica and others, as well as the large vendors Ericsson and Nokia – would commit to cooperating on multi-country trials from next year; to mounting user trials as soon as the standards are finalised in 2018; and to deploy a commercial network in at least one city per EU country by 2020.

On the reasonable side, it calls for coordinated action on standards, spectrum, network deployment and ecosystem development across different verticals. But beyond that, it descends into the same kind of lobbying the operators have been doing for a decade.

The European MNOs always tend to get a rush to the head when they try to work collectively, but this Manifesto is particularly wrong-headed.

Three weaknesses in the MNOs' position

One, it does not reflect the real objectives of most of the operators, whose priority – outside the showcase 5G roll-outs to keep board directors and PR advisers happy – is to continue to squeeze more capacity, revenues and ROI from LTE for as long as possible. Deutsche Telekom itself said this week that it needed at least a decade of LTE evolution and coexistence after 5G appears, echoing a similar statement by 5G trailblazer NTT Docomo of Japan.

Two, the motivations are not as pure as the top line public statements suggest. There are significant strings attached to the operators' commitments – not just the call for more spectrum and lighter touch regulation, but (the real agenda) demands for concessions on net neutrality. The draft neutrality guidelines are "excessively prescriptive", warned the MNOs, and would be a barrier to 5G investment and the provision of vertical market services. The operators have legitimate points, especially when it comes to offering mission critical services to enterprises and public agencies, which will require priority.

And three, the thinly veiled bribes in the Manifesto just confirmed that, when thinking about 5G, most MNOs remain preoccupied with their traditional concerns - protecting their exclusive network and spectrum rights, competing in the same old way.

The details of the proposal revolve around the "5G Action Plan" - a timetable for testing and deploying 5G, which would be welcome if it were related to market need rather than net neutrality haggling. The operators say they would start with technology trials, using pre-standard prototypes, by multi-country consortia in 2017; then kick off user trials once the

3GPP standards are finalized in 2018. The aim would be to have live 5G services running in at least one city per EU country by 2020.

There is a list of caveats attached to this roadmap. One, the industry wants the EU's support to ensure appropriate spectrum is available, with harmonized licensing of the 700 MHz, 3.4-3.8 GHz and higher frequency bands above 24 GHz, across the EU by 2020. That would necessitate a unified EU position at the World Radio-communication Conference in 2019.

Two, the operators want financial support for large scale 5G demonstrations, which they say would encourage vertical industries to get involved in trials. Those verticals may feel like poor relations in a 5G process which is so driven by the telecoms vertical itself, but their digital transformation is critical to the EU's vision of the socio-economic impact of 5G. The Manifesto suggests that existing EU funding mechanisms could be used to provide grants totalling €500m to €1bn, in addition to proposing a new 5G venture capital fund, to support startups developing 5G technologies and services.

Three, the operators think the Action Plan is dependent on the EU taking a light regulatory touch, to make it easier for essential enablers like spectrum, fibre and small cell sites to be made available. The Manifesto echoes similar demands by operators in the past, as well as their trade bodies GSMA and ETNO, to reform the regulatory framework. The general theme is that the EU should keep its regulatory attention mainly on encouraging competition in retail services, while the rules surrounding sites and infrastructure should be relaxed in order to ease and accelerate network deployments, and support co-investment and network sharing agreements among MNOs.

This last is almost inevitable if there is to be a next wave of infrastructure building, before most operators have seen the return on their initial LTE rollouts. But in lobbying for the kind of sharing which will reduce upfront costs, operators are dangerously close to being turkeys voting for Christmas. Network sharing on a large scale is a natural first step to a wholesale-only, utility model, a massive bitpipe role which most MNOs are still resisting.

And in looking for new cost structures for 5G networks, sharing will not be radical enough – in reality, operators will be forced to adopt the commoditized, open source approach espoused by Facebook's TIP (Telecoms Infrastructure Project), and by Google and Amazon. That will ease their ROI burdens, but will push them into a supply chain which they no longer control.

While the first three caveats are not unreasonable, even though they betray worryingly old-fashioned thinking, the fourth really highlights how the MNOs have been left behind by modern thinking. They are not yet thinking like open internet players, even though internet access and services, and the IoT, are now their primary revenue drivers.

So they are making connections between infrastructure investment and direct monetization, which have long ago been broken in the non-mobile internet world.

NGMN proposes harmony on 5G roadmap

The heavily operator-driven NGMN (Next Generation Mobile Networks) alliance played an important role in crystallizing industry thinking about the requirements for 5G, when it

published its influential white paper in early 2015. Now it has outlined its work program for the next few years, a plan which dovetails nicely with a similar announcement from the Small Cell Forum, whose HetNet and virtualized RAN program also addresses the challenges of deploying modern networks immediately in LTE, while having a smooth path to 5G.

The NGMN aims to minimize regional differences in the progress to 5G, to improve economies of scale and reduce fragmentation. In particular, it is focusing on harmonized approaches to developing standard test methodologies and profiles, and to developing an overall 5G architecture.

According to NGMN's Phillip Deibert, in an interview with The Mobile Network (TMN), there are three main objectives for the NGMN's new work program:

- End-to-end architecture: The alliance plans to develop an end-to-end architecture paper to submit to the 3GPP. In other words, the standardization process must not just be global and driven by real operator needs, but it must extend beyond the air interface and the RAN, going even further than the 4G SAE (system architecture evolution).
- V2X: There will be a joint NGMN research initiative involving operators, vendors and the automotive industry. The team will work on technology evaluation of current and future options, security, regulatory aspects, spectrum and other items, with most of the work taking place in 2016-2017.
- Trial & Testing Initiative: The objective is to enable global collaboration in testing activities to support an efficient, successful and timely 5G technology and service introduction. Proof points (functional, performance, interoperability) for technology options and testing methodologies will be defined; technical options will be evaluated technologies will be compared and benchmarked against 3GPP and NGMN requirements; and new use cases will be trialled.

US counterparts recently failed, in getting significant special treatment in neutrality, because of the limited capacity of their spectrum and networks (at the same time that they argue to get their hands on the huge capacity of the millimetre wave bands).

Can neutrality live alongside slicing?

The EU and national regulators are still working on exact guidelines and interpretations of Europe's neutrality rules, even though these are already in place. The draft regulations are "excessively prescriptive", say the operators, and "could make telcos risk-averse" when it comes to 5G investment.

One of the points they raise seems very pertinent – will neutrality laws allow operators to offer specialised services for verticals, which may require priority treatment in terms of availability and reliability? Driverless cars and smart grids clearly require a different level of QoS from YouTube viewing, so this point is valid.

"We must highlight the danger of restrictive net neutrality rules, in the context of 5G technologies, business applications and beyond," the telcos wrote. "5G introduces the concept of Network Slicing to accommodate a wide variety of industry verticals' business models on a common platform, at scale and with services guarantees."

In fact, many lessons will be learned from how high quality services are being launched in licence-exempt spectrum, where Wi-Fi and LPWA networks are effectively supporting an early version of slicing, and are blurring the lines between open and closed, licensed-spectrum models.

And there is a growing body of opinion that slicing and neutrality, far from being contradictory, actual enable one another. Pure network slicing, based on virtualization and SDN, can place the decision about how the slices are deployed and optimised in the hands of the customer, not the operator.

TelecomTV points to a presentation last year, by Diego Lopez of Telefonica's R&D team, which showed a layered architecture that allows guaranteed QoS with truly dynamic resource allocation for slices. This would guarantee that every user application could request and receive the class of service it required – low latency for voice, high availability for cars, and so on – without the operator making any decisions about priorities.

That, of course, could raise yet more potential for disruption of the traditional business and revenue models, but MNOs cannot have it both ways – they can embrace new architectures which will enable them to generate new revenues, but they will have to accept that this will be a world where customers and OTT service providers will have the upper hand.

Not just operators, but the Digital Commissioner himself, will need to look to these new ways of delivering services, and ensure that neutrality is safeguarded while not itself becoming anachronistic by failing to support the huge range of services enabled by slicing and virtualization. The Manifesto will be one input to a public consultation which concluded on July 11 and to a series of high level meetings this week focused on neutrality and regulatory framework reform.

In welcoming the Manifesto, Oettinger largely ignored the lobbying aspects and focused on the draft Action Plan, saying: "5G is needed to move one gear up, and envisage a European continent where everything that can be connected will be connected to offer new products and services and improve our quality of life and our competitiveness. I very much welcome the 5G Manifesto and discussions today with the high level industry group. These will help us focus on the key levers to ensure European digital leadership in 5G. I will come forward with a 5G Action Plan in the autumn.[301]

[301] (Wireless Watch, 2016)

11.7. Appendix 7

11.7.1. Abstract English

In pursuing a federated European platformization, the failure of the EU's 5G policy was investigated. Based on an internet governance approach and the tools offered by cultural political economy, HMPA was used to investigate the development of European telecommunications policy in the past twenty years. Central findings were that despite there having been a politicization of the benefits of open networks, the impact of this politicization on the implementation of 5G was delimited by transnational European telecommunication companies. This was possible due to the contemporary configuration of the EU and its response to the financial crisis. Results were discussed concerning how they supplement the scientific project of studying the transformational process of platformization.

11.7.2. Abstract Deutsch

Geleitet vom Interesse an einer föderierten Europäischen Platformisierung wurde das Scheitern der Europäischen 5G Politik untersucht. Ausgehend von einem Internet-Governance Ansatz und Kultureller Politischen Ökonomie, wurde HMPA genutzt, um die Entwicklung Europäischer Telekommunikationspolitik in den letzten zwanzig Jahren zu untersuchen. Ergebnis war, dass die Auswirkungen einer stattgefundenen Politisierung der Vorteile offener Netzwerke durch transnationale Europäische Telekommunikationsfirmen begrenzt wurden. Möglich war dies aufgrund der gegenwärtigen Konfiguration der EU, sowie ihrer Krisenpolitik in den 2010er Jahren. Die Ergebnisse wurden hinsichtlich ihrer Relevanz für die Platformisierungsforschung diskutiert.

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