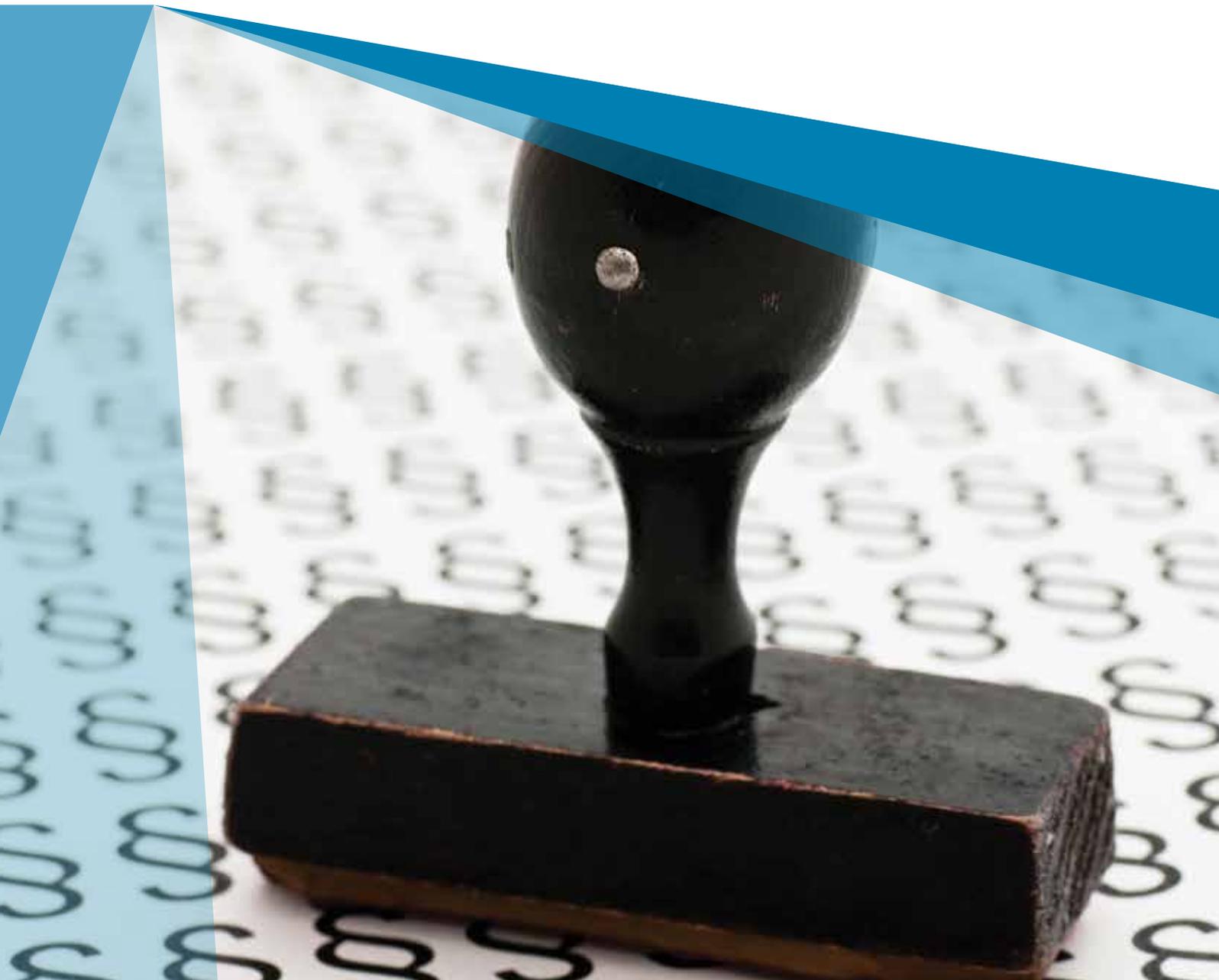


# MODERN TIMES

POLICYMAKING IN THE TELECOMMUNICATIONS  
INDUSTRY FOR THE DIGITAL AGE



# MODERN TIMES

## EXECUTIVE SUMMARY

Telecommunications operators are strongly affected by regulation in their ability to create value. Regulation influences the markets where they compete (e.g., signaling players with market dominance), the geographical boundaries of these markets (e.g., in Europe driving the advent of a unified market) and the relationships with other agents in the digital ecosystem (e.g., net neutrality).

Regulation and public policy in the telecommunications industry have their foundations in the microeconomic theory of equilibrium under static conditions. While it is arguable that this model was appropriate back in the 1990s when the industry was liberalized, the context in which telecommunications markets currently evolve is totally different. Today, telecommunications is one among many building blocks of the digital economy on the Internet, an ecosystem of linked agents in a permanent and accelerated process of change. The assumptions over which the regulation and public policy for the industry were built can no longer hold, and relying on them is at the serious risk of unintended consequences.

It is becoming urgent to define a new model for the public policies in the telecommunications industry, not only aimed at protecting consumers but also at fostering innovation, and able to unleash the wealth creation potential of the digital economy as well as to correct the less beneficial outcomes when they show up.

**Today, telecommunications is one among many building blocks of the digital economy on the Internet, an ecosystem of linked agents in a permanent and accelerated process of change.**

## CRITIQUING THE STATUS QUO

Regulation and public policy strongly influence the general evolution of the telecommunications industry and its economic performance. Such was the case in the past, when a specific regulatory framework led the opening of the former monopolies to compete, and such is the case nowadays, when telecommunications are a core element of the digital ecosystem and the digital economy.

Telecommunication companies are affected by regulation and public policy in three main dimensions:

- The dimension of the markets in which these companies compete, where different layers of public policies and regulation set rules for a varied range of topics, from competition to customer-privacy protection, including universal service obligations.
- The dimension that defines the geographical scope of the activity of telecommunication companies, especially relevant in Europe with the movements toward a unified market.
- The dimension across the value chain of the digital ecosystem as a whole, where relevant issues include the asymmetric regulatory conditions that apply for operators, on the one hand, and OTTs, on the other (despite offering similar services), or the debate about net neutrality.

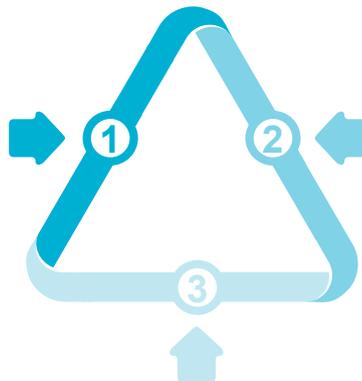
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## Exhibit 1: Regulation impact in the telecommunications industry

Telecommunications operators are affected by regulation in three dimensions

### Market dynamics

- Regulation and public policy generally influences competition in the markets, conditioning the overall economic returns of the operators...
- ...and contributing to shaping market structure and market innovation levels
- Examples can be seen in the consideration of **market dominance** or the criteria used to analyze **mergers** in the industry



### Geographical scope

- Regulation and public policy also affect operators by defining market boundaries
- Changes in these boundaries, like the ones that could come in the **European creation of a unified single market**, can drastically change the pattern of economic value creation in the industry

### Public policy in the digital ecosystem

- Public policy in the digital ecosystem is currently a hot topic, especially in the context of **the net neutrality debate**
- Another key topic is the **asymmetric treatment** operators currently receive from public policy compared with OTTs

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While the overall business environment has changed dramatically for telecommunication operators in the last 15 years, the basic foundations of the public policies and regulation building remain mostly the same. This brings up two questions: Should regulation and public policy be revised? And if the answer is “yes,” in what direction should this revision take place?

**Relevant issues include the asymmetric regulatory conditions that apply for operators, on the one hand, and OTTs, on the other (despite offering similar services), or the debate about net neutrality.**

## OLD TIMES, MODERN TIMES

The regulatory approach that has brought the industry from the moment it was liberalized to its current status is well known. Because telecommunications companies existed as monopolies, when the markets were opened to competition the transition had to be monitored and managed by regulators. The key concept in this approach was market power, understood as the set of circumstances that enable a given company to set anticompetitive conditions in the market, take the market away from competition and capture all wealth. Regulators identified markets within the telecommunications industry in which market power could be exerted and established rules for any agent potentially capable of exerting it.

The foundation of this approach is the neoclassical microeconomic theory of equilibrium. This theory is well suited for static systems or markets in which dynamic effects are not relevant compared with the steady state at which such systems supposedly arrive. Specifically: In such market models, disruption caused by innovation and technological change shouldn't be a determining factor in policymaking. To what extent are these premises relevant to the telecommunications industry?

Let's review some of the most significant changes the industry has gone through since its liberalization:

- Relentless development of access technology in fixed and mobile (fiber, 3G, LTE, etc.) providing higher throughput and diminishing costs
- A multiplication in the typologies of terminal equipment that are connected to these networks: computers, smartphones, tablets, wearables, connected appliances, cars, etc.
- New uses for these networks, which go beyond traditional person-to-person communication, such as information, entertainment or business
- Emergence of new business models, from the traditional subscription/pay-per-use model to advertising-based, or even collaborative ones
- Decoupling of services and applications from the networks
- Universal diffusion of usage, with billions of users all over the world

One statement in particular illustrates the events that have shaped the industry: The telecommunications sector has been subjected to permanent change in business models and technology. It is obvious that this amount of change cannot be handled by an approach that has a primary theoretical basis in static equilibrium.

**It is obvious that this amount of change cannot be handled by an approach that has a primary theoretical basis in static equilibrium.**

We can therefore conclude that current regulations and public policies governing the telecommunications industry are ill-prepared to nurture telecommunications in a digital economy.

## FOUNDATIONS FOR A NEW TIME

Some of the main traits of the digital economy that must be kept in mind when defining any kind of public policy or regulation on it are:

- The most relevant economic element in the digital economy is innovation and not market power. It is innovation that generates value, destroys value and makes value flow.<sup>1</sup> The digital economy is a system in constant flux, in which agents are always outside any kind of equilibrium.
- Innovation is responsible for maximizing consumer wealth in the midterm, not prices.<sup>2</sup>
- Both evidence and (increasingly) economic theory state that perfect competition is deleterious for innovation.<sup>3</sup> It follows that perfect competition shouldn't be a public policy objective in the digital economy.<sup>4</sup>

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1 The relevance of innovation as an economic factor is neither new nor strange to economic theory. Schumpeter signaled innovation and the innovation process, which he famously named as "creative destruction," the core of all the dynamics of capitalism.

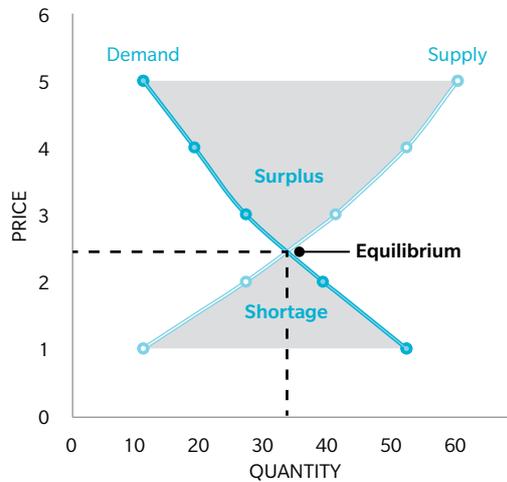
2 Again, Schumpeter stressed the dominance of innovation and innovation-based competition over price-based competition as the main driver of capitalism.

3 Peter Swann, "The Economics of Innovation", Edward Elgar Publishing, 2013

4 Innovation happens when the innovating agent has both resources and incentives to drive it. In perfect competition, the innovating agent would be strongly incentivized, but usually he or she would lack the required resources, since all surplus would have evaporated from marginal cost equaling price in the market.

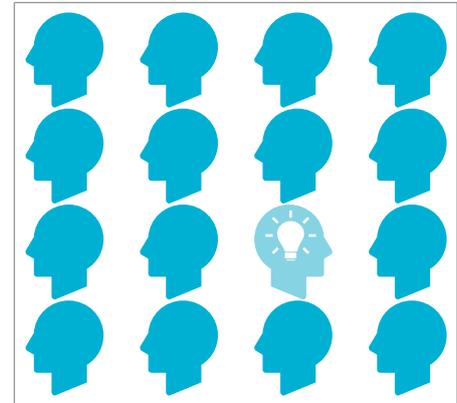
## Exhibit 2: Two different approaches: an example

As an example to illustrate the differences in approaches, what would the traditional and the innovation-based approaches to regulation consider a market failure?



### Classical equilibrium approach

Market failure would be any situation leading to a market structure distant from perfect competition, meaning one that offers goods or services at prices higher than marginal cost



### Innovation-based approach

Market failure would be any situation in which the pace of innovation was lower than the optimal one, leading to reduced wealth among consumers due to a total lack of access to new services and applications

## Both evidence and (increasingly) economic theory state that perfect competition is deleterious for innovation.

Those traits are not compatible with a theoretical approach based in neoclassical microeconomic theory. The right foundation to analyze, understand and set public policies for the digital economy must include the economics on innovation itself,<sup>5</sup> the evolutionary models of economic change<sup>6</sup> as well as the tradition that comes with the analysis of innovation in business organizations.<sup>7</sup>

We think that the situation of the telecommunications industry in Europe stems from the inadequacy of the current approach to public policy and regulation. Europe led the development of mobile communications for over two decades, but now lags behind North America and Asia on the deployment of new networks and services. In other words, the European innovation machine is stalling, and it is not a wild hypothesis to relate this fact to a set of public policies and regulatory rules aimed at preventing market power, rather than fostering innovation.

## The European innovation machine is stalling, and it is not a wild hypothesis to relate this fact to a set of public policies and regulatory rules aimed at preventing market power and not to at fostering innovation.

<sup>5</sup> Peter Swann, "The Economics of Innovation", Edward Elgar Publishing, 2013

<sup>6</sup> R.R. Nelson y S. G. Winter, "An Evolutionary Theory of Economic Change", The Belknap Press of Harvard University, 1982

<sup>7</sup> Geroski, P.A. and Markides, C., "Fast Seconds: How Smart Companies Bypass Radical Innovation to Enter and Dominate New Markets", Jossey-Bass, 2004

# THE WAY FORWARD

In our view, it is clear that, in the context of the digital economy, telecommunication public policy has to be revisited, and that a blank-sheet approach is required, where even the basic foundations have to be assessed and, most likely, redefined. Although doing so in detail requires discussion beyond what this article can deliver, we can propose several ideas to help initiate the process. These ideas are best broken down into two main guiding principles. Other topics essential to this discussion will be outlined here as well.

The two main guiding principles in establishing new foundations for public policy and regulation for the telecommunications industry are:

- 1. Covering the full ecosystem.** The reference economic and social system has to be the digital ecosystem as a whole: telecommunications operators and other agents in this ecosystem are so intertwined that the effects of any public policy cannot be easily isolated. Meanwhile, asymmetric regulation creates undesirable distortions in the behaviors of the agents and jeopardizes the preservation of some relevant values such as competition enforcement, customer protection or tax policy.
- 2. Protecting innovation.** The main objectives for public policy and regulation have to be, to an equal degree, consumer welfare and innovation. The current approach has been, at least in Europe, too biased toward securing consumer welfare with low prices, and, as discussed, this principle has harmed the market's ability to innovate.

**Asymmetric regulation creates undesirable distortions in the behaviors of the agents and jeopardizes the preservation of some relevant values such as competition enforcement, customer protection or tax policy.**

We believe the required revision has to be a comprehensive one. Specifically, it must cover, among others, the following core topics:

- **Market definition (role orientation).** Different roles in the digital value chain should be identified with an applicable framework, which may differ for each relevant role (i.e., from infrastructure players to different varieties of service providers). These frameworks need to be tailored to the role (not the player), establishing different obligations and rights depending on the diverse roles a single actor can play. For example, a telecommunications operator and an OTT offering the same services (playing the same role) have to be treated equally.
- **Geographic consistency.** While each policymaker or regulator can and should legislate only over its specific area of responsibility (national, European, etc.), these frameworks need to be consistent from a supranational perspective, taking into consideration the borderless nature of many digital services. Extensive coordination and guidelines efforts are required from coordination bodies. As a general principle, regulation should follow the borderless nature of the digital ecosystem agents.
- **Governance consistency.** Players in defined markets need stability in terms of the different regulations they are subject to and the regulatory bodies that will enforce these rules (whether ex ante or ex post). These regulatory bodies (including competition enforcement, consumer protection, technical regulations, etc.) need to be minimized. Ex ante and ex post regulation need to be applied consistently following a clear set of rules, as well as penalties and remedies for undesired behavior.

**These regulatory frameworks need to be tailored to the role (not the player), establishing different obligations and rights depending on the diverse roles a single actor can play.**

Finally, we think that there are a number of topics that require revision as well, since they form the conceptual foundations over which the whole public-policy framework is built. Without rethinking these topics (and thus evolving the current theoretical framework), we believe the needed revision will not achieve all of its goals. These fundamental topics are:

- **Business models and economic relationships** between the different agents; **role description** and characterization
- **Value chain quantification** and market share estimates per role
- **Definition of the ultimate goal of regulation** and, consequently, the desired behavior of agents and the dysfunctional risks to be corrected

In conclusion, we believe that a full revision of regulation and public policy for telecommunications operators in the digital economy is needed to ensure not only that consumers maximize their welfare, but that the industry unleashes all the innovation potential it embodies:

- **For regulators, policymakers, industry associations:** Set consistent definitions, goals, fact-based principles for policy creation and solid theoretical models to define a new regulatory framework that covers the above-mentioned objectives.
- **For industry players, whether telecommunications or service providers:** Understand the implications, likelihood and timing for such frameworks to be designed and implemented. Assess the impact on current business potential and craft a strategy that can adapt to potential changes. Actively participate in these discussions to ensure first-hand industry input to the definition process.

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