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Reassessing competition concerns in electronic communications markets ☆

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ABSTRACT

Central features of today's electronic communications markets are complementarities between the different layers of the value chain, substitutability between some applications, network effects in the provision of content and services, two-sided business models that partly involve indirect revenue generation (such as advertising and data profiling), and a patchwork of regulated and unregulated segments of the market. This complexity requires a fresh look at the market forces shaping the industry and a rethinking of market definitions and of the assessment of market power. This article presents the state of play in European electronic communication markets, with a particular emphasis on the recent development of 'over the tops'. We also use a stylised model of an electronic communications market to draw some central lessons from economic theory and to elaborate on market definition and market power.

1. Introduction

Local access networks of telecommunications and cable companies, as well as mobile broadband, have become a key infrastructure of the European and world economy, as they give users access to the Internet. In addition to communication services, content, on-line shopping requests, and advertising are delivered via the Internet to end-users. The Internet also allows users-citizens to interact in an unprecedented way and to offer user-generated content.

Content and service providers transfer their content and service to the end-user via a broadband network. Internet service providers (ISPs) should be seen as two-sided platforms as they provide an interface between content and service on one side of the market, and end-users on the other side. End users are attracted by ISPs offering content reliably; content providers are attracted by ISPs with a large end-user base. Through price- and non-price instruments the ISP can try to manage these cross-group external effects. The term 'cross-group external effects' was indeed coined to describe a situation where each side cares about participation and usage decisions on the other side. Thus, the market for connectivity products is characterised by cross-group external effects between two sides of the market.[1]

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[1] These external effects are network effects. The seminal paper on network effects is Katz and Shapiro (1985). For theoretical analyses of cross-group external effects, see in particular Caillaud and Jullien (2003), Rochet and Tirole (2003, 2006), and Armstrong (2006). While there are competing definitions as to what constitutes a two-sided platform, we use as distinguishing characteristics that cross-group external effects (at least in one direction) are present

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While ISPs can run a vertically integrated business model and make content offers themselves, end-users may and often do use an Internet connection to obtain audio, video, and other media from over-the-top content (OTT) players such as YouTube or Netflix. Often, OTTs can also be seen as two-sided platforms. This applies when they provide an interface between third-party content offers and end-users, or between advertisers and end-users. In some cases, there is a chain of more than two, two-sided platforms eventually linking advertisers to end-users. An example of this could be an advertiser posting an ad on an online media platform, which is accessed via a news aggregator such as Google news, through a mobile device using an ISP, by an end-user. End-users care about the availability of content and services, and content and service providers care about participation and usage by end-users. End-users may also care about the volume and features of advertising.

We observe varying degrees of competition, both at the connectivity provider layer, and at the content and service provider layer. In the case of the former, competition depends on the physical location (in particular, urban versus rural) and end-user segment (business versus residential). With respect to the latter, it depends on the type of application or market segments (e.g., digital music or travel services). The degree of competition depends on the specifics of the market, including how costly it is to switch to a competing offer (e.g., because personal data cannot be transferred easily) and how important participation and usage are by other potential participants. The degree of competition is thus affected by network effects and switching costs, both of which can be sources of market power.[2]

ISPs are often regulated. In particular, following regulatory market analyses, traditional telcos are subject to wholesale access obligations and have to offer connectivity products to virtual operators and operators that lack part of the network, typically the last mile. This regulation typically does not apply to cable operators raising the issue whether regulation is technologically neutral.

The central theme of this article is that infrastructure and service and content layers should be analysed from a two-sided market perspective taking into account complementarities and cross-group external effects. Standard instruments for market definition are not directly applicable to platform markets and require modification. Regulation of communication services typically neglects the effects of regulation on the behaviour of content and service providers. These effects are relevant even if the narrow focus of the regulator is on short-term consumer welfare. Due to possible market power issues at the content and service provider layer, neglecting the effect of regulation of connectivity products on that layer can turn out to be highly problematic. It risks that regulatory intervention is off the mark as the interaction due to complementarities and cross-group external effects is ignored. As is well known to a number of economists, ignoring the two-sided market nature may lead to fallacies in regulation and competition policy. This article is not the first to consider (broadband) ISPs in a broader context. Throughout the paper we provide specific references. Recent articles by Eisenach (2012) and Bauer (2014) cover similar grounds. The multitude of themes that emerge in electronic communications implies that the reader should not hope to find here a single framework incorporating and connecting the diverse scholarly contributions that have emerged in this area. What connects these themes in this paper, however, is that they all involve tangible trade-offs that are guided by recent contribution from economic theory. We take a closer look at some underlying economic mechanisms that determine market outcomes and provide detail on the role of OTTs in this context. We also derive some key 'lessons' that can be derived from the economic analysis as well as from empirical observations. These lessons are not meant to be definitive and final, rather they should be seen as working hypotheses, worthy of further critical review by the readers.

The article is organised as follows: Section 2 sets out to present the state of play in European electronic communication markets, with a particular emphasis on the recent development of OTTs. Section 3 describes a stylised model of an electronic communications market. Section 4 draws some central lessons from economic theory on the interaction of ISPs and OTTs. In the following two Sections 5 and 6, the article continues to elaborate on market definition and market power. Section 7 concludes.

2. State of play in electronic communications markets

2.1. A quick overview of electronic communications markets (ECMs)

Electronic communications markets are a key sector for the modern economy and society (see, e.g., Czernich, Falck, Kretschmer, & Wössmann, 2011; Greenstein & McDevitt, 2011). The Internet, together with local access networks, is a general-purpose technology. This is in contrast to the traditional telecommunication networks that allowed for the delivery of voice calls (and some data via fax) and traditional cable networks for live television and radio programs. On packet-switched networks, very different types of content are transported across the network.

(*footnote continued*)
and that these are intermediated by a platform (through price and possibly non-price instruments); for a similar definition, see, e.g. Rysman (2009). Whether or not a price is set on only one or on both sides is immaterial for this definition. For a recent useful discussion, see Hagiu and Wright (in press). For instance, Eisenach (2012) and Bauer (2014) acknowledge and elaborate on the relevance of the two-sided platform perspective for the analysis of electronic communications markets.

[2] However, whether an increase in switching costs results in higher or lower prices to end-users is in general not clear since there are countervailing forces between competition *in* the market and competition *for* the market. For an illustration that higher switching costs can be price decreasing, see Dube, Hitsch, and Rossi (2009); for a general analysis and a literature discussion, see Cabral (2014); for a broad survey of earlier literature, see Farrell and Klemperer (2007).