Mobile phone termination charges with asymmetric regulation

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Abstract We model competition between two unregulated mobile phone companies with price-elastic demand and less than full market coverage. We also assume that there is a regulated full-coverage fixed network. In order to induce stronger competition, mobile companies could have an incentive to raise their reciprocal mobile-to-mobile access charges above the marginal costs of termination. Stronger competition leads to an increase of the mobiles’ market shares, with the advantage that (genuine) network effects are strengthened. Therefore, ‘collusion’ may well be in line with social welfare.

Keywords Telecommunication · Mobile phones · Mobile-to-mobile access charges · Network effects

JEL Classification L41 · L96

1 Introduction

In Europe, the desire to foster competition led to an asymmetric treatment of the dominant fixed network providers on the one hand and mobile phone providers on the other hand. The initial EU framework which came into force 1998 entailed detailed regulations of retail prices and access and interconnection charges for the dominant fixed network operators. Mobile markets, however, were considered to be competitive
and therefore much less regulated. Whereas mobile retail prices were generally not regulated, regulation of mobile termination rates differed significantly between countries. While cost-based regulations were imposed in the UK, mobile termination charges were not regulated in Germany.\footnote{See Bomsel et al. (2003).} According to the new framework implemented in 2003, each mobile operator has significant market power with respect to call termination on its own network and should thus be subject to regulation. However, the specific implementation of the new framework differed significantly between countries and asymmetric regulation vis-a-vis fixed network operators continues to exist.\footnote{For a survey on the actual situation in Europe see European Regulators Group (2007).} This is also true for the US where mobile operators are generally free to negotiate termination rates as long as the negotiated rate is symmetric. In addition, fixed incumbent operators are typically required to set cost-based termination rates.\footnote{Note, however, that in the US mobile operators rely on the receiving party pays principle which differs from the calling party pays principle adopted in Europe.}

This paper investigates the economic consequences of asymmetric regulation. In the light of the above, we assume for simplicity that mobile operators are not regulated at all. We analyze competition between two independent and unregulated mobile phone companies and a single fixed network operator which is subject to cost-based regulation with respect to consumer prices and termination rates. Moreover, we will assume that mobile-to-mobile access charges are reciprocal and determined by the common interests of the two mobile companies. That is, we assume bilateral bargaining with binding agreements. This is often assumed in the related literature and corresponds to the US case.

Another important asymmetry between fixed and mobile operators concerns market growth and potentials. Mobile operators, while already having a large market penetration in most countries, are still extending their overall consumer base. The fixed network, on the other hand, is slightly decreasing from a very high penetration rate. There are, however, reasons to expect that its consumer base will not deteriorate even in the long run. The fixed network (fibre optics in the future) will continue to outpace transfer rates of wireless networks in data transfer. Since an increasing number of consumers—firms and households alike—values very fast internet access, they will keep their fixed network connections.

In the model, we capture the asymmetry in growth perspectives of the two networks in a simplified way. We assume that total demand for mobile connections is price elastic, i.e., that the market is only partially covered by mobile operators, while at the same time every consumer connects to the regulated fixed network. Our assumption of price elastic demand for mobiles is in contrast to the standard model of competition between networks, which assumes full market coverage, see for example Laffont et al. (1998, Sect. 5), Gans and King (2001).

As the coexistence of fixed and mobile phones opens up the possibility to call a person in different ways (from fixed to fixed, from fixed to mobile, from mobile to fixed, and from mobile to mobile), we will assume that different kinds of calls are imperfect substitutes.