A Neutral Wholesale Wireless Market in the United Kingdom

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A path to vibrant competition

A neutral wholesale wireless market, including an open access marketplace, would propel the United Kingdom forward in wireless technology, competition, and innovation. We discuss one promising scenario. The plan creates all the efficiencies of merging the Three and O2 networks, yet strengthens competition in mobile broadband and improves incentives for long-term investment. Here is how it would work.

A consortium of investors buys Three and O2, and forms a neutral wholesale network operator built on the cornerstone of open access—non-discriminatory access to network capacity at efficient competitive prices, which balance supply and demand at each time, location, and latency. We call this new entity, Open Network. For a more detailed discussion of an open access market, see Cramton and Doyle (2017).

The retail subscribers of both Three and O2 are spun off, so that Open Network has no direct interest in any retail subs. This eliminates the large conflict of interest in today's vertically-integrated wholesale markets where the wholesale operator directly owns most of its retail customers. The spinoff could be done in a variety of ways. For example, Three may decide that it wishes to keep its retail customers and only spin off its network. Indeed, Three may prefer to strengthen its retail business by acquiring the retail subs of O2. The goal of the spinoff is to maximize value, and thereby put Open Network in the best position to compete aggressively in the wholesale market with EE and Vodafone.

Robust competition in the retail market is assured. Retail entry costs are close to zero, given the open access policy of Open Network. Anyone with a good idea on how to provide a valuable service to retail customers can enter the market, knowing that network capacity to serve retail subs can be acquired from Open Network at competitive terms that clear the market at each time, location, and latency. And the Open Network pricing disciplines the retail pricing of EE and Vodafone. Intense retail competition, both respect to price and services, creates enormous value for retail consumers.

Wholesale customers, such as Google, Amazon, Apple, Netflix, and Microsoft, benefit from knowing they can buy mobile broadband at competitive prices. This assurance of competitive market-clearing prices is even more valuable for new wholesale customers, such as new entrants in the Internet of Things, which have a use-case that would take advantage of supply offered in the open access market.

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Importantly, Open Network has strong incentives for efficient long-term investment in the network, creating lasting consumer value. The strengthened incentive comes in part from the technical efficiencies of operating the merged resources of Three and O2. Open Network would enjoy the scale economies to make continuous modernization of its network, not only a desire but a reality. And the efficient congestion pricing of open access would provide essential information in targeting investments to where they are most valuable. With this structure, Open Network is poised to disrupt the current mobile broadband oligopoly at the wholesale level.

Although it may seem that the retail market is saturated in the UK, this is an artifact of the flawed market structure in which a few dominant incumbents operate proprietary networks, providing both wholesale and retail. This vertical integration limits competition and innovation. Other service providers (MVNOs) cannot prosper in such a setting, because they are constrained to offer services that make the dominant incumbents better off. And large wholesale potential customers are hesitant to make specific investments for fear of expropriation by network operators with substantial market power. This conflict of interest between retail and wholesale is extreme—and is seen not just in the UK but worldwide.

The solution is to have one neutral wholesale operator, Open Network, that operates the network under the principle of open access with efficient time and location pricing. The vertically integrated mobile network operators then co-exist alongside this neutral operator. A chief benefit is that retail service providers and large wholesale customers cannot be excluded from competitive mobile broadband service. These providers and customers are assured mobile broadband at competitive prices. The guarantee of competitive service is a powerful incentive for entry and innovation. And this entry and innovation brings new demand for throughput, motivated by efficient congestion pricing. The expanded demand creates incentives for efficient network investment.

Open access wireless

An open access wireless market is a wholesale market model that brings the Internet ecosystem of innovation to wireless (Cramton and Doyle 2016, 2017). Service providers and wholesale customers have access to network capacity on nondiscriminatory terms. Network throughput is priced dynamically by the marginal demand during congestion. This efficient congestion pricing balances supply and demand at every time and location, as in modern electricity markets (Cramton 2017).

The real-time market provides the foundation for forward markets. Monthly forwards are auctioned before the start of each month; yearly forwards are auctioned before the start of each year. Service providers and wholesale customers take positions in forward auctions to manage risk and optimize portfolios. Market makers and speculators arbitrage across markets, driving prices to competitive levels. Deviations from forward positions are settled at real-time prices based on actual use. The system operator runs the network and conducts the real-time, monthly, and yearly auctions of network throughput.

The goal of the market is to provide a secure, robust, wide-coverage platform for mobile communications. A complementary goal is competition. The open access provision, which ensures that capacity in the physical (real-time) market cannot be withheld, brings vibrant competition through low-cost, nondiscriminatory entry into the wireless market.

The open access market coexists and complements the dedicated networks of incumbent carriers, promoting efficient spectrum use and essential innovation.

Merger remedy

Four-to-three mergers have been proposed in many wireless markets, but often have failed due to an inadequate remedy to address competition concerns. The open access market provides a natural remedy for these mergers, allowing operational efficiency gains while increasing competition. In the remedy, the merged entity, eliminates the conflict of interest with retail operations. The neutral wholesale network sells its capacity in an open access market on a long-term basis. This provides a means for innovative service providers to enter and compete in the market and pay competitive prices to the merged entity for capacity consumed.

The approach is consistent with the recent four-to-three merger remedies adopted in European countries (Austria, Germany, and Ireland), but much more flexible in that entry is open and prices reflect ongoing market fundamentals. The approach is also consistent with merger remedies in electricity and gas markets in Europe, for example, EDF from 2001 to 2012, and proposed in the US in which a share of capacity is auctioned to competitors on a regular basis to foster competition in the wholesale market. The approach has been effective in bringing much needed liquidity to wholesale electricity and gas markets, and thereby allowing entry to those who otherwise would be vulnerable from a highly concentrated and vertically integrated market (Ausubel and Cramton 2010).

Key benefits

The wholesale-only provider eliminates the conflict of interest inherent between retail and wholesale for vertically integrated carriers. The neutral network brings transparent, non-discriminatory pricing to retail service providers and wholesale customers. The efficient time and location pricing enhances network utilization and promotes low-cost entry. Service providers and wholesale customers can make specific investments without fear of expropriation from dominant incumbents.

The neutral wholesale market fosters innovation and competition in the most basic way—by shattering entry barriers in the market for mobile broadband. This allows a much more robust market built on the ecosystem of the Internet, rather than oligopoly. Innovative service providers and wholesale customers can count on competitive pricing at each time and location. This enables the neutral network to improve network utilization, promote efficient investment, and foster demand expansion.

References

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