Pricing Access Services

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Abstract

Many established industries, such as the online service industry, the telecommunication industry, or the fitness club industry, are access service industries. When using services in these industries, consumers pay for the privilege of accessing the firm’s facilities but do not acquire any right to the facility itself. A firm’s pricing decisions in access industries frequently come down to a simple choice among flat fee pricing, usage pricing, or two-part tariff pricing. However, it is not so simple for firms in those industries to make this choice. Access service firms typically face a mix of consumers who have intrinsically different usage rates. A key characteristic of access service firms, however, is that the cost of providing an additional minute of usage is typically negligible, as long as the firm has the necessary capacity to serve its customers. Service capacity, which corresponds to the total available time on a firm’s system, is often limited.

In this paper, we show that service capacity and consumer usage heterogeneity are two important factors that determine a firm’s optimal choice. We develop a model that incorporates these two salient characteristics shared by access industries and study what determines a firm’s choice among the three alternative pricing structures (flat fee pricing, usage pricing, or two-part tariff pricing). Our analysis shows that, in the presence of consumer usage heterogeneity, service capacity mediates a firm’s optimal choice in a complex, yet predictable way. A firm’s choice also hinges on whether heavy or light users are more valuable in terms of their willingness-to-pay on a per-unit-capacity basis. The presence of both consumer usage heterogeneity and capacity constraints prompts a firm to choose its pricing structure to attract a desired customer mix and to price discriminate. As a result, two-part tariff pricing is not always optimal in access industries, and a firm’s pricing structure can vary in a complex way with the interaction of those two factors.

Specifically, we show that when light users are more valuable, a firm may use a two-part tariff or a flat fee, depending on whether the firm is constrained by its service capacity, but never charge a usage price alone or offer any signing bonus (a negative flat fee or a flat payment to customers). When heavy users are more valuable, a firm may choose to set a usage price, a signing bonus plus a usage price, or a flat fee. Interestingly, regardless of whether heavy or light users are more valuable in an access service industry, only flat rate pricing is a sustainable pricing structure once the industry has developed sufficient excess capacity.

We also show that the optimal pricing strategy in access industries can have some intriguing, nonintuitive implications that have not been explored elsewhere. For instance, when the industry capacity is unevenly distributed between competing firms, the large-capacity firm may well be advised to increase, rather than to decrease, its price to accommodate the small firm. It would be too costly and too tactless for the large firm to do otherwise. In fact, the strategy of accommodation calls on the larger firm to retreat in both light and heavy user markets and leave more of its capacity idle and more of the market demand unmet when the small firm’s capacity (hence, the industry capacity) increases. This implies that incremental policy measures that encourage the growth of smaller companies in the presence of a large company can be welfare-decreasing because the growth of a smaller firm can force the retreat of a large company at the expense of market coverage.

Today, services account for two-thirds to three-quarters of the GNP, not only in the United States but also in many industrial countries. Access industries are growing rapidly to exert profound impact on today’s economy. However, service pricing in general and pricing access services in particular have not received adequate attention in the literature. In this paper, we take the first step in understanding how capacity constraints and consumer usage heterogeneity mediate the choice of pricing structures in both monopolistic and competitive contexts.

(Pricing Strategy; Service Pricing; Competitive Strategies; Access Services; Capacity; Equilibrium Models)