Screening in a Two-sided Platform: The Role of Integration Costs and Advertising Revenues

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This paper analyzes to what extent a platform's holder can benefit from investing in screening when charging access to both consumers and content providers. Formally, we develop a model in which a platform acts as an intermediary between consumers and content providers in a two-sided monopoly setting. Contents are provided at no charge to consumers but content providers generate revenues from third-party players (i.e., advertisers). The utility of consumers increases with the number of content providers and, conversely, content providers get higher revenues (i.e., advertising revenues) if they can attract more audience through the platform. Complementary to traditional cross-group externalities, we here introduce two additional effects related to the ability of the platform's holder to choose the level of screening (i.e., access quality). On the one hand, we consider that consumers value the access quality effort provided by the platform. On the other hand, quality increases the cost of content providers since the latter have to invest more to comply with quality requirements (e.g., quality standards) and cope with increasing complexity of the platform (i.e., integration cost). The timing of the model is as follows. The platform monopolist first chooses the level of screening she invests in (stage 1). She then sets access prices for both consumers and content providers (stage 2). Finally content providers and consumers choose whether they go on board and interact with the other side of the platform (stage 3).

Our preliminary results show that the likelihood of the monopolist to invest in screening

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depends on the intensity of both cross-group externalities as well as the ensuing cost contents providers need to face. We first evidence a strategic use of screening-setting by the platform's holder when acting as an intermediary between the two sides. When the sum of cross-group externalities is very low, we find that the monopolist benefits from preventing access to all the content providers. When the sum of cross-group externalities turns to much higher level, the platform attracts more consumers and content providers so that the marginal benefit of providing positive level for access quality remains high enough compared to the incurred costs, except in the case in which integration cost is high. We secondly show that access quality may be decreasing with respect to the sum of cross-group externalities. If the integration cost content providers have to support is low there is a U-shaped relationship between access quality and the sum of cross-group externalities. This relationship turns to be a strictly decreasing one if integration cost is high, underlining than an increase in advertising revenues reduces here the incentives of the platform to improve access quality. Manipulating screening level a non-monotonic way with respect to the sum of cross-group externalities allows the platform holder to increase her profit as long as this sum increases. An interpretation is that the monopolist benefits from an increase of the size of both consumers and content providers with respect to cross-group externalities when manipulating screening intensity even if access prices may drop.

Turning to the case in which the platform and content providers play cooperatively on access quality-setting, we show that the platform always benefits from joint-decision with the content providers. A counter-intuitive result is that screening level in the cooperative case is likely to be higher than that in the non-cooperative case. An explanation is that joint-decision on screening level allows higher number of consumers to access the platform. High screening effort increases the rent the platform and content providers share, even if some screening costs have to be supported. A social welfare analysis is driven in both non-cooperative and cooperative cases and leads to ambiguous results. Some cases of non-linear relationships between cross-group externalities and social surplus are evidenced. We eventually open discussion for regulatory implications.

Keywords: Access prices; Access quality; Advertising; Content providers; Monopoly; Platform; Screening; Two-sided market

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