Efficient Upgrading in Network Goods: Is Commitment Always Good?

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Abstract

The frequency of upgrades in technology markets is not socially optimal when the quality improvement is negligible and smaller than the adoption cost of the new product. In monopolies, the literature has identified a sufficient factor for efficient upgrading: the firm’s power to commit to whether it will upgrade or not in the future. This is not true when an entry threat applies. In fact, it could even be that commitment is a factor of inefficiency when the market is open to competition. As shown in this paper, the incumbent’s commitment adds an additional source of inefficiency while an entry threat could dissolve social optimality. More precisely, when entry deterrence is possible, the incumbent monopolist always upgrades and this fact could be not socially optimal. When entry is guaranteed, the incumbent may commit not to sell the upgrade because otherwise, competition would hurt his total profits. If the entrant can practice price discrimination between the old and new users, there may be inefficient upgrading, independently of whether the incumbent can commit or not. The same potential inefficiency occurs if the entrant cannot exercise price discrimination when the incumbent lacks commitment power. If the incumbent can commit to whether he will choose to upgrade or not in the future, there is also an additional potential inefficiency: the entrant sells the new product only to the new comers, although upgrading by all the customers is optimal. Thus, forbidding the incumbent to commit raises the social welfare. To sum up, potential or actual competition may be a reason of too frequent upgrades and although commitment is socially optimal in monopolies, this is no longer true when opening the market to competition.

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