User Data and Algorithm Innovation

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Abstract

Based on the creative destruction perspectives of the Austrian school and endogenous growth theory, this article investigates whether or not the data collection (e.g., digital footprints, research results, and order histories) by the monopolistic internet platforms (e.g., Google, Facebook and Amazon) constitutes an insurmountable entry barrier that new entrants face in their attempts to penetrate online markets. In general, two interesting features are displayed together in this industry. First, the data regarding online footprints, search results, and purchase records are largely obtained by firms through the provision of zero-price services, such as internet searches and product price comparisons. Second, the production process of some online firms (e.g., search engine sites and social media posting platforms) exhibits increasing returns to scale: the larger the scale of a firm, the higher the productivity. According to previous theories and findings, our research results show that (1) in a dynamic and innovative industrial environment, although the market is constantly dominated by only a few firms, the monopolists might occasionally be replaced; and (2) the market entry barrier or an internet enterprise's competitiveness is mostly determined by the performance of online algorithms, rather than the volume of big data. At this point, over-regulation by the competition authority, such as treating big data as an essential facility and forcing entrenched firms to make their data accessible to their competitors, may not only decrease firms' incentives to innovate, but may also reduce dynamic competition in the market. Therefore, the antitrust cases brought by the competition authorities in advanced countries seldom show that the monopolistic online enterprises use their big data as a strategic tool to deter entry by competitors. In particular, the large-scale mergers and acquisitions of online enterprises, such as Google/YouTube, Microsoft/Yahoo, and Facebook /WhatsApp, have all been approved by the competition authorities. This shows that large volumes of data can hardly be claimed to constitute an entry barrier to the online market.

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