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Altruism or Shrewd Business? Implications of Technology Openness on Innovations and Competition

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Abstract

In today's highly competitive business environment, a growing number of high-tech firms are opening their technologies. We explore the rationale behind this unusual sharing behavior in order to understand whether it is altruism or a shrewd business move. We construct an analytical model where competing firms can choose technology openness, prototype release, or technology closedness as the technology openness strategy and make subsequent innovations on the adopted technology. In contrast to literature focusing on the demand side, our study reveals a novel explanation by shedding light on two effects of supply side. First, openness generates an information effect through which it reveals technology information to the competitor. Second, openness might also lead to an access effect in which the competitor might become a "copycat" by exerting a learning effort. Our analysis suggests that a firm's openness decision depends upon the trade-off between both effects, and the interplay is moderated by the learning costs. We find that sharing technology can alleviate costly innovation competition under certain conditions. More importantly, our results reveal that openness does not necessarily translate to higher innovation and greater consumer surplus as conventional wisdom suggests. We also illustrate the robustness of the basic rationale and enrich our findings through several extended models.

Keywords: Economics of IS, technology openness, IT innovation investment, analytical modeling