R&D, Marketing, and the Success of Next-Generation Products

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This paper studies dynamic competition in markets characterized by the introduction of technologically advanced next-generation products. Firms invest in new product effort in an attempt to attain industry leadership, thus securing high profits and benefiting from advantages relevant for the success of future product generations. The analysis reveals that when the current leader possesses higher research and development (R&D) competence, it tends to invest more in R&D than rivals and to retain its lead position. The leader’s investment exhibits an inverse-U pattern as this advantage increases. In contrast, when the leader enjoys an advantage that originates from the persistence of reputation, it invests less than its followers. Now, followers’ investment exhibits an inverse-U pattern as reputation advantage increases. Depending on the extent of leader reputation, industry structure can either exhibit frequent leadership shifts or prolonged incumbent dominance. The basic framework is extended to allow investments in additional marketing variables (e.g., advertising). Interestingly, the leader takes advantage of strong demand for its current product by focusing more on advertising, whereas the follower expends more on R&D. By shedding light on the implications of industry position for investment incentives and market evolution, the analysis provides valuable insights for formulating marketing strategy in fast-paced, high-tech business environments.

(High-Technology Marketing; New Product Development; Dynamic Capabilities; Technological Competition; Markov-Perfect Equilibrium)