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Information Technology and Firm Profitability: Mechanisms and Empirical Evidence

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Abstract

Do information technology investments improve firm profitability? If so, is this effect because such investments help improve sales, or is it because they help reduce overall operating expenses? How does the effect of IT on profitability compare with that of advertising and research and development? These are important questions because investments in IT constitute a large part of firms' discretionary expenditures, and managers need to understand the likely impacts and mechanisms to justify and realize value from their IT and related resource allocation processes. The empirical evidence in this paper, derived using archival data from 1998 to 2003 for more than 400 global firms, suggests that IT has a positive impact on profitability. Importantly, the effect of IT investments on sales and profitability is higher than that of other discretionary investments, such as advertising and R&D expenditures. A significant portion of IT's impact on firm profitability is accounted for by IT-enabled revenue growth, but there is no evidence for the effect of IT on profitability through operating cost reduction. Taken together, these findings suggest that firms have had greater success in achieving higher profitability through IT-enabled revenue growth than through IT-enabled cost reduction. They also provide important implications for managers to make allocations among discretionary expenditures such as IT, advertising, and R&D. With regard to IT expenditures, the results imply that firms should accord higher priority to IT projects that have revenue growth potential over those that focus mainly on cost savings.

Keywords: Information technology, profitability, revenue growth, cost reduction, firm performance, discretionary expenditures, advertising, research and development, resource-based view, profitability paradox