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TREO

Technology, Research, Education, Opinion

How Does a Firm's Information Technology Investment Depend on Prior Performance, Business Strategy, and Industry Environment? An Empirical Investigation

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There is a rich history for IT (information technology) investment's impact on future firm performance within the IS literature, but less is known about the relationship of prior firm performance, among other variables, to a firm's future investments in IT. We investigate a firm's changes in IT budget following changes in performance under varying environmental conditions and for different business strategies. For this purpose, we use the Resource-based view (RBV) and a proprietary dataset that has 10,187 firm year observations and 2,237 unique publicly traded firms over a 10-year period from 2011 to 2020. By capturing historical information that firms could use to shape future changes to IT budget, we gain a deeper understanding of which scenarios lead firms to increase or decrease their IT budgets. Since budgets are created to be forward looking, firms can first plan to invest in IT strategically based on a continuation of the business strategy (Sabherwal et al. 2019) or alternatively as a tool to shift the strategy. We leverage the Miles and Snow (1978) typology to categorize firms into Analyzers, Defenders, and Prospectors to gain further insights into the different approaches to IT investment based on these alternative business strategies. Additionally, firms can leverage their abilities to scan their industry environment(s) to interpret past environmental conditions and prepare for future conditions (Tallon and Pinsonneault 2011; Saldanha et al 2020). For example, Prospectors excel at scanning the industry environment because they thrive in more complex environments while Defenders thrive in simpler and more stable environments (Miles and Snow 1978). Overall, we use three-way interactions with panel data analyses to examine the effect that change in firm performance has on subsequent IT budgets, moderated by the firm's business strategy and environmental attributes. Firm performance can both afford a firm the ability to increase its IT budget and serve as a signal to "double down" on the current business strategy that is proving successful. Depending on the business strategy and the industry environment, this has implications for further increase or decrease in future IT investment (Steelman et al 2019). The results, including based on sub-sample analyses for each strategy, support prior literature regarding Defenders. However, the study also reveals some surprising insights for Prospectors that sheds new light on how these firms approach IT investment under specific environmental conditions due to changes in firm performance.

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