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The Value of AI-Enabled Strategic Integration Capabilities in Driving IT-Enabled Agility and Firm Resilience

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ABSTRACT

Turbulence and uncertainty in the business environment and firms' inability to respond appropriately have been cited as the leading cause of failures. An organizational paradigm, agility, is one of the keys to surviving a crisis and uncertainty. As a response, organizations are increasingly turning to information technology (IT) to help them respond to threats and opportunities during a crisis. Having strong agility allows firms to cope with unexpected changes. In this paper, we introduce the convergence of artificial intelligence (AI) systems with IT-enabled agility. We examine how building such an AI-based capability can help organizations anticipate, prepare for, and respond to sudden disruptions to survive. We assert that organizations can drive agility during a crisis through strategic integration and utilization of AI-based systems and methods. In an age when capabilities are generally accepted as the backbone of competitive advantage, integration capabilities remain under-explored. Drawing upon the concept of control and coordination mechanisms, we propose *AI-enabled strategic integration capabilities* (AISIC) as a firm's capabilities to utilize AI-based systems to integrate available organizational resources, methods, and tools, including those already developed and those recently developed in an organization. We conceptualize AISIC as consisting of *control capabilities* (i.e., application building capability and application orchestration capability) and *coordination capabilities* (i.e., competitive response capability, learning capability, and innovative capability). We hypothesize that AISIC is positively associated with IT-enabled agility and firm resilience, in which IT-enabled agility mediates the relationship between AISIC and firm resilience. Together, IT-enabled agility and firm resilience positively influence firm performance. To test our research hypotheses, we conducted a two-stage survey to collect data from IT and business decision-makers during the period when firms globally were affected by the COVID-19 pandemic. We measured AISIC in T1; and IT-enabled agility, firm resilience, and firm performance in T2 (four months after T1). Our findings provide support for our hypotheses. We show the process of building agility using an AI-based integrated strategy and offer evidence to support positive relationships between AI, agility, resilience, and performance during a crisis.

Keywords (Required)

Artificial intelligence, IT-enabled agility, firm resilience, organizational capabilities