

Chapter V

Diffusion and Innovation: An Organizational Perspective

INTRODUCTION

This chapter introduces the seminal literature addressing technological diffusion, innovative product diversification, and the organizational strategies and constraints that firms face when introducing and adopting new technologies and innovative management strategies. We begin with diffusion. Abrahamson (1991) draws critical distinctions between the processes undertaken by rational adopters of inefficient technologies and the conditions that promote the irrational rejection of efficient innovations. Attewell's (1992) focus is on organizational learning and abilities that drive the diffusion of innovative information and computing technologies. Cooper and Zmud (1990) examine managerial involvement with information technology, its effect on the adoption and infusion of that technology, and the role of rational decision models in explaining IT adoption. The section on diffusion closes with Narin and Perry's (1987) look at the use of patent and citation data as a method of gauging a firm's technological strength. In this case, information is the innovative product being diffused.

Chatterjee and Wernerfelt (1991) begin the second section on diversification and organizational structure by locating a theoretical basis for the identification and validation of factors that influence diversification innovation adoption strategies. Miller and Freisen (1982) ask why different decision-making variables affect entrepreneurial and conservative firms differently, focusing on the determinants of innovation that must be considered in any organization's development strategy. Orlikowski (1992) re-examines structuration to provide an alternative conceptualization of the role of technology, focusing on the theory's social and historical

substrata to provide an explanation of how we might rethink the roles of technology in organizations. Rothwell (1992) concludes the second section by providing a rich overview of the literature on industrial innovation process, from which he soberly determines that, even after five decades of research on innovation in organizations, there is still no roadmap to successful innovation.

DIFFUSION

Rational Adopters and Inefficient Innovations

Whether we view the literature of innovation diffusion as self-fulfilling prophecy, accurate hind-sight, or the distillation of empirical evidence, Abrahamson, in his 1991 *Academy of Management Review* article, is intent on deflating the rosy picture that characterizes much of its content by providing a skeptic's perception of its fundamental premises. His aims are to identify the motivations, frequency, and nature of the processes that promote "technically inefficient innovations [to be] diffused or efficient innovations rejected" and to challenge the assumption that these ends are the result of "rational adopters [making] independent and technically efficient choices" (p. 587). Abrahamson's review of the literature complicates these seemingly straightforward ends he seeks by indicating "that processes, which prompt the adoption of efficient innovations, may coexist with processes that prompt the adoption of inefficient ones. Additionally, these resolutions inform research on the diffusion and rejection of many different types of innovations across varying contexts" (p. 586).

Guided by the dean of innovation diffusion literature, Everett Rogers, Abrahamson recounts Rogers' basic questions: "First, what processes and contextual factors affect innovations' rates of diffusion?" Do "theoretically derived mathematical models adequately describe longitudinal changes in diffusion rates"? "What characteristics differentiate earlier from later adopters?" Can one discern "differences between leaders and laggards" by analyzing the timing of technology adoption? "How does the structure of networks of adopters affect the sequence in which adoptions occur during diffusions?" (p. 586). Abrahamson cautions readers against blindly accepting what Rogers calls the "efficient-choice" perspective, "which assumes that rational adopters make independent and technically efficient choices, [and] dominates the innovation-diffusion literature," because it "perpetuates pro-innovation biases [by providing] limited help in addressing the questions of when and by what processes technically inefficient innovations are diffused or efficient innovations rejected"; often, "fads or fashions facilitate the adoption of

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