



Chapter XII

An Overview of the Diffusion of Advanced Techniques

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ABSTRACT

This chapter addresses a variety of factors influencing the diffusion of advanced techniques in organizations with particular reference to advanced cost and management accounting practices. Having identified almost all of influencing factors addressed in the literature, this chapter also develops a model for the diffusion of advanced techniques and clarifies the most significant group of influencing factors responsible for such a diffusion process from users' point of view.

Addressing diffusion of advanced techniques in the global environment as a practical issue requires global evidence, which is almost impossible to provide in a single study. However, to address such an issue and to explore significant factors influencing the diffusion of advanced techniques in the organizations, this chapter relies on the results of recent surveys on the diffusion of advanced cost and management accounting techniques as an example. The diffusion model developed in this chapter is more likely to be applicable to any diffusion study, investigating the diffusion process of either accounting or non-accounting advanced techniques in the global environment, with minor modification.

INTRODUCTION

The nature of global competition faced by organizations in different aspects of their operation (such as manufacturing process, operation technologies, and information systems) has changed significantly during the last two decades (Shields, 1997). This has placed a greater emphasis on developing and implementing advanced techniques including manufacturing practices and management accounting innovations (Perera, Harrison, & Poole, 1997). Consistent with systems approach theory, a common theme for the diffusion of advanced techniques in the global environment is that changes in an organization's operating environment, such as changes in communication, information systems, competition, and manufacturing processes, may lead to the consideration of the subsequent changes necessary in other parts of the organization, such as administration systems, cost and management accounting techniques, etc. (Kellett & Sweeting, 1991).

Given the extent of recent advanced technological changes, the growing level of global competition has intensified the challenge for managers to consider more effective ways of achieving competitive advantage and improved organizational performance for the survival of their organization. Any attempt to facilitate diffusion of advanced techniques in any sector of organizations, such as communication, information systems, manufacturing processes, and administration systems, can be considered a means of achieving such a competitive advantage in the global environment. With regard to the current ever-changing nature of global environment, it is not an exaggeration to suggest that an organization's ability to function successfully and survive in the current intensified global competition depends highly on the availability of accurate, detailed and up-to-date information that can be used by decision makers in the organization. This highlights the important role of advanced cost and management accounting techniques in providing such information and emphasizes the significant contribution of any effort to facilitate the implementation of new management accounting techniques in practice. However, a progressing major concern is that why the adoption rate of these new advanced cost and management accounting techniques is low and which factor(s) influence diffusion of such techniques.

Addressing the diffusion issue of advanced techniques, several studies suggested some elements as hindering or facilitating factors in diffusion and investigated their roles in diffusion processes of management accounting and accounting information systems (e.g., Askarany & Smith, 2000a; Bjornenak, 1997; Booth & Giacobbe, 1998; Chenhall & Langfield-Smith, 1998; Damanpour, 1988; Damanpour & Gopalakrishnan, 1998; Gosselin, 1997; Hartnett & Lowry, 1994). Most of these studies reported some kind of relationship between diffusion of cost and management accounting innovation and some influencing factors such as organizational, structural, or cultural factors. However, no significant influencing factor explaining the majority of variance in diffusion processes has been reported.

Shedding light on the diffusion of advanced techniques, this chapter explains the diffusion process, identifies influencing factors addressed in the diffusion literature and develops a diffusion model by classifying all influencing factors into three main categories: characteristics of innovations, characteristics of innovators, and other influencing factors that can not be categorized therein (notably factors related to social system, environment, and so on). Reporting on the results of recent surveys on diffusion of advanced techniques, this chapter also tries to identify the significant group of influencing factors that might be responsible for the great majority of the variance in the diffusion process of advanced techniques.

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