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Internationalization, product development and performance outcomes: A comparative study of 10 countries

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ABSTRACT

Product development is recognized as innovative value creating effort that has become important in the high-risk, globally competitive environment. This paper presents a model that links product development practices with product development performance in the context of internationalization. The empirical results base the analyses on International Manufacturing Strategy Survey (IMSS IV) data from 10 countries (i.e., Argentina, China, Canada, Denmark, Hungary, Italy, Netherlands, Sweden, Turkey and USA). We develop several hypotheses with respect to the relationships between product development practices and their outcome measures. We test the hypotheses with data from 458 manufacturing units. This study suggests that many small and medium sized firms adopt internationalization as their new competitive weapon. Small firms seem to be more effective in utilizing product design and manufacturing involvement while large firms standardize and formalize the product development practices. Both small and large firms utilize cross-functional work for achieving organizational and technological integration. The improvement efforts toward enhancing product development outcomes vary depending on different regions of the world.

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1. Introduction

Internationalization is the extent of globalization of market and operational scope (Johanson and Vahlne, 1977; Erramilli et al., 1999; Madsen, 2005; Mockaitis et al., 2006). Although the potential benefits of internationalization (e.g., volume economies, market intelligence, product development and operational flexibility and stability) are indicative (Porter, 1985; Kogut, 1985), there has been inconsistent empirical evidence about the impact of internationalization on financial performance (Sullivan, 1994). The impact of internationalization is indirectly realized across long causal chains. The methods of measuring the effects of internationalization should examine diversely complex relationships (Riahi-Belkaoui, 1998). An important way to examine how firms configure their organizational resources, particularly product development practices, manufacturing facilities, technological and organizational integration, is to consider the contexts of internationalization.

In today's highly competitive marketplace, firms strategically locate their product development organizations and manufacturing facilities around the world. The challenges for many of these firms are how to configure their product development practices, organizational and technological integration. It is useful to consider the theory of product life cycle in examining product development practices as firms internationalize their markets and operations. The basic idea of the product life cycle is that business processes evolve through a series of life cycle stages from birth to death, with each stage displaying clearly defined and relatively stable characteristics (Stonebaker and Liao, 2006). Vernon (1966, 1979, 1986) suggested three stages of the international product life cycle (PLC) patterns—(1) development of new products in advanced industrial countries; (2) extension of new markets beyond national borders; (3) mass production and marketing in less developed countries. Increasingly, firms use internationalization in support of their products and services offerings in the widest possible markets in the world.

This study examines three questions. First, in the context of internationalization do firms adopt different product development practices? Second, to what extent do the above product development practices improve product development and manufacturing performance outcomes? Third, how do the above practices different in diverse regions of the world?

This paper is organized in three sections: the first develops the theoretical foundations upon which our hypotheses about the new product development practices are constructed. The second reports on the research methods used, and the third discusses our results and conclusions.

2. Background

2.1. Theoretical framework

The theory of international product life cycles suggests that firms increase their involvement in international product development and manufacturing operations in an incremental fashion rather than in large spectacular strides (Johanson and Vahlne, 1990; Erramilli et al., 1999). It assumes that the internationalization efforts of firms necessitate the effective placement of their product development activities in alignment with their manufacturing functions worldwide. The resource-based perspective also describes the international product development activities as a bundle or stock of tangible and intangible resources (Athanassiou and Nigh, 1999). As firms expand their markets and operations beyond their national borders, they also disperse product development organizations and manufacturing facilities throughout the world. In this context, the management challenges are how to effectively integrate product development activities, organizational processes and technological capabilities (Cantwell, 1995).

Internationalization is mostly associated with large firms from developed countries. Increasingly, small and medium enterprises (SMEs) in both developed and developing countries participate in the vital processes of internationalization. International comparative studies should include both small and large firms from both developed and developing countries. A few recent studies focus on the internationalization aspects of firms from developing countries (Bell et al., 2004; Chiao et al., 2006). Yet, little is known, in the context of internationalization, about the diverse patterns of product devel-