

# Organizational knowledge and the manufacturing strategy process: A resource-based view analysis

Ely Laureano Paiva<sup>a,\*</sup>, Aleda V. Roth<sup>b</sup>, Jaime Evaldo Fensterseifer<sup>c</sup>

<sup>a</sup> Universidade do Vale do Rio dos Sinos, Brazil

<sup>b</sup> Clemson University, South Carolina, United States

<sup>c</sup> Universidade Federal do Rio Grande do Sul, Brazil

Received 1 April 2005; received in revised form 22 May 2007; accepted 29 May 2007

Available online 3 June 2007

## Abstract

The current competitive environment is characterized by new sources of information, new technologies, new management practices, new competitors, and shorter product life cycles, which highlights the importance of organizational knowledge in manufacturing companies. We integrate some of those knowledge-based approaches seeking to understand how aspects related to cross-functional orientation, new technologies, and increasing access to information affect manufacturing strategy. In this paper, “know-what” (where to find the needed information) and “know-how” (how to run operations smoothly) are considered key components of organizational knowledge in the process of manufacturing strategy formulation. Assuming that knowledge accumulation may lead to competitive advantage, we propose a model of manufacturing strategy process from a resource-based view perspective. We used a survey to collect field data from 104 companies. The results indicate that cross-functional activities integrate manufacturing knowledge and contribute to the creation of valuable and rare product characteristics.

© 2007 Elsevier B.V. All rights reserved.

**Keywords:** Organizational knowledge; Resource-based view; Manufacturing strategy process

## 1. Introduction

Modern manufacturing strategy has evolved from two broad schools of thought. Early literature links strategic planning concepts and the trade-off approach (Skinner, 1969; Wheelwright, 1984), and highlights the “manufacturing task” or how manufacturing should align decisions with the company’s business strategy. Those proposals highlighted the “manufacturing task” or how manufacturing should link their decisions to the company’s business strategy. Currently, anecdotal references have stated that a rigid process of strategic

planning is not enough under the dynamic environmental conditions.

More recent literature on manufacturing strategy pertaining to the cumulative capability model posits that the competitive criteria are related to each other. (Ferdows and De Meyer, 1990; Roth, 1996a; Boyer and Lewis, 2002; Rosenzweig and Roth, 2004). Manufacturing tasks, in this view, should follow a sequence of improvement in order to build manufacturing capabilities more effectively (Schmenner and Swink, 1998). Nevertheless, Flynn and Flynn (2004) did not find evidence supportive for the Ferdows and De Meyer’s (1990) sandcone model.

Thus, the current competitive landscape has created the need for new research on manufacturing strategy formulation. St. John et al. (2001) argue that

\* Corresponding author. Tel.: +55 51 590 8341.

E-mail address: [elpaiva@unisinos.br](mailto:elpaiva@unisinos.br) (E.L. Paiva).

a resource-based view is a theory fitted to the current competitive trends and provides a frame for manufacturing strategy research. Furthermore, Amundson (1998, p. 10) states that the resource-based view provides research in manufacturing strategy “a more fine-grained understanding of how competitive advantage is provided through the resources generated by operations”.

Marucheck et al.’s (1990) exploratory study showed that manufacturing strategy formulation is not a static process. Rather, it is an iterative process that involves the formulation, gathering, and creation of organizational knowledge. In the last decades, new studies using the capability-based approach view manufacturing as a strategic resource (see for example Hayes and Upton, 1998). This article follows this stream of research in manufacturing strategy by empirically analyzing the process of manufacturing strategy using a resource-based perspective.

Like in past studies (Voss, 1992; Fine and Hax, 1985; Giffi et al., 1990; Marucheck et al., 1990), we identify the core elements, such as cross-functional orientation, new technologies, and increasing access to information, which are related to the formulation process of manufacturing strategy; however, we follow an empirical approach, testing a theoretical model based on the resource-based view of the firm. Also, in contrast to traditional view of trade-offs, this study focuses on the resources related to the process of manufacturing strategy. In this process organizational knowledge is considered a key resource.

This article is structured as follows: Section 2 provides the theoretical background of manufacturing strategy, organizational knowledge, and the resource-based view; Section 3 describes and explains the proposed theoretical model; Section 4 presents the general theoretical premises; Section 5 discusses the research methodology; Section 6 presents the empirical results; finally, Section 7 discusses the results.

## 2. Theoretical background

In considering the role of the manufacturing function in capability creation and sustainability, different researchers in manufacturing strategy have stressed that manufacturing plays a central role in this new competitive environment (Wheelwright, 1984; Hayes et al., 1988; Hill, 1989; Giffi et al., 1990; Schroeder et al., 2002). Skinner (1969) and Wheelwright (1978) were pioneers in showing that a manufacturing management that only tries to reduce costs is not sufficient to compete. We integrate some of these

theoretical approaches seeking to understand how aspects related to cross-functional orientation, new technologies, and increasing access to information affect the process of manufacturing strategy formulation. These issues are presented in the next sections that explore the linkages between manufacturing strategy, organizational knowledge and the resource-based view.

### 2.1. Organizational knowledge as a resource

In general, the distinction between information and knowledge is not clearly specified in the literature (Bell, 1999). Various authors identify information as the basic input for organizational knowledge (Kogut and Zander, 1992; Garvin, 1998; Davenport and Prusak, 1998). Nonaka and Takeuchi (1995, p. 58) state that “information is a flow of messages, while knowledge is created by that very flow of information, anchored in the beliefs and commitment of its holder. This understanding emphasizes that knowledge is essentially related to human action”.

Other research links the role of information and knowledge creation. Davenport and Prusak (1998) claim that knowledge provides a framework for evaluating and incorporating new experiences and information. These authors consider that organizational knowledge is, at the same time, both tacit (originated and applied in the mind of knower) and explicit (embedded in documents, norms and repositories). Also, Bell (1999) argues that information is a context-based arrangement of items while knowledge is the judgment of the significance of events and items. Two basic differences between information and knowledge found in the literature are that: (1) knowledge is connected to existing values and beliefs, and (2) it is close to action. Therefore, even though the literature is not conclusive on the difference between information and knowledge, it does provide some distinctive characteristics between them.

Organizational knowledge influences the ways that companies deal with dynamic environmental changes (Grant, 1996). According to Leonard-Barton (1994), factories will increasingly become “learning laboratories” in order to adapt to external turbulences. A growing body of literature suggests that in dynamic environments, increased organizational knowledge reduces risks and uncertainties (Liebeskind, 1996). This learning process starts with information assimilation, which is related to the company’s pre-existing knowledge. Considering information as an input to knowledge, companies’ learning follows a cumulative process orientation based on information integrated with past experiences and knowledge (Cohen and

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات