



Flexibility of manufacturing systems, strategic change and performance

F. Javier Lloréns^{a,*}, Luis M. Molina^a, Antonio J. Verdú^b

^a*Department of Management, University of Granada, Campus de Cartuja s/n, Granada 18071, Spain*

^b*Department of Management, Miguel Hernández University, Spain*

Received 13 October 2003; accepted 29 May 2004

Available online 20 December 2004

Abstract

The past decade has witnessed an increase of interest in flexibility, which bestows on a firm the ability to respond promptly to market opportunities and changing technologies. The development of capabilities to be flexible rests on the mandate of top management, helps firms manage environmental uncertainty, and tends to enhance firm performance. This research paper aims to establish an analytical approximation that considers how the determinants of manufacturing flexibility at the system level affect the desired strategic change in organizations, as well as subsequent performance. We propose the hypotheses that both environmental factors and internal resources affect flexibility, this latter aspect influencing the organization's performance. The problems that stem from measuring manufacturing flexibility in terms of fit were also analyzed. In order to do this, we have made a wide-ranging trans-national study, within the framework of the European Union, using data from 403 European firms. The Structural Equation Model (SEM) technique has been used to contrast the hypotheses. The results show that manufacturing flexibility at system level can be a critical factor in the process of strategic change, which means that it can have an impact on the desirability of strategic change or on the more specific strategic fit.

© 2004 Elsevier B.V. All rights reserved.

Keywords: Strategic change; Manufacturing flexibility; Fit; Competences; Metaflexibility; Performance

1. Introduction

The study of strategic change has long occupied an important position in the larger field of strategic management. Strategic change has been

recognized as an important phenomenon because it represents the means through which organizations maintain coalignment with shifting competitive, technological, and social environments which occasionally pose threats to their continued survival and effectiveness (Kraatz and Zajac, 2001). The emergence of new global competitors, the convergence of high-technology industries and the increasing speed and cost of technological

*Corresponding author. Tel.: +34 958 242 889;
fax: +34 958 2462 222.

E-mail address: fllorens@ugr.es (F.J. Lloréns).

development promise an increasingly uncertain environment for organizations (Hagedoorn and Schakenraad, 1994). This may be particularly true in fast-paced industries or hypercompetitive environments characterized by rapid technological change, shortened product life cycles, increasing competitive rivalry, and global competition (Upton, 1994; Volberda, 1996).

Manufacturing companies often face high-demand volatility, in terms of total volume, product mix and customisation requirements. In order to cope with these changes in the manufacturing environment, the company would need to possess some degrees of flexibility in order to stay competitive and profitable. Flexibility can be seen as a fundamental property of the manufacturing system (Grubbström and Olhager, 1997). Thus, it is a complementary property to productivity, and the prevailing opinion today is that companies need to be both productive and flexible, and that there must be no trade-off between the two (Bengtsson and Olhager, 2002). The development of capabilities to be flexible rests on the mandate of top management, helps firms manage environmental uncertainty, and tends to enhance firm performance (Evans, 1991). Many organizations have found that it is almost impossible to address these competitive forces without some major internal and external structural adjustments that provide greater flexibility (Young-Ybarra and Wierseman, 1999).

The literature lends its attention increasingly more to the factors that act as obstacles to strategic change (Amburgey et al., 1993; Rajagopalan and Spreitzer, 1997; Zajac and Kraatz, 1993; Kraatz and Zajac, 2001). However, little attention is paid to the role manufacturing flexibility plays. Zajac et al. (2000) offer an approximation to strategic change in which the comparison of actual and necessary strategic change determines the degree of dynamic strategic fit, which should then influence subsequent performance. At the same time, they give a set of organizational factors that theoretically should define strategic fit. Organizational resources and competences can act as critical factors for organizations that are contemplating strategic change. This study analyzes the influence manufacturing flexibility has as a critical

factor. Most research on manufacturing flexibility contributes to the theory, but the very few empirical works published use flexibility or adaptation indices that measure the number of times firms have changed, modified or adopted different components or conducts. The fit between the level of actual flexibility and that required by the environment (the manufacturing flexibility gap) is not analyzed as an explanatory variable of performance. Thus, a situation can arise in which a firm's flexibility does not reach the required level, though the number of changes is high. In this case, the fit is deficient and flexibility management inefficient. In other cases it may be that a firm's flexibility exceeds the demands of the sector, which can exert a negative influence on the costs it has to bear.

From our point of view, manufacturing flexibility can influence the desirability of strategic change or the more specific strategic fit. This paper, firstly, proposes to develop an analytical approximation that considers how the determinants and antecedents of manufacturing flexibility condition the change desired by the organizations' CEOs, as well as subsequent firm performance. Secondly, we attempt to analyze the problems involved in measuring flexibility in terms of fit. In the sections that follow, we, first of all, briefly review the past conceptual work on manufacturing flexibility and strategic change, as well as the problems surrounding its measurement. We then describe the sample and methodology of a field study that provides an initial test of our hypotheses. Finally, we present and discuss the finding and suggest implications for both future research and practice.

2. Manufacturing flexibility and strategic change

The literature has suggested the theoretical relationship between manufacturing flexibility and strategy (Chang et al., 2003). In recent years, interest in strategic changes seems to have heightened even further, and many studies examining the occurrence, antecedents, and performance consequences of strategic change have appeared (Goodstein and Boeker, 1991; Kelly

متن کامل مقاله

دریافت فوری ←

ISIArticles

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