



Marketing Intelligence & Planning

Emerald Article: Organizational structure and specialized marketing capabilities in SMEs

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Article information:

To cite this document: Guilherme Trez, Fernando Bins Luce, (2012), "Organizational structure and specialized marketing capabilities in SMEs", Marketing Intelligence & Planning, Vol. 30 Iss: 2 pp. 143 - 164

Permanent link to this document:

<http://dx.doi.org/10.1108/02634501211211957>

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Organizational structure and specialized marketing capabilities in SMEs

Structure and specialized marketing

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Received 3 January 2011
Revised 11 April 2011
Accepted 18 April 2011

Abstract

Purpose – This paper aims to develop and test a conceptual model of organizational structure design that incorporates some factors influencing strategy implementation. The research also aims to consider inter-functionality in new product development (NPD) processes and marketing decisions, measured from the dispersion of these activities among functional areas.

Design/methodology/approach – The research was conducted across 424 small and medium-sized furniture manufacturing companies. In total, eight hypotheses were proposed and tested using structural equation modeling.

Findings – Most important among the study's findings was that inter-firm relationships and inter-functional processes are relevant for the study of organizational structure design. It was found that the dispersion of the new product development process and of marketing decisions exert a positive influence on architectural marketing capabilities. The results showed that the dispersion of NPD processes and marketing decisions influence the development of marketing capabilities only in those companies with inter-firm relationships. The paper also found that inter-firm design did not affect the impact of the relationship between the dispersion of marketing decisions and NPD process on specialized capabilities.

Research limitations/implications – The study focuses research on Brazilian small to medium-sized furniture enterprises and could have single-source bias in its data collection process.

Practical implications – The findings provide insights into ways of integrating structures. It is observed that a higher integration of areas in marketing decisions is related to the dispersion of the NPD process. Given that dispersion in NPD is a disseminated practice, it is found that higher dispersion in marketing activities has an impact on product development.

Originality/value – The paper's findings confirm the influence of organizational design on the development of planning capabilities and on the implementation of marketing strategies.

Keywords Organizational structures, Marketing capabilities, Inter-functional, Inter-firm, Small to medium-sized enterprises, Brazil

Paper type Research paper

Understanding the processes of strategic implementation is one of the main academic and professional challenges in business (Hrebiniak, 2005). On analyzing implementation components, the structure of the organizations emerges as a fundamental element in successful strategy (Olson *et al.*, 2005). Studies on the relationship between organizational structure design and its impact on strategy often appear in the literature of strategy (e.g. Nutt, 1983; Skivington and Daft, 1991; Hrebiniak, 2006; Anand and Daft, 2007) and marketing (e.g. Gupta *et al.*, 1986; Ruekert



and Walker, 1987a, b; Achrol, 1997; Day, 1994; Montgomery and Webster, 1997, Hughes and Morgan, 2007). In contrast, this study discusses the relationship between the characteristics of a more flexible organizational design, involving inter-functionality of processes and inter-firm relationships, and their influence on the development of strategic marketing capabilities.

Though the analysis of organizational structure has always been a primary focus of research in studies of strategy, it became classified with the implementation process only after 1980. Studies with this focus align aspects like centralization, formalization, and specialization indicators with the execution of strategy, which is a basic construct in the analysis of organizational structure, the form of process organization, and in the development of resources and strategic capabilities.

The strategy approach has developed across a variety of ideas:

- correlation established between centralized decision-making and the complexity of strategy (Nutt, 1983);
- analysis of different levels of centralization in decision-making among the business units of an organization and of differences in the effectiveness of results (Gupta, 1987);
- adoption of different organizational structures associated with diverse strategies in different business units within the same organization (Govindarajan, 1988);
- the characteristics of organizational structure and its influence on strategic decision process (Wally and Baum, 1994); and
- the use of specific structures in the development of capabilities based on learning from inter-firm alliances (Kale and Singh, 2007).

In marketing, studies associating organizational design with strategy address the following dynamics:

- the relationship between the basic dimensions of the organizational structure of the marketing area and performance (John and Martin, 1984; Ruekert *et al.*, 1985);
- marketing performance associated with formalization, dependence of resources, and with inter-departmental processes (Ruekert and Walker, 1987a);
- the structuring of control mechanisms in the execution of marketing activities (Jaworski *et al.*, 1993);
- the development of marketing capabilities and their relationship with structural aspects of organizations (Day, 1994; Vorhies, 1998);
- inter-functionality, development of projects in work groups, and dispersion of marketing function in the organization (Homburg *et al.*, 1999);
- the relationship between organizational characteristics and the type of strategy adopted (Vorhies and Morgan, 2003);
- strategic marketing performance and the SME context (Brooksbank and Taylor, 2007); and
- strategic capital as an advantage in resources utilized in implementation (Hughes and Morgan, 2007).

The purpose of this study is to contribute towards the understanding of elements defining the organizational design of SMEs from a strategic vantage. Towards this aim, we investigated the relationship between two relevant dimensions:

- (1) the extent of the use of inter-functional and inter-firm processes; and
- (2) the development of strategic marketing capabilities.

In so doing, we intend to provide answers to the following questions:

- How does inter-functional integration provide better marketing capabilities?
- What sort of marketing capabilities benefit from the inter-functionality of processes?
- How do inter-firm relationships affect the development of marketing capabilities?

To explore these questions, we proposed and tested a model of analysis that deals with strategic process. Some strategic processes are related to the generation of value for the market, as this appears to be the function of the organizations. Srivastava *et al.* (1999) have established three strategic processes associated with the generation of value for customers:

- (1) the development of new products;
- (2) the management of supply channels; and
- (3) customer relationship management.

From among these, we chose new product development (NPD). There are studies that have investigated NPD associated with the development of marketing capabilities (Atuahene-Gima, 2005; Murray and Chao, 2005), the analysis of marketing integration into other functional areas (Ruekert, 1995; Tassarolo, 2007; Troy *et al.*, 2008), and with the establishment of inter-firm relationships for NPD (Rindfleisch and Moorman, 2001; Knudsen, 2007). However, as far we understand, no existing study analyzes these three processes in an integrated approach, as we have.

Theory framework

Inter-functional structure

Integration of organizational areas for the performance of activities is associated with organizational vision based on processes. In addition, we assume a separation between functions and functional areas, i.e. certain functions may be carried out by more than one department in the organization (Day, 1994), a significant distinction in the context of the SME. According to Day (1997), this point is worth emphasizing because limits set by functional organizational structures in companies are often extended. This, in turn, gives room to processes that go beyond specific functions and originating hybrid structures, vertical and horizontal. Lee *et al.* (2010) underline this issue when they argue the potential impact of inter-firm relationships and open innovation on new product development processes in SMEs. Consequently, as they gradually develop distinctive capabilities, deriving from within the organization or from inter-firm relationships, the borders of organizational structures become permeable and mutable.

Others, like Bonoma and Crittenden (1988), underline the importance of inter-functional relationships in organizational design. They plot the existence of four managerial skills essential in the implementation of marketing strategy:

- (1) interaction of capabilities with other areas;
- (2) allocation of resources;
- (3) supervision of activities involving the customer; and
- (4) the organization of structural activities to improve task performance.

The concept of organizational design, developed by Ruekert *et al.* (1985), and mentioned by others (Vorhies and Morgan, 2003; Olson *et al.*, 2005; Thorpe and Morgan, 2007), is understood as a way to contextualize the different organizational structures of marketing.

Ruekert and Walker (1987a, b) have analyzed marketing relationships more broadly. They consider a set of functions and specify aspects that interfere with marketing relationships and with those of other areas in the organization. They locate the importance of studying horizontal interactions between departments in order to understand the successful implementation of marketing strategies. Their study deals with four factors:

- (1) effects of inter-dependence;
- (2) mechanisms of coordination;
- (3) communication; and
- (4) the impact of inter-functional interaction.

Olson *et al.* (1995) were the first to introduce the concept of inter-functional dispersion in the analysis of the inter-functionality of organizational processes. The concept of inter-functional dispersion, which characterizes the degree of dispersion of the marketing function among the functional areas of an organization, was later operationalized by Homburg *et al.* (1999). By definition, inter-functional dispersion of the decision process is characterized by the influence of one area over another, or over decision making in general (Homburg *et al.*, 1999). The significance of the above contribution is emphasized by its subsequent adoption as a model in researching the interaction degree among organizational areas. This application also provided a necessary alternative to the existing dyadic analysis of organizational relationships.

Specifically, with respect to decision processes, Homburg *et al.* (1999) highlight the potential for identifying the importance of each functional area equivalent to its strategic value in order to obtain different elements from the organization. Much later, Verhoef and Leeflang (2009) applied this scale in the analysis of the marketing department's influence on market orientation and performance. Other studies that analyze marketing dispersion have no doubt explained the phenomenon though not within the specific organizational process in which it takes place.

In the case of new product development, Troy *et al.* (2008) found that cross-functional integration is more effective at the team level than at the organizational level. Moreover, its impact is "stronger when fewer functions are included in a cross-functional team than when more functions are included". Most

studies focused on marketing, sales and R&D (Troy *et al.*, 2008; Ernst *et al.*, 2010), and on the need to understand the role of other functions also required in NPD processes.

Because marketing dispersion consists in the sharing of information and decision processes (Workman *et al.*, 1998), it is important to note and assess the resulting accumulation of knowledge and management of more decentralized areas. Given that marketing is a necessary function of NPD process (Troy *et al.*, 2008), the higher dispersion of marketing activities could favor the dispersion of the NPD process. Our hypothesis is therefore as follows (Figure 1):

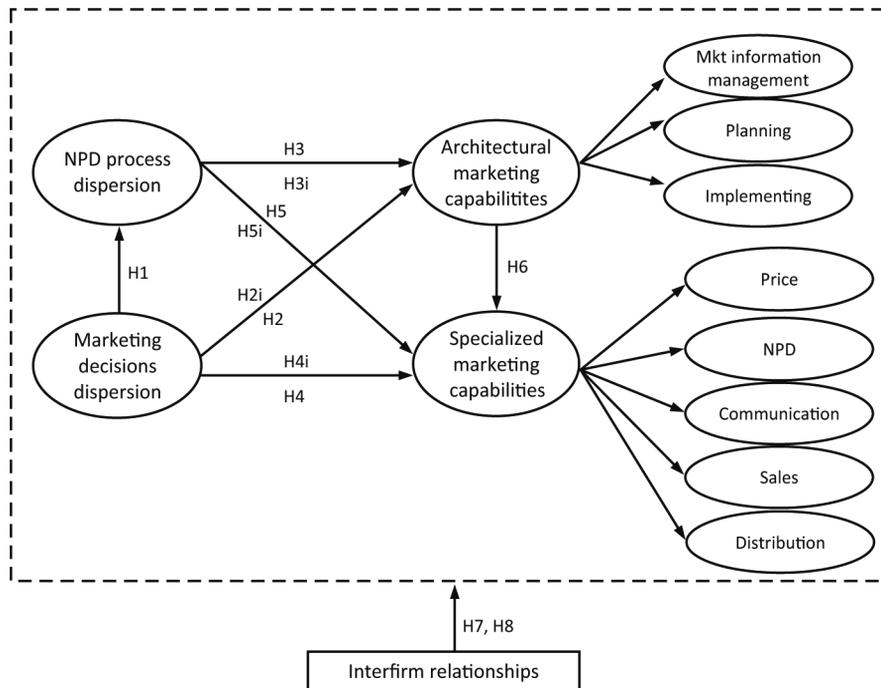
- H1. The dispersion of marketing decisions with respect to the new product shares a positive association with the dispersion of activities in NPD processes.

Strategic marketing capabilities

Marketing capabilities are understood as “complex bundles of skills and accumulated knowledge, exercised through organizational processes that enable firms to coordinate activities and make use of their assets” (Day, 1994).

Distribution and sharing of knowledge occur via four means (Leonard-Barton, 1992):

- (1) the knowledge and technical skills of employees;
- (2) the technical systems that transform knowledge into routine;



Note: “i” denotes hypothesis related with the presence of interfirm relationships

Figure 1.
Conceptual model

- (3) the administrative systems that represent the means to control knowledge; and
- (4) the system of values and norms that represent elements of the organizational culture.

Organizations thus disseminate and share knowledge by means of complex and characteristic processes specific to each structure's design.

Workman *et al.* (1998) have identified a relationship between capabilities and marketing structures. For these authors, the most critical theme of strategic marketing studies should consist of developing an understanding of how organizations should mobilize their chief marketing capabilities when they find themselves divided between areas or units. Since capabilities constitute a knowledge set applied to processes, the limits of functional areas are not a viable reference point in their analysis.

Studies on capabilities, by Vorhies (1998) and Weerawardena (2003) for instance, have used contingency theory to justify the existence of a structural characteristic associated with superior performance. To better understand this relationship, Vorhies and Morgan (2003) analyze the best fit between the dimensions of marketing capabilities and organizational structure in the implementation of strategy. The authors divide capabilities into two groups:

- (1) specialized capabilities; and
- (2) architectural capabilities.

Whereas the first group refers to the performance of activities related to marketing mix and team level, the second is more strategic. It concerns the planning and management of specialized capabilities, and it is such that architectural capabilities exercise an influence on specialized capabilities (Vorhies and Morgan, 2003). This relationship between architectural capabilities and specialized capabilities justifies the need to deepen understanding about the effects of activity dispersion between areas (or firms) and the development of strategic capabilities.

Marketing capabilities are characterized by processes by which knowledge and functional skills are deployed in organizations (Vorhies, 1998). Marketing decisions depend on information and/or orient the activities of a number of departments (Krohmer *et al.*, 2002). As information sharing and decision-making, as a whole, could potentially lead to a greater accumulation of knowledge and of managing skills on information and teams, strategic capabilities could thereby become associated with the dispersion of activities. Moreover, architectural marketing capabilities are developed through experiential market based learning (Morgan *et al.*, 2003), where the sharing of information and knowledge is critical. We therefore hypothesize:

- H2.* Greater dispersion of marketing decisions should be associated with greater architectural marketing capabilities.

Similarly, we anticipate that the sharing of information and decisions on NPD process among a number of functional areas in organizations (Griffin, 1997) would ensure a comprehensive understanding derived from the sharing of knowledge between these areas. Consequently, better decisions would be made:

- H3.* Greater dispersion of NPD activities should be associated with greater architectural marketing capabilities.

Evidence indicates that higher information sharing and higher involvement of several areas in decision-making processes may be counter-productive in processes that necessitate more agility or in those characterized by minor complexity (Troy *et al.*, 2008). We understand that greater integration among areas of an organization adds complexity to processes and thus lessens the organization's decision agility. Moreover, the essential function of integration among organizational areas is related to more complex demands, in which the plurality of knowledge areas and accumulated experiences allows for a differentiated view of the problem. This context should be maintained at a distance from operational activities. We hypothesize:

- H4.* Greater dispersion of marketing decisions shares a negative association with specialized capabilities of marketing.
- H5.* Greater dispersion of NPD activities shares a negative association with specialized capabilities of marketing.

Vorhies and Morgan (2003) identified the influence of the architectural marketing capabilities on the specialized marketing capabilities. We also expect to find this relationship:

- H6.* The degree of architectural marketing capabilities has a positive effect on the specialized marketing capabilities.

Inter-firm relationships

Organizational designs based on inter-firm relationships allow companies to share resources that enable them access to new competitive positions. This justifies the establishment of inter-firm relationships as a means to access knowledge in critical areas, where the organization is both insufficient in requisite knowledge and unable to develop it over time, or under reasonable cost conditions.

Opportunist behavior that protects and threatens the institution of inter-firm relationships is defined by the same logic. According to Das and Teng (2000), the maximization of organizations' interests will make inter-firm relationships feasible only in situations where there is effective superior gain, i.e. to obtain resources not available to the company alone. Opportunist behavior could exert a negative impact on the tendency to establish relationships, as it precedes commitment, trust, and other specific investments in relationships (Palmatier *et al.*, 2007).

The development of inter-firm relationships may be considered a strategic capacity that allows access to superior resources unavailable in other forms. Studies have revealed that these relationships not only distinguish the competency of some organizations but may also function as a form of sustainable competitive advantage (Batt and Purchase, 2004).

The centrality of marketing in creating value for the customer is a critical factor in the development of these relationships. Achrol and Kotler (1999) have characterized marketing as "system's integrator" of value, responsible for the bulk of inter-firm and inter-organizational interactions, which, in turn, enable the delivery of superior value to the market.

Perusal of the literature on lateral marketing relationships, utilized in the performance of their activities (Atuahene-Gima and De Luca, 2008), reveals that so far only inter-functional relationships have received analysis (Homburg *et al.*, 1999;

Krohmer *et al.*, 2002; Troilo *et al.*, 2009). Consequently, inter-firm relationships present the researcher with an unexplored opportunity for observation and analysis.

With regards to learning processes and organizational culture, companies with more flexible structures would be more inclined to establish relationships with other organizations (Webster, 1997). Since these organizations are deployed in establishing inter-functional relationships, they would be characterized by a more dispersed decision-making process and by a higher level of motivation and willingness to share knowledge. Consequently, they would be likely to share ideas more freely (Wijk *et al.*, 2008). As a result, we expect minor structural resistances within organizations when engaging in relationships with other firms specialized in specific processes. We therefore hypothesize:

- H7.* Companies with higher dispersion in marketing decisions should be those with the presence of inter-firm relationships.
- H8.* Companies with higher dispersion in NPD process should be those with the presence of inter-firm relationships.

Several authors, such as Webster (1997), Achrol and Kotler (1999), Das and Teng (2000), and Palmatier *et al.* (2007) for example, suggest that access to resources outside the organization may bring competitive advantages. Cegarra-Navarro (2005) analyzes the relationship between learning and the development of capabilities based on relationships among companies. In this case, companies that lack certain specific resources may find themselves in collaborative relations with other organizations. An organization could, in this way, access higher knowledge and integrate it into its processes, even in those cases where they are external to the firm. Taking these points into consideration, here is our proposition:

- H2i.* Companies utilizing inter-firm relationships may exert a greater dispersion influence of marketing decisions on architectural capabilities.
- H3i.* Companies utilizing inter-firm relationships may exert a greater dispersion influence of the NPD process on architectural capabilities than other companies.
- H4i.* Companies utilizing inter-firm relationships may exert a greater dispersion influence of marketing decisions on specialized capabilities
- H5i.* Companies utilizing inter-firm relationships may exert a greater dispersion influence of the NPD process on specialized capabilities.

Research method

Data collection

The primary data to test our hypotheses were collected by telephone (CATI) from a population of 3,094 furniture manufacturers in Brazil. Our choice of industry was based on the following reasons. The furniture industry develops new product lines on a regular basis, with collections launched at least twice a year. Moreover, specific individuals in the upper echelons of administration are responsible for the NPD process. Companies were selected randomly, and the executive responsible for developing new products was interviewed upon the satisfaction of two criteria:

-
- (1) the company employed more than 15 and less than 200 individuals; and
 - (2) the company clearly assigned specific individuals to be in charge of design, marketing, sales, and production areas.

Our workforce limits derived from having observed that companies with more than 15 employees also identified specific individuals to be responsible for different organizational functions. Our conclusion was drawn from 424 valid cases.

Measurement

Marketing dispersion is a measure of interfunctional structure, and derives from the work of Krohmer *et al.* (2002), itself drawn from an earlier framework proposed for dispersion analysis (Homburg *et al.*, 1999). Marketing dispersion measures the influence of functional areas on marketing decision processes. It was subsequently adapted for the NPD process[1]. In its original form, the process of developing new products is represented by a single indicator. For our research, we increased the number of indicators based on studies that analyzed the best practices for the development of products (Griffin, 1997; Page, 1993). Along with those of Crawford and Di Benedetto (2006), Atuahene-Gima (1995) and Calantone and Di Benedetto (1988), these studies identify a set of stages traditionally used in the development of new products. The stages are categorized as follows:

- detailed market study;
- concept searching;
- concept screening;
- concept testing;
- business analysis;
- technical product development;
- customer field testing;
- production testing; and
- market testing.

We incorporated all these stages in measuring NPD functional dispersion.

We also extended the marketing dispersion construct proposed by Krohmer *et al.* (2002) to the analysis of dispersion of activities between organizations, i.e. inter-firm relationships. To this end, in addition to the functional areas of the organization, we included an alternative to evaluate the influence of another organization on the performance of activities (see Appendix 1). Inter-firm relationships constituted a dichotomous variable that denoted the presence or absence of these relationships in NPD processes or marketing decisions.

Marketing capabilities measurements were adapted from Vorhies and Morgan (2005). The measurement scale has 35 indicators that include the following factors:

- price;
- development of new products;
- distribution;
- communication;

- sales;
- market information management;
- planning; and
- marketing implementation.

This is a comparative five-point scale. Capabilities are assessed in relation to the main competitor (Day, 1994). Extremes represent such aspects as “much worse” and “much better” (see Appendix 2). These factors formed the second-order architectural (i.e. market information management, planning and marketing Implementation) and specialized capabilities (i.e. price, development of new products, distribution, communication and sales) (e.g. Vorhies and Morgan, 2003).

Measure reliability and validity

We have analyzed the data using confirmatory factor analysis (CFA) and reliability analysis. We analyzed the constructs in sets of variables that are theoretically inter-related. The grouping of these indicators resulted in a first-order construct for the dispersion of NPD activities and decisions and in a second-order construct for marketing architectural and specialized capabilities. All the measurement models fit well with the data, as can be seen in the statistics for the new product development and marketing process dispersion and for marketing capabilities (Appendix 3).

All the items had significant loadings in the first-order constructs. We have also examined the average variance extracted (AVE) of each construct and compared with the shared variances among our constructs (Anderson and Gerbing, 1988). All values presented acceptable results. For discriminant validity, we used the comparison of both CFA models, one with freely estimated parameters, and the other with the parameters constrained. Results indicated that the χ^2 of the freely estimated models were significantly inferior, which indicates discriminating validity for the constructs (Bagozzi *et al.*, 1991).

Results of hypotheses tests

We tested the model hypotheses with three approaches. For direct relationships of the model, results of the structural equation modeling were verified. In addition, the comparison of models between open design companies, characterized by the presence of interfirm relationships, and closed design companies was made by the analysis of sub-groups. Sub-groups were defined by the presence ($n = 184$) or the absence ($n = 240$) of other companies participating in the NPD activities or marketing decisions.

The relationship between the marketing decisions dispersion and the NPD process (*H1*) was confirmed. A significant influence of marketing decisions dispersion on the NPD process dispersion was found (Table I).

We hypothesized a significant relationship between marketing dispersion and the establishment of inter-firm relationships (*H7*). The test was carried out by means of the same sub-groups analysis technique in SEM. However, in this analysis, we only used the constructs of Marketing and NPD dispersion. The fit values obtained for these constructs were acceptable (CFI = 0.974, RMSEA = 0.035). The analysis of results between the two groups indicate a *t*-value of 2.089 ($p < 0, 05$) between the groups. This result confirms that the estimated averages for the latent constructs involved in

	Coefficient	t-value
Marketing dispersion → NPD dispersion	0.823	12.134 ($p < 0.001$)
NPD dispersion → Architectural capabilities	-0.366	-3.058 ($p < 0.01$)
NPD dispersion → Specialized capabilities	0.099	1.024 (NS)
Marketing dispersion → Architectural capabilities	0.325	2.754 ($p < 0.01$)
Marketing dispersion → Specialized capabilities	-0.044	-0.461 (NS)
Architectural capabilities → Specialized capabilities	0.753	8.851 ($p < 0.001$)
<i>Overall model fit</i>		
χ^2	1,276.84	
df	800	
p	<0.001	
CFI	0.958	
RMSEA	0.038	
TLI	0.955	

Table I.
Overall main effects and interaction effects

marketing dispersion are significantly different in companies with inter-firm relationships from those in others. This result supports *H7*.

As for marketing decisions dispersion, two relationships were addressed. The first was the positive influence of marketing dispersion on architectural marketing capabilities. This shows that the inter-functionality of processes – sharing of information and decisions, participation of specialists with different backgrounds, greater involvement of participants, and strategic consensus (Homburg *et al.*, 2002; Olson *et al.*, 1995; Ruekert and Walker, 1987a, b) – is able to influence the development of superior marketing capabilities. It is important to note that the said influence is seen in architectural capabilities, i.e. in those activities of marketing management specifically associated with strategy. Consequently, if the relationship with operational capabilities is insignificant, a greater inter-functionality supports competitive differentials associated with process management. This confirms *H2*.

As far as the dispersion of the development of new products process is concerned, a negative influence is found on the marketing architectural capabilities construct, a result that refutes *H3*. Thus, the increase of inter-functional dispersion in the process of product development results in minor capabilities related to the strategy. Initially, one must consider that the process of product development to be typically a multidisciplinary activity, which, in many cases, is not controlled by marketing (Workman, 1993). This process is an organizational function characterized by the combination of several competences to create market value (Srivastava *et al.*, 1999). The meta-analysis of Troy *et al.* (2008) identifies the importance of the participation of marketing areas and R&D in the early stages of the process in product success. In the other stages, however, other areas, like design, engineering, and operations, prevail. Similar results were also found in this study. The meta-analysis also reveals that increased integration between areas and the number of functions involved in the process tends to lessen the significance of marketing influence. For the above authors,

marketing contribution tends to be more effective in services, which privileges customer interaction, than in contexts of products purchase.

No relationship was found between inter-functional activities and marketing decisions with specialized capabilities (*H5* and *H4*). According to studies in this field, the absence of the relationship may be related to a greater need for productivity and agility in performing these activities, and also to the minor complexity of tasks at a more operational level. Consequently, there is a lesser need to share information towards the accomplishment of these activities. The meta-analysis of Troy *et al.* (2008) counts these elements among the disadvantages of inter-functional integration processes.

As for capabilities, we found that architectural capabilities influence specialized capabilities (*H6*). This was a predictable result in view of the theoretical relationship between latent dimensions and evidence gained from studies utilizing these constructs (Vorhies and Morgan, 2003).

When comparing company groups with inter-firm processes expressing a more open design and those without established inter-firm relationships, the sample was divided into two sub-groups. As discussed earlier, the sub-groups were defined by the presence ($n = 184$) or the absence ($n = 240$) of other companies participating in the NPD activities or marketing decisions. The results of this analysis appear in Table II.

Existing studies on strategy and marketing are highly conceptual. In contrast, our study addresses two concrete features of inter-firm relationships – their influence and their centrality in the explanation of relationships involving marketing decisions, NPD process dispersion, and architectural and specialized marketing capabilities.

	Presence of inter-firm relationship		Absence of inter-firm relationship	
	Coefficient	<i>t</i> -value	Coefficient	<i>t</i> -value
Marketing dispersion → NPD dispersion	0.843	6.001 ($p < 0.001$)	0.807	10.499 ($p < 0.001$)
NPD dispersion → Architectural capabilities	-0.804	-2.945 ($p < 0.001$)	-0.214	-1.605 (NS)
NPD dispersion → Specialized capabilities	0.192	0.920 (NS)	0.097	0.868 (NS)
Marketing dispersion → Architectural capabilities	0.844	3.157 ($p < 0.001$)	0.161	1.223 (NS)
Marketing dispersion → Specialized capabilities	-0.199	-0.947 (NS)	-0.010	-0.093 (NS)
Architectural capabilities → Specialized capabilities	0.868	5.533 ($p < 0.001$)	0.707	6.824 ($p < 0.001$)
<i>Overall model fit</i>				
<i>n</i>	184		240	
χ^2	1,112.5		1,128.7	
df	800		800	
<i>p</i>	<0.001		<0.001	
CFI	0.919		0.957	
RMSEA	0.052		0.038	
TLI	0.913		0.954	

Table II.
Sub-groups analysis

The results of the analysis (Table II) indicate the influence of inter-firm relationships on the formation of marketing capabilities. In companies with an organizational design that contemplates inter-firm relationships, we found a significant influence of dispersion of marketing decisions and of the NPD process on capabilities. We also observed that the dispersion of marketing decisions significantly influences architectural capabilities only in companies with inter-firm relationships (*H2i*). Access to specialized knowledge external to the organization thus defines the processes of information management, planning, and the implementation of marketing strategies.

In addition, architectural capabilities are negatively influenced by the dispersion of NPD process, refuting *H3i*. This result suggests that the participation of other companies in the development of new products might introduce greater complexity into the planning and implementation of strategies.

Our results also show that companies with inter-firm relationships did not manifest a significant influence of dispersion of marketing decisions (*H4i*) and the NPD process (*H5i*) on specialized capabilities.

Conclusions

Our study is an attempt to present a comprehensive picture of the configuration of organizational design and its implications for strategy. Other studies have treated individual elements of organizational design such as inter-functionality of processes, interfirm relationships, and strategic capabilities (Ruekert and Walker, 1987a, b; Achrol, 1997; Das and Teng, 2000; Vorhies and Morgan, 2003). Some authors have addressed the importance of the structural vision of the organization (Noble, 1999; Workman *et al.*, 1998; Skivington and Daft, 1991) and relationships established between the companies to access higher capabilities (Achrol and Kotler, 1999; Webster, 1997; Day, 1997) on conceptual articles. Our findings, which identify concrete relationships between organizational design and strategy, bridge an evident gap in existing analyses.

Not least, our findings also confirm previous propositions about the influence of organizational design on the development of capabilities of planning and the implementation of marketing (Ruekert *et al.*, 1985; Ruekert and Walker, 1987a, b; Webster, 1997; Piercy, 1998; Noble, 1999, among others). We conclude that organizations should reconsider processes that integrate their structures in order to exploit opportunities in the creation of superior value (Webster, 1997; Srivastava *et al.*, 1999).

So far, the potentially rich application of Homburg *et al.*'s (1999) dispersion construct in the analysis of the role of functional structures in decision and operational processes has remained largely untapped. The analysis of relationships between functional areas has consequently received scant attention in the literature of the field. Our study has adapted and expanded the dispersion construct in an attempt to assess the inter-functionality of processes and the relationship of the integration range of areas with other elements.

The analysis of the different relationships of the dispersion of NPD and marketing decisions constructs also reveals new points of consideration in the study of implementation. Our conclusion that the dispersion of marketing decisions precedes marketing capabilities corroborates theoretical propositions by Day (1997) and Piercy (1998) that associate the ability to perform processes of higher complexity with more

flexible or hybrid structures. Detailed observation of this relationship reveals that the influence takes place not in specialized capabilities but in architectural capabilities. This finding contributes to the understanding that elements associated with a higher dispersion of marketing provide better capacities for the analysis, planning, and implementation of marketing. The elements would be information sharing, integration of processes and resources, and inter-dependence between activities and shared decision process (Ruekert and Walker, 1987a). The identification of non-significant relationships with respect to specialized capabilities also serves to further enhance existing understandings of the influence of higher inter-functional integration. Here, we call attention to the influence of the dispersion of marketing decisions on the dispersion of NPD process. We observed that a higher integration of the areas in marketing decisions was related to the dispersion of the NPD process. It is commonly understood that the dispersion in NPD is a disseminated practice. We found that increased dispersion in marketing activities impacts product development. We argue that our results reflect what Webster (1997) classifies as flexible structures, companies that share activities and knowledge.

Among our surprise findings was the negative influence of the dispersion of NPD on architectural marketing capabilities, a relationship our study did not originally propose. We suggest that this finding might be credited to the multi-functionalism of the process (Workman, 1993), or perhaps to a decline in marketing influence that begins to take place as other areas gain importance. We hope that future studies will propose better answers to understand the limits of inter-functional processes.

Some methodological limitations must be addressed. We focused our research on the Brazilian furniture SMEs. Therefore, our findings are bounded by the cultural and industrial context. Each of the 424 cases corresponds to one company, where the person identified as being responsible for new product development was interviewed. In this situation we could have single source bias in our data collection process.

Finally, we think that future research can be conducted in some different directions. Considering the academic and managerial interest in the deeper understanding of inter-firm cooperative processes (i.e. open innovation) and its gap in the marketing field, further research efforts could investigate the antecedents of the propensity to establish relationships with other firms in marketing and new product development processes. Moreover, we find little literature approaching more innovative capabilities, processes and/or structures that enable firms to innovate consistently; therefore, we suggest that further research provide contributions to understand: how innovative firms structure their marketing areas; what kind of capabilities are required in this companies; and how marketing processes are connected to other areas like R&D, design, engineering, and external structures. In addition, we consider that the marketing literature should be focused on the day-by-day activities, rather than just on strategic processes; therefore, future studies could analyze how the daily processes and constraints influence the relationship between organizational structure and marketing capabilities.

Note

1. We considered the percentage of influence of diverse areas on the performance of each activity. Dispersion is calculated by standard deviation averages of each one of the indicators. These averages were converted into a scale of 100 points, in which 0 indicates no dispersion, and 100 total dispersion (Krohmer *et al.*, 2002).

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	Marketing		Sales		R&D and design		Production		Finance		Other companies	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
<i>Dispersion of marketing activities^a</i>												
Marketing activities companies												
Pricing decisions	9.08	18.24	40.16	33.98	8.30	15.39	11.63	17.83	26.21	32.29	3.79	11.75
Decisions on design of customer service and support	12.71	23.99	44.49	33.41	8.76	15.60	15.36	22.93	12.70	23.72	3.60	11.40
Decisions on expansions into new markets	14.14	24.84	45.96	33.94	8.22	15.14	14.43	21.65	10.65	20.52	5.00	14.84
Distributions decisions	11.32	22.02	45.30	34.65	6.67	13.85	18.10	26.75	10.38	20.37	4.43	14.01
Advertising messages decisions	20.77	32.73	38.03	36.93	5.99	12.96	7.66	16.83	11.29	24.56	6.53	18.74
<i>NPD process dispersion^b</i>												
NPD process												
Detailed market study	9.93	18.34	30.80	27.48	18.30	23.32	21.82	22.79	10.37	16.89	8.00	16.12
Concept searching	11.88	22.71	28.16	29.21	21.12	27.88	19.26	23.69	9.32	18.05	7.37	17.21
Concept screening	6.64	16.03	21.58	26.39	15.99	22.28	40.40	35.11	7.02	16.24	5.01	14.22
Concept testing	9.52	20.65	26.75	29.22	18.56	25.91	26.66	28.56	7.01	14.66	5.68	15.75
Business analysis	9.37	19.05	33.40	29.66	15.03	22.37	25.39	27.27	9.84	18.81	5.57	14.94
Technical product development	6.83	17.14	22.10	27.22	16.12	24.00	43.54	36.44	5.41	12.96	4.36	13.00
Customer field (use) testing	8.74	18.90	31.11	34.24	10.17	19.13	16.93	25.60	4.21	11.62	6.18	18.30
Production testing	6.19	15.58	21.31	28.24	12.07	21.08	46.76	39.77	6.73	17.96	3.96	12.85
Market testing	10.16	21.65	39.32	35.82	8.58	16.95	17.13	26.70	5.38	15.46	6.38	18.26

Notes: (1) means indicate the influence of each area on specific decision processes. (2) This mean was rescaled: 0 indicates the absence of inter-functional dispersion and 100 maximal dispersion
Sources: ^aAdapted from Krohmer *et al.* (2002); ^bAdapted from Krohmer *et al.* (2002) and Crawford and Di Benedetto (2006)

Table AI.

Appendix 2

Please rate your business unit relative to your major competitor in terms of its marketing capabilities in the following areas. Five-point scale running – 1 (much worse than competitor) to 5 (much better than competitor)

Pricing

- Using pricing skills and systems to respond quickly to market changes.
- Knowledge of competitors' pricing tactics.
- Doing an effective job of pricing products/services.
- Monitoring competitors' prices and price changes.

Product development

- Ability to develop new products/services.
- Developing new products/services to exploit R&D investment.
- Test marketing of new products/services.
- Successfully launching new products/services.
- Insuring that product/service development efforts are responsive to customer needs.

Distribution

- Strength of relationships with distributors.
- Attracting and retaining the best distributors.
- Closeness in working with distributors and retailers.
- Adding value to our distributors' businesses.
- Providing high levels of service support to distributors.

Communication

- Developing and executing advertising programs.
- Advertising management and creative skills.
- Public relations skills.
- Brand image management skills and processes.
- Managing corporate image and reputation.

Selling

- Giving salespeople the training they need to be effective.
- Sales management planning and control systems.
- Selling skills of salespeople.
- Sales management skills.
- Providing effective sales support to the sales force.

Market information management

- Gathering information about customers and competitors.
- Using market research skills to develop effective marketing programs.
- Tracking customer wants and needs.
- Making full use of marketing research information.
- Analyzing our market information.

Marketing planning

- Marketing planning skills.
- Ability to effectively segment and target market.
- Marketing management skills and processes.
- Developing creative marketing strategies.
- Thoroughness of marketing planning processes.

Marketing implementation

- Allocating marketing resources effectively.
- Organizing to deliver marketing programs effectively.
- Translating marketing strategies into action.
- Executing marketing strategies quickly.
- Monitoring marketing performance.

(Source: adapted from Vorhies and Morgan (2005))

Appendix 3

Marketing capabilities	Cronbach's α	Composite reliability	Average variance extracted
<i>Specialized capabilities</i>			
Product development	0.69	0.69	0.45
Pricing	0.71	0.72	0.47
Distribution	0.82	0.82	0.54
Communication	0.86	0.86	0.55
Selling	0.88	0.88	0.60
<i>Construct measurement fit</i>			
χ^2/df	2.040		
p	< 0.000		
CFI	0.955		
RMSEA	0.050		
TLI	0.948		
<i>Architectural capabilities</i>			
Market information management	0.82	0.83	0.55
Marketing planning	0.89	0.90	0.69
Marketing implementation	0.94	0.94	0.79
<i>Construct measurement fit</i>			
χ^2/df	3.542		
p	< 0.000		
CFI	0.971		
RMSEA	0.078		
TLI	0.962		

Table AII.

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NPD process and marketing activities dispersion	Cronbach's α	Composite reliability	Average variance extracted
NPD process dispersion	0.883	0.88	0.51
Construct measurement fit			
χ^2/df	2.676		
p	0.001		
CFI	0.982		
RMSEA	0.063		
TLI	0.973		
Marketing activities dispersion	0.918	0.91	0.56
Construct measurement fit			
χ^2/df	1.488		
p	< 0.01		
CFI	0.996		
RMSEA	0.034		
TLI	0.994		

Table AIII.

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