Aalborg Universitet

AALBORG UNIVERSITY

DENMARK

Organizing for strategic sourcing

Lidegaard, Nina; Munkgaard Møller, Morten; Boer, Harry

Published in:
Proceedings 14th International CINet Conference on Business Development and Co-creation

Publication date:
2013

Document Version
Publisher's PDF, also known as Version of record

Link to publication from Aalborg University

ORGANIZING FOR STRATEGIC SOURCING

Nina Lidegaard[*], Morten M. Møller, and Harry Boer

Aalborg University, Denmark

[*]nl@business.aau.dk

ABSTRACT

The strategic importance of sourcing has increased during the past two decades. Strategic sourcing does not only include buying manufacturing inputs, but also, for example, sourcing innovation inputs from, and even co-development of technologies together with, suppliers. This has serious implications for the sourcing process, its characteristics and organization. However, previous studies have shown that none of the two prevailing solutions, functional departments and cross-functional teams, produce the desired results.

The purpose of this paper is, first, to present, and discuss the success of, the functional and team-based organization of strategic sourcing processes and, then, to propose an agenda for research aimed at developing a process-based model of effectively organizing for strategic sourcing.

Keywords: Strategic sourcing, sourcing excellence, organization.

1. INTRODUCTION

Over the past decades the importance of the sourcing process for company strategy (Ellram and Carr, 1994; Trent and Monczka, 1998) and performance (Narasimham *et al*., 2001) has changed considerably. Today, corporate spending related to externally acquired goods and services accumulates up to 70% of manufacturing companies' purchase-to-sale ratio (Axelsson *et al*., 2005; Saranga and Moser, 2010) and in some case even more. Moreover, the role of what used to be a clerical, functionally organized, procurement process has evolved into a strategic sourcing process (Chen *et al*., 2004; Ramsay and Croomb, 2008; Payne *et al*., 2012), playing an increasingly important role in the sourcing, not only of manufacturing inputs (e.g. material, parts and components), but also of innovation inputs (e.g. knowledge and technologies) and, thus, in the innovation processes of companies.

The changed nature of the sourcing process should have and has indeed had implications for the organization of the sourcing process (Van Weele and Rozemeijer, 1996; Bakker *et al*., 2008). Companies have tried out various solutions, ranging from the use of centralized, decentralized, or a hybrid configuration of, functional departments to the adoption of cross-functional teams. None of these solutions has really solved the problem of organizing the strategic sourcing process effectively.

The objective of this paper is 1) to present and discuss what the literature says about the functional and team-based organization of the sourcing process, and to show that neither form is quite so successful, and 2) to suggest a research design, taking a more fundamental approach, departing from process characteristics, aimed at developing insight into more effective ways to organize the strategic sourcing process.

Accordingly, the paper consist of two parts:

1. A presentation, and discussion of the success of, the functional and team-based organization of strategic sourcing processes.
2. An agenda for research aimed at developing a process-based model of effectively organizing for strategic sourcing.

2. RESEARCH METHODOLOGY

In order to identify literature on the organization of sourcing processes, a conventional subject search (Papaioannou *et al*., 2009) was conducted in five databases: ABI/INFORM, Business Source Premier, ProQuest Research Library, Scopus, and Web of Knowledge. The search was completed in June 2013. The keywords were based on the two constructs in the research objective, i.e. organizing and strategic sourcing. The keywords were adapted to suit the individual databases' thesaurus, if applicable. The search string was executed in thesaurus terms as well as the paper's keywords or abstract, dependent on the features of the database addressed. The possible combinations of the key words are presented in Table 1. The use of truncation allows for the databases to cover both UK and US English spelling.

Purchasing *OR*		Process *OR*			Electronic procurement *OR*
Purchasing department* *OR*		Organi?ation *OR*			Health care *OR* Medic* *OR*
Corporate purchasing *OR*		Organi?ation theor* *OR*			Health *OR* Computer *OR*
Supply chain management *OR*		Organi?ational structure *OR*			Electronic commerce *OR*
Supply chain* *OR*	A	Organi?ational research *OR*	N		Outsourcing *OR*
Sourcing *OR*	N	Team *OR*	O		E-procurement *OR*
Procurement *OR*	D	Process* *OR*	T		Ethic* *OR* Electronic
Purchaser *OR*		Buying behavior *OR*			commerce *OR* Online *OR*
Cross-functional		Buying behaviour			Internet-based procurement
					OR Retail *OR* Retail industry
					OR Consumer*

Table 1. Keyword Based Search

2.1 IDENTIFICATION OF SOURCES AND FILTERING PROCESS

The rather general nature of the keywords implies that the majority of the results may not be relevant; hence a thorough filtering process is needed. First, a search was conducted within English peer-reviewed journal publications. A time span of around 20 years seems relevant as academia (e.g. Van Weele and Rozemeijer, 1996) began addressing the issue of organizing the sourcing process in the 1990s. Hence, publications from 1990-2013 were included in the literature study.

The initial search resulted in 9288 papers; 7742 papers remained after duplicates were removed. The next step in the inclusion/exclusion process involved an assessment of the relevance of journals. Following Spina *et al*. (2013), 20 journals considered relevant for purchasing and supply management were included in the database. In addition, journals believed to address the process organization were included. As a result, 25 journals and 1853 papers remained (see Table 2).

The final coding was done by two of the three authors, interpreting the papers and using the inclusion/exclusion criteria presented in Table 3.

Both researchers coded the papers individually. The common papers were immediately included in the pool of relevant papers. Papers included by one researcher were re-evaluated. As a result, 58 papers were included directly; 34 were added in the second round. Hereafter, the 92 papers were read and further analyzed based on content. This resulted in 29 articles directly addressing ways of organizing the strategic sourcing

process (the other 63 articles focused on topics such as chief procurement officer skills, marketing, or team collaboration in general). The process of identifying relevant literature is summarized in Table 4.

Journals included	Total number of papers	Papers included	Papers selected
Decision Sciences	28	-	-
European Economic Review	1	-	-
Eur. J. of Purchasing and Supply Mgt.	10	5	2
Harvard Business Review	26	2	-
Industrial Marketing Management	118	16	4
Int. J. of Operations & Production Mgt.	154	5	2
Int. J. of Production Economics	389	6	1
Int. J. of Production Research	332	-	-
Int. J. of Purchasing and Materials Mgt.	49	5	5
J. of Management Studies	6	-	-
J. of Marketing Research	10	2	-
J. of Operations Management	111	6	1
J. of Product Innovation Management	47	2	-
J. of Purchasing & Supply Mgt.	37	13	9
J. of Supply Chain Management	62	13	5
Management Science	91	4	-
Organization Science	28	1	-
Organization Studies	6	1	-
Production Planning & Control	122	1	-
Research Policy	21	-	-
Strategic Management Journal	19	1	-
Supply Chain Forum: Int. Journal	8	-	-
Supply Chain Management	64	5	-
Supply Chain Management – An Int. J.	82	2	-
Technovation	32	2	-
Total	1853	92	29

Table 2. Journals included and papers selected

Inclusion Criteria

Organization theory	Teams:
Organization(s) and/or enterprise type	- Commodity
Organizational structure	- Cross-functional
Coordination	- Category
Integration	- Members
High tech	
Organization of sourcing	Sourcing/procurement/purchasing:
Organizational practices	- Process
Sourcing/procurement/purchasing	- Function
Strategic sourcing	- Department

Exclusion Criteria

E-procurement	Network
IT systems	Logistics
Customer relations	Economics e.g. TCO
Consumer	Outsourcing
Supply chain management	Marketing
Risk management	

Table 3. Inclusion and exclusion criteria

Original search	Removal of duplicates	Selected journals	Included papers	Selected papers
9228	7742	1853	92	29

Table 4. Overview of the literature study

3. RESULTS

The review revealed two main approaches to organizing the strategic sourcing process, through functional department and cross-functional teams, respectively. These organizational designs differ in terms of job and unit design, the type of coordination needed, as well as the role of trust, commitment and motivation (see Table 5). While both designs do not mutually exclude one another (in fact, Johnson *et al*. (1998a) report that commodity teams as well as cross-functional teams are more likely to be present in a centralized or hybrid structure than in the decentralized structure), the next sections address them separately, with a particular focus on the role of coordination and management issues involved in their implementation and operation.

3.1 FUNCTIONAL DEPARTMENTS

The first perspective concerns organizing the sourcing process in functional departments. Three forms of organization have been reported in the literature, the centralized, the decentralized and the hybrid forms, respectively. The centralized form, which places the sourcing process close to the strategic apex of the company (Karjalainen, 2011), supports the utilization of economies of scale (Johnson and Leenders, 2004). The decentralized structure places the decision-maker closer to the suppliers, and promotes close, externally oriented relationships (Johnson and Leenders, 2004, 2006). Finally, research indicating that some degree of centralization is necessary to facilitate the strategic implications of the sourcing process (Johnson *et al*., 1998a; Johnson and Leenders, 2006) supports the hybrid organization, where the responsibility for the sourcing process is split between centralized and decentralized units.

3.1.1 COORDINATION

Despite the variety of organizational structures that fall within the functional perspective, there are common characteristics. The functional design fosters specialization, as the purchasers (need to) handle all purchases within one product category (Johnson and Leenders, 2004). Especially the delegation of control to decentralized purchasers could inspire autonomy and thereby promote decisions favoring the given business unit rather than the company as a whole (Johnson and Leenders, 2006). In a functional structure, purchasers with similar jobs and skills are pooled together in departments (Arnold, 1999). Consequently, interdepartmental coordination mechanisms are necessary to promote the strategic goals of the company.

3.1.2 MANAGERIAL ROLE

Most companies use a hybrid configuration comprising both centralized and decentralized elements. A hybrid structure can resemble either the centralized or decentralized form significantly, e.g. only the contracting task can be centralized, while the remaining tasks are decentralized (Parikh and Joshi, 2005). In any case, the role of the management is to create suitable interdepartmental coordination mechanisms, which make up for the division of responsibilities and ensure that the purchasers do not optimize their functional departments over the strategic aims of the company. Planning

and, especially, control systems (*cf.* Mintzberg, 1979), in the form of policy deployment and supported by a performance management system is one possibility.

3.2 CROSS-FUNCTIONAL TEAMS

The team perspective dominates in the literature. Using teams in sourcing activities was introduced in the 1980s in the form of buying centers (Miocevic, 2011). Subsequently, cross-functional teams emerged with the sourcing function getting more and more involved in the planning and execution of more complex (e.g. concurrent engineering) and less routine (e.g. innovation) projects, crossing the boundaries of functional silos (Pinto *et al.*, 1993; Pearson, 1999). Trent and Monczka (1994) report that cross-functional teams had become a major part of the sourcing organization. However, not much later, Murphy and Heberling (1996, p. 12) conclude: "*Unfortunately, although many firms have tried this team approach during the past decade, most are still struggling to reap the advertised benefits of the teaming concept*".

3.2.1 COORDINATION

Cross-functional teams are composed of professionals from at least three functions (Trent and Monczka, 1994) such as product design, research and development, marketing, product distribution, finance, and sourcing (Van Weele and Rozemeijer, 1996; Driedonks *et al.*, 2010). Murphy and Heberling (1996, p.12) exemplify the traditional coordination task: "*A classic example is seen in the traditional relationship between engineering and purchasing. In the past, the two functions have not understood each other well, with engineering working on designs and specifications, then passing them on to purchasing in a serial fashion*". In contrast, the core type of relationship within cross-functional teams is reciprocal, rather than sequential (i.e. serial), interdependence (*cf.* Thompson, 1967).

3.2.2 MANAGERIAL ROLE

The use of cross-functional teams should overcome the limitations of functional departments. This entails a major change and, indeed, active management involvement.

Cross-functional collaboration is a complex process, which needs to be supported by cross-functional training (Murphy and Heberling, 1996). Isolating sourcing decisions from the remaining organizational context could result in lost competitive advantage (Durrani *et al.*, 1998).

Management can create unity between the members of a team, and ensure loyalty towards the team and its cross-functional activities by creating and maintaining a trusting and motivating environment for the team to operate in. The managerial role, therefore, includes ensuring that team members are trained in (Murphy and Heberling, 1996) and made responsible for (Majchrzak and Wang, 1996) cross-functional teamwork.

3.3 EXPERIENCES WITH DEPARTMENTAL AND TEAM-BASED FORMS OF ORGANIZATION

The use of cross-functional teams makes logical sense. Moving to strategic sourcing implies changes in the competence profile needed to deal adequately with the sourcing portfolio (Møller *et al.*, 2013; Rozemeijer *et al.*, 2005). Sourcing commodities is one thing – sourcing knowledge and technology quite another. Using cross-functional sourcing teams could solve this problem (Driedonks *et al.*, 2010; Trent and Monczka, 1998; Carter *et al.*, 2000). However, time and again, cross-functional sourcing teams do

	Functional departments	**Cross-functional teams**
Job design	There are defined lines between departments and responsibilities are clearly specified – e.g. Parikh and Joshi (2005).	Team members each contribute with specialized skills – e.g. Murphy and Heberling (1996, p. 13) state that successful teams "… *put the* **right people** *(right qualifications), in the right place (in the team that needed their skills), at the* **right time** *(when those skills are needed)."*
Unit design	Similar skills are pooled together in departments, which provides the most efficient use of available purchasing skills (e.g. Arnold, 1999).	Different skills are pooled together in teams. The sourcing team handles everything connected to a purchase.
Coordination	Dependent on the configuration of decentral and central – e.g. Rozemeijer (2000) argues that business unit homogeneity and purchasing maturity are determinants for the proper design.	Coordination mechanisms are organic and the nature of personal collaboration becomes an issue. The teams themselves become a coordination mechanism, as Johnson *et al.* (2002, p. 79) state "... *various forms of purchasing teams can be used to structure formal integration both between functional areas internally and across suppliers and customers externally*".
Trust & commitment	People tend to trust employees aiming at fulfilling the same goals as themselves. This can inspire a situation where trust is given only to those within the same department or function.	Trust should be build between the team members. Team spirit becomes an important factor - e.g. Englyst *et al.* (2008).
Motivation	Focus on departmental goals. Often there is a tendency to focus on budgets – e.g. Moses and Åhlström (2008) mention misaligned functional goals.	Focus on team goals. It is important to ensure that the contribution to team work is included in the performance evaluation of the departments, which contribute with members to the cross-functional team; otherwise the team members might focus on achieving their respective departments' goals rather than focus on the team task – e.g. Englyst *et al.* (2008).
All references	Arnold (1999); Englyst *et al.* (2008); Hartmann *et al.* (2008); Johnson and Leenders (2004); Johnson and Leenders (2006); Johnson and Leenders (2001); Johnson *et al.* (1998a); Johnson *et al.* (1998b); Karjalainen (2011); Kim (2007); Laios and Moschuris (2001); Lau *et al.* (1999); Parikh and Joshi (2005); Rozemeijer (2000); Trent, (2004)	Andersen and Rask (2003); Carter *et al.* (2000); Driedonks *et al.* (2010); Englyst *et al.* (2008); Faes *et al.* (2000); Giunipero and Pearcy (2000); Hartmann *et al.* (2008); Hult and Nichols Jr. (1996); Johnson *et al.* (2002); Johnson and Leenders (2006); Johnson *et al.* (1998a); Johnson *et al.* (1998b); Laios and Moschuris (2001); Lakemond *et al.* (2001); McWilliams *et al.* (1992); Moses and Åhlström (2008); Murphy and Heberling (1996); Rozemeijer (2000); Trent (1998); Trent, (2004); Trent and Monczka (1994); Van Weele and Rozemeijer (1996)

not appear to live up to expectations. One of the causes reported in the literature is lack of the managerial support (Cousins *et al.*, 2006; Carter and Narasimhan, 1996; Miocevic, 2011) needed for the functional departments to genuinely contribute to the sourcing teams.

According to Rozemeijer and Van Weele (2007, p. 5): "*... most corporate sourcing initiatives tend to be aimed at short-term cost reductions. In many of those cases external consultants are hired to drive the corporate sourcing initiatives. However, when the consultants leave, very often companies gradually return to their old ways of working*". Johnson and Leenders (2006) report that only 19 of the 51 companies they studied kept the same organizational structure of their sourcing and supply functions from 1987, through 1995, to 2003. Six companies changed structure between 1987 and 1995, and back to their 1987-structure between 1995 and 2003. The remaining 26 companies had a different structure in 2003 compared to 1987. This suggest that the problem is *not* that companies are not prepared to change their sourcing organization, but rather related to *what* to change to.

An empirical example of a Danish assembly company illustrates the problem. As part of a global corporation with annual revenue of approx. Euro 500 million, the case company is familiar with sourcing from both local and global suppliers. Originating from a centralized, functionally organized purchasing department, the company has reorganized into centrally coordinated cross-functional sourcing teams, each responsible for sourcing a certain component. The teams consist of technical and commercial professionals. Not only has the company experienced difficulties implementing the cross-functional teams, it also faces a puzzle: two identically organized sourcing teams perform differently. One team performs acceptably, while the other does not. In general, the company experiences the situation described by Rozemeijer and Van Weele (2007) – it has not obtained the promised positive effects of reorganizing the sourcing process. Further examination reveals that the two sourcing teams operate in different contexts. One team sources standardized products from a global market, while the other team designs solutions together with a local supplier.

The example of this case company indicates that adopting such a uniform approach is too simple – *one-size-fits-all* solutions do not necessarily work, if they do not match the intricate tasks related to the individual sourcing processes. This observations supports the proposition that a new, more fundamental, way of looking at the organization of sourcing processes is needed, a process-based approach, which takes differences between sourcing processes, even within the same company, into account.

4. TOWARDS A PROCESS-BASED MODEL OF STRATEGIC SOURCING ORGANIZATION

One aspect that has been largely overlooked in the literature is that the transition from a clerical, functionally organized, procurement process to a strategic sourcing process (Chen *et al.*, 2004; Ramsay and Croomb, 2008; Payne *et al.*, 2012) has significant implications for the characteristics of the process and, in effect, the organizational (job and unit design, coordination) context needed to support the process effectively.

4.1 PROCESS CHARACTERISTICS AND COPING STRATEGIES

Fundamental contributions to the development of theory on process-organization fit are Perrow (1967), who identifies variety and analyzability as the two distinguishing characteristics of "*the work done in organizations*" (*ibid.*, p. 194), Thompson (1967),

who focuses on interdependence as a core process characteristic, and Galbraith (1973), who discusses the role of uncertainty.

4.1.1 UNCERTAINTY

(Un)certainty (e.g. Thompson, 1967; Galbraith, 1973), also referred to as (un)predictability (e.g. Mintzberg, 1979), is the extent to which individuals, groups or organizations are informed about the future. Uncertainty may concern objectives to be pursued, activities to be performed in order to achieve desirable results, the people needed to perform the activities, arrangements regulating their collaboration, and the influence of the organization's context (Galbraith, 1973; Simon, 1976; Mintzberg, 1979). Galbraith (1974, p. 28; see also Galbraith, 1973)) hypothesizes that "*the greater the uncertainty of the task, the greater the amount of information that has to be processed ...*" and proposes two groups, of two strategies each, to cope with uncertainty:

- Increase the information processing capacity of the organization, through a) vertical information systems or b) lateral linkages.
- Reduce the amount of information to be processed, through a) self-contained tasks or b) slack resources.

According to Galbraith (1973), organizations that fail to consciously choose one of the coping strategies, but instead keep relying on formalization and centralized decision-making, will overload the hierarchy with information. In effect, performance standards will be automatically reduced: scheduling and budget overruns will occur and, as essential information will not be processed, the quality of decision-making will suffer.

4.1.2 COMPLEXITY

Complexity refers to the difficulty with which the work can be understood (*cf.* Mintzberg, 1979). This is essentially the same characteristic as comprehensibility (Mintzberg, 1979) and analyzability (Perrow, 1967).

Obviously, the most effective strategy to cope with complexity is to provide the process with adequate competences (knowledge, skills, experience). If there are competence gaps or if such gaps appear in the development from purchasing to strategic sourcing, the company may try two alternative strategies. The greater the knowledge gap, the more the organization has to rely on unanalyzed experience, intuition, chance and guesswork, rather than well-known, standard methods of designing, developing and implementing decisions (*cf.* e.g. Perrow, 1967). One coping strategy is to allow for trial-and-error learning about the strategic sourcing goals, process and organization. As a result, the strategic sourcing function's "intelligence" will increase, albeit at the cost of time incurred in learning. A possibly less time consuming strategy is to increase the sourcing staff's competences through training and education in a wide range of fields, including technical and organizational issues, leadership, motivation and communication. Also, the company may try to hire or recruit experienced people from other companies, consultants, or other experts.

High complexity becomes a real challenge if task variety and interdependence are high, too. Complexity evokes specialization – combined with high variety, many specialists are needed – if, in addition, interdependence is high, too, communication, collaboration and coordination between the many specialists are needed. Arrangements aimed at coping with problems of this type will be touched upon below.

4.1.3 INTERDEPENDENCE

Interdependence is the extent to which (groups of) people depend on one another for their outputs. Thompson (1967) distinguishes three forms: pooled, sequential and reciprocal interdependence.

A process with activities that are pooled interdependent demands the least amount of coordination, as no activity is dependent on another activity. Consequently, the demands for communication and proximity of activities are low. Coordination can be achieved through standardization, rules and procedures. Sequential interdependency means that activity A depends on activity B, while B is not dependent on A. The communication and proximity demands are medium. Suitable coordination mechanisms include planning, scheduling and feedback. Finally, in the case of reciprocal interdependence, activities A and B depend on each other. The demands for communication and proximity are high. Coordination through mutual adjustment can be achieving using cross-functional meetings and teamwork.

4.1.4 VARIETY

Variety, the second process characteristics put forward by Perrow (1967) (see also Mintzberg, 1979), directly affects the number of competence areas that need to be available to a process.

5. DISCUSSION, LIMITATIONS AND FURTHER RESEARCH

5.1 DISCUSSION

Various solutions have been proposed that should help companies to organize their strategic sourcing process effectively. The two dominant forms are: functional departments and cross-functional teams. Companies experience problems with both alternatives.

The nature of strategic sourcing processes may well explain why it is so difficult to organize them successfully. In its simplest form, purchasing involves targeting, selecting, negotiating with, contracting and ordering from suppliers. Strategic sourcing is "*...a cross-functional process, aimed at managing, developing and integrating with supplier capabilities to achieve a competitive advantage*" (Axelsson *et al.*, 2005, p. 7). It involves the sourcing of traditional manufacturing and also, for example, innovation inputs, as well as activities such as sourcing strategy development, supplier portfolio management, and supplier development.

Relative to the "old", clerical, functionally organized purchasing processes, strategic sourcing contains more (i.e. a higher variety of) activities that are more uncertain, more activities that are more complex, and higher levels of interdependence. However, not *all* new and, for that matter, "old" activities are necessarily uncertain, complex or reciprocally dependent on other activities, and it may well be here that the real managerial challenge lies.

The essence of that challenge is to locate, assess and, then, act upon uncertainties, complexities and interdependencies in the strategic sourcing process, by creating the conditions, summarized in Table 6, that allow the sourcing function to cope with these characteristics adequately *at the right place* in the process and *at the right time*.

Although the resulting organization depends a lot on the focal organization's strategic sourcing activities and their characteristics, it is quite unlikely that a *one-size-fits-all* solution will work. The more likely outcome is a hybrid configuration consisting of

decentralized and/or centralized, functionally and/or product/market based, units, permanent and/or temporary cross-functional teams (i.e. task forces and standing committees), liaison positions and/or integrating managers. See Mintzberg (1979, pp. 124-129 and pp. 162-176) for detailed descriptions of these design parameters.

In order to create order in the chaos of reality, further research could be aimed at developing a typological theory of strategic sourcing organization, which is based on the process-organization fit sketched above, and also deals with the limitations to this study.

	Low $\rightarrow$		High
Uncertainty	*Routines* $\rightarrow$ *Hierarchy* $\rightarrow$ *Targets, goals* $\rightarrow$		*Vertical information systems*
	(rules,		*Lateral linkages*
	programs)		*Self-contained tasks*
			Slack resources
Complexity	*Low competences*		*High competences*
	(knowledge,	$\rightarrow$	*(knowledge,*
	skills, experience)		*skills, experience)*
Interdependence	*Low communication*	$\rightarrow$	*High communication*
	Low proximity	$\rightarrow$	*High proximity*
	Formalization $\rightarrow$ *Planning, scheduling, feedback*	$\rightarrow$	*Mutual adjustment*
			(cross-functional
			meetings, teamwork)
Variety	*Few different*	$\rightarrow$	*Many different*
	competences		*competences*

<div align="center">

Table 6. Relationships between process and organizational design characteristics

</div>

5.2 *LIMITATIONS*

The analysis presented above focuses on process-organization fit, but is essentially limited to the role of competences and structural coordination mechanisms. However, coordination can also be achieved using individual level mechanisms, such as the roles of individuals, and "technological" mechanisms (see e.g. Paashuis and Boer, 1997; Boer *et al.*, 2006).

Furthermore, the optimal organization of a strategic sourcing process is unlikely to depend on process characteristics only. The contingency theory of organization has identified a range of factors to be taken into account when designing effective organizations, including environment (Burns and Stalker, 1961), strategy (Chandler, 1962), size and ownership (Pugh *et al.*, 1963), and technology (as in equipment, Woodward, 1965).

Finally, a key issue not (explicitly) addressed in this paper is performance. Mintzberg (1979, p. 220) summarizes the contingency theory of organization in his extended configuration hypothesis: "*effective structuring requires a consistency among the design parameters and contingency factors*". In other words, we should be looking for configurations that enhance the effective performance of strategic sourcing processes.

5.3 *TOWARDS A TYPOLOGICAL THEORY OF STRATEGIC SOURCING ORGANIZATION*

Practical experience suggests that companies have difficulties finding and sustaining an effective way to organize their strategic sourcing activities. Theories on fit between process (the independent variable) and organization (the dependent variable) suggest a way out. In order to reduce empirical variety to manageable understanding, we suggest that further research must be aimed at developing and, then, testing a typological theory of sourcing organization, which is not only based on process-organization theories such

as the ones presented and discussed above, but also incorporates individual level and technological coordination mechanisms and deals with the influence of contingency factors such as environment, strategy, size, ownership and possibly also technology.

According to Doty and Glick (1994, p. 231),"*... typologies are complex theoretical statements that should be subjected to quantitative modeling and rigorous empirical testing*". Typologies are created deductively by classifying the objects into predefined groups that are created based on intuition or previously existing knowledge and theory (Steininger *et al.*, 2013, referring to Bailey, 1994). Three criteria must be met for a classification to qualify as a typological theory:

1. The constructs used to describe the ideal types are identified (Doty and Glick, 1994, p. 233).
2. The relationships among these constructs are specified (Doty and Glick, 1994, p. 234).
3. These relationships are falsifiable (Doty and Glick, 1994, p. 234).

In fact these criteria represent the first step in the research, i.e. the development of a typology consisting of ideal and, thus, effective configurations of process characteristics, contingency factors and design parameters (in organization theory, ideal types are hypothesized (e.g. Mintzberg, 1979) or posited (e.g. Miles and Snow, 1978) to be more effective than other forms of organization (see Doty *et al.*, 1993)). The next step involves operationalization of the typology, preferably using existing scales "*... whose reliability and validity have already been demonstrated*" (Flynn *et al.* 1990, p. 267), design and testing a questionnaire, and defining the sample. The final step is data collection and analysis, aimed at validating the typology.

REFERENCES

Andersen, P.H. and Rask, M. (2003). Supply chain management: New organisational practices for changing procurement realities. *Journal of Purchasing and Supply Management*, Vol. 9, No. 2, pp. 83-95.

Arnold, U. (1999). Organization of global sourcing: Ways towards an optimal degree of centralization. *European Journal of Purchasing and Supply Management*, Vol. 5, No. 3, pp.167-174.

Axelsson, B., Rozemeijer, F. and Wynstra, F. (2005). *Developing Sourcing Capabilities: Creating Strategic Change in Purchasing and Supply Management*. London: John Wiley & Sons.

Bailey, K.D. (1994). *Typologies and Taxonomies: An Introduction to Classification*, Thousand Oaks: Sage Publications.

Bakker, E., Walker, H., Schotanus, F. and Harland, C. (2008). Choosing an organisational form: The case of collaborative procurement initiatives. *International journal of procurement management*, Vol. 1, No. 3, pp. 297-317.

Boer, H., Kuhn, J. and Gertsen, F. (2006). Continuous innovation – Managing dualities through co-ordination. CINet Working Paper WP2006-01, January.

Burns, T. and Stalker, G.M. (1961). *The Management of Innovation*. London: Tavistock.

Carter, P.L., Carter, J.R., Monczka, R.M., Slaight, T.H. and Swan, A.J. (2000). The future of purchasing and supply: A ten‑year forecast. *Journal of Supply Chain Management*, Vol. 36, No. 1, pp. 14-26.

Carter, J.R. and Narasimhan, R. (1996). Is purchasing really strategic?. *Journal of Supply Chain Management*, Vol. 32, No. 1, pp. 20-28.

Chandler Jr., A.D. (1962). *Strategy and Structure. Chapters in the History of the American Industrial Enterprise*, Cambridge (MA): MIT Press.

Chen, I.J., Paulraj, A. and Lado, A.A. (2004), Strategic purchasing, supply management and firm performance. *Journal of Operations Management,* Vol. 22, No. 5, pp. 505-523.

Cousins, P.D., Lawson, B. and Squire, B. (2006). An empirical taxonomy of purchasing functions. *International Journal of Operations and Production Management,* Vol. 26, No. 7, pp. 775-794.

Doty, D.H., Glick, W.H. and Huber, G.P. (1993). Fit, equifinality, and organizational effectiveness: A test of two configurational theories. *Academy of Management Journal*, Vol. 36, No. 6, pp. 1196-1250.

Doty, D.H. and Glick, W.H. (1994). Typologies as a unique form of theory building: Toward improved understanding and modeling. *Academy of Management Review*, Vol. 19, No. 2, pp. 230-251.

Driedonks, B., Gevers, J.M.P. and Van Weele, A.J. (2010). Managing sourcing team effectiveness: The need for a team perspective in purchasing organizations. *Journal of Purchasing and Supply Management*, Vol. 16, No. 2, pp. 109-117.

Durrani, T.S., Forbes, S.M., Broadfoot, C. and Carrie, A.S. (1998). Managing the technology acquisition process. *Technovation*, Vol. 18, No. 8-9, pp. 523-528.

Ellram, L.M. and Carr, A. (1994). Strategic purchasing: A history and review of the literature. *Journal of Supply Chain Management*, Vol. 30, No. 2, pp. 9-19.

Englyst, L., Jørgensen, F., Johansen, J. and Mikkelsen, O.S. (2008). Commodity team motivation and performance. *Journal of Purchasing and Supply Management*, Vol. 14, No. 1, pp. 15-27.

Faes, W., Matthyssens, P. and Vandenbempt, K. (2000). The pursuit of global purchasing synergy. *Industrial Marketing Management*, Vol. 29, pp. 539–553.

Flynn, B.B., Sakakibara, S., Schroeder, R.G., Bates, K.A. and Flynn, E.J. (1990). Empirical Research Methods in Operations Management. *Journal of Operations Management*, Vol. 9, No. 2, pp. 250-284.

Galbraith, J.R. (1973). *Designing Complex Organizations*. Reading (MA): Addison-Wesley.

Galbraith, J.R. (1974). Organization design: An information processing view. *Interfaces*, Vol. 4, No. 3, pp. 28-36.

Giunipero, L.C. and Pearcy, D.H., (2000). World-class purchasing skills: An empirical investigation. *Journal of Supply Chain Management*, Vol. 36, No. 4, pp. 4-13.

Hartmann, E., Trautmann, G. and Jahns, C. (2008). Organisational design implications of global sourcing: A multiple case study analysis on the application of control mechanisms. *Journal of Purchasing and Supply Management*, Vol. 14, No. 1, pp. 28-42.

Hult, G.T.M. and Nichols Jr., E.L. (1996). The organizational buyer behavior learning organization. *Industrial Marketing Management*, Vol. 25, No. 3, pp. 197-207.

Johnson, P.F., Klassen, R.D., Leenders, M.R. and Fearon, H.E. (2002). Determinants of purchasing team usage in the supply chain. *Journal of Operations Management*, Vol. 20, No. 1, pp. 77-89.

Johnson, P.F. and Leenders, M.R. (2006). A longitudinal study of supply organizational change. *Journal of Purchasing and Supply Management*, Vol. 12, No. 6, pp. 332-342.

Johnson, P.F. and Leenders, M.R. (2004). Implementing organizational change in supply towards decentralization. *Journal of Purchasing and Supply Management*, Vol. 10, Nos. 4-5, pp. 191-200.

Johnson, P.F., Leenders, M.R. and Fearon, H.E. (1998a). The influence of organizational factors on purchasing activities. *International Journal of Purchasing and Materials Management*, Vol. 34, No. 3, pp. 10-19.

Johnson, P.F., Leenders, M.R. and Fearon, H.E. (1998b). Evolving roles and responsibilities of purchasing organizations. *International Journal of Purchasing and Materials Management*, Vol. 34, No. 1, pp. 2-11.

Karjalainen, K. (2011). Estimating the cost effects of purchasing centralization. Empirical evidence from framework agreements in the public sector. *Journal of Purchasing and Supply Management*, Vol. 17, No. 2, pp. 87-97.

Kim, S.W., (2007). Organizational structures and the performance of supply chain management. *International Journal of Production Economics*, Vol. 106, No. 2, pp. 323-345.

Laios, L.G. and Moschuris, S.J. (2001). The influence of enterprise type on the purchasing decision process. *International Journal of Operations and Production Management*, Vol. 21, No. 3, pp. 351-372.

Lakemond, N., van Echtelt, F. and Wynstra, F. (2001). A configuration typology for involving purchasing specialists in product development. *Journal of Supply Chain Management*, Vol. 37, No. 4, pp. 11-20.

Lau, G., Goh, M. and Phua, S.L. (1999). Purchase-related factors and buying center structure: An empirical assessment. *Industrial Marketing Management*, Vol. 28, No. 6, pp. 573-587.

Majchrzak, A. and Wang, Q. (1996). Breaking the functional mind-set in process organizations. *Harvard Business Review*, Vol. 74, No. 5, pp. 93-99.

McWilliams, R.D., Naumann, E. and Scott, S. (1992). Determining buying center size. *Industrial Marketing Management*, Vol. 21, No. 1, pp. 43-49.

Mintzberg, H., (1979). *The Structuring of Organizations*. Englewood Cliffs: Prentice-Hall.

Miocevic, D. (2011). Organizational buying effectiveness in supply chain context: Conceptualization and empirical assessment. *Journal of Purchasing and Supply Management*, Vol. 17, No. 4, pp. 246-255.

Miles, R.E. and Snow, C.C. (1978). *Organizational Strategy, Structure, and Process*, New York: McGraw-Hill.

Moses, A. and Åhlström, P. (2008). Problems in cross-functional sourcing decision processes. *Journal of Purchasing and Supply Management*, Vol. 14, No. 2, pp. 87-99.

Murphy, D.J. and Heberling, M.E. (1996). A framework for purchasing and integrated product teams. *International Journal of Purchasing and Materials Management*, Vol. 32, No. 3, pp. 11-19.

Møller, M.M., Lidegaard, N. and Ellegaard, C. (2013). Effectiveness of sourcing teams. *20th Annual EurOMA Conference*, Dublin, Ireland, June.

Narasimham, R., Jayaram, J. and Carter, J.R. (2001). An empirical examination of the underlying dimensions of purchasing competence. *Production and Operations Management*, Vol. 10, No. 1, pp. 1-15.

Paashuis, V. and Boer, H. (1997). Organizing for concurrent engineering: an integration mechanism framework. *Integrated Manufacturing Systems*, Vol. 8, No. 2, pp. 79-89.

Papaioannou, D., Sutton, A., Carroll, C., Booth, A. and Wong, R. (2009). Literature searching for social science systematic reviews: Consideration of a range of search techniques. *Health Information and Libraries Journal*, Vol. 27, No. 2, pp. 114-122.

Parikh, M.A. and Joshi, K. (2005). Purchasing process transformation: Restructuring for small purchases. *International Journal of Operations and Production Management*, Vol. 25, No. 11, pp. 1042-1061.

Payne, J., Dorn, W. and Miller, M. (2012). Procurement's role in maximizing corporate budgets. *Financial Executive*, December, pp. 48-50.

Pearson, J.N. (1999). A longitudinal study of the role of the purchasing function: Toward team participation. *European Journal of Purchasing and Supply Management*, Vol. 5, No. 2, pp. 67-74.

Pinto, M.B., Pinto, J.K. and Prescott, J.E. (1993). Antecedents and consequences of project team cross-functional cooperation. *Management Science*, Vol. 39, No. 10, pp.1281-1297.

Perrow, C. (1967). A framework for the comparative analysis of organizations. *American Sociological Review*, Vol. 32, No. 2, pp.194-208.

Pugh, D.S., Hickson, D.J., Hinings, C.R., Macdonald, K.M., Turner, C. and Lupton, T. (1963). A conceptual scheme for organizational analysis. *Administrative Science Quarterly*, Vol. 8, pp. 289-315.

Ramsay, J. and Croom, S. (2008). The impact of evolutionary and developmental metaphors on purchasing and supply management: A critique. *Journal of Purchasing and Supply Management*, Vol. 14, No. 3, pp. 192-204.

Rozemeijer, F.A. (2000). How to manage corporate purchasing synergy in a decentralised company? Towards design rules for managing and organising purchasing synergy in decentralised companies. *European Journal of Purchasing and Supply Management*, Vol. 6, No. 1, pp. 5-12.

Rozemeijer, F.A. and Van Weele, A.J. (2007). Creating corporate advantage through purchasing. *92nd Annual International Supply Management Conference*, Las Vegas, May.

Rozemeijer, F.A., Wynstra, F., and Bouwmans, P. (2005). Purchasing knowledge: The key to purchasing performance?. *14th Annual IPSERA Conference*, Archamps, France, March.

Saranga, H. and Moser, R. (2010). Performance evaluation of purchasing and supply management using value chain DEA approach. *European Journal of Operational Research*, Vol. 207, No. 1, pp.197-205.

Spina, G., Caniato, F., Luzzini, D. and Ronchi, S. (2013). Past, present and future trends of purchasing and supply management: An extensive literature review. *Industrial Marketing Management* (in press).

Simon, H.A. (1976). *Administrative Behavior*. New York: The Free Press.

Steininger, D.M., Trenz, M. and Veit, D.J. (2013). Building taxonomies in IS and management. A systematic approach based on content analysis. Proceedings of the 11th International Conference on Wirtschaftsinformatik, Leipzig.

Thompson, J.D., (1967). *Organizations in Action: Social Science Bases of Administrative Theory*. New Brunswick/London: Transaction Publishers.

Trent, R.J., (1998). Individual and collective team effort: A vital part of sourcing team success. *International Journal of Purchasing and Materials Management*, Vol. 34, No. 4, pp. 46–54.

Trent, R.J., (2004). The use of organizational design features in purchasing and supply management. *Journal of Supply Chain Management*, Vol. 40, No. 3, pp. 4-18.

Trent, R.J. and Monczka, R.M. (1994). Effective cross-functional sourcing teams: Critical success factors. *International Journal of Purchasing and Materials Management*, Vol. 30, No. 4, pp. 3-11.

Trent, R.J. and Monczka, R.M. (1998). Purchasing and supply management: Trends and changes throughout the 1990s. *Journal of Supply Chain Management*, Vol. 34, No. 4, pp. 2-11.

Van Weele, A.J. and Rozemeijer, F.A. (1996). *Revolution in Purchasing. Building Competitive Power through Pro-active Purchasing,* Philips Electronics, Eindhoven.

Woodward, J. (1965). *Industrial Organization: Theory and Practice*, London: Oxford University Press.