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Andersen, Poul Houman; Kragh, Hanne; Ellegaard, Chris

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Abstract

Companies must pursue both exploration and exploitation of supplier's knowledge in increasingly competitive and complex business environments. This has been referred to as pursuing an ambidextrous supply strategy, extending the mobilization of resources in pursuit of both aims beyond the borders of the lead manufacturer and into supplier organizations as well. Purchasing and supply management plays an increasingly central role in mobilizing and involving the suppliers in the pursuit of this agenda. The purpose of this paper is to contribute to the literature on organizational ambidexterity and operations management by exploring how purchasing departments contribute to the organizational pursuit of organizational ambidexterity. We explore practices followed by purchasing departments for mediating tensions between supply networks and organizational functions.

Introduction

Suppliers play an increasingly important role in both exploration and exploitation of business opportunities: suppliers can potentially support exploration through the mobilization and combination of knowledge and resources across organizational boundaries or exploitation through refining and extending existing inter-organizationally linked routines and skills. This has been referred to as pursuing an ambidextrous supply strategy, extending the mobilization of resources in pursuit of both aims beyond the borders of the lead manufacturer and into supplier organizations as well (Im & Rai, 2008; Kristal et al, 2010).

Pursuing ambidextrous supply strategies is likely to influence the roles and practices of purchasing management. Purchasing plays an increasingly important role for integrating supply strategy and strategic performance (Hesping & Schiele, 2015; Chen et al, 2004). In order to understand better how this may impact, take as an example the purchasing function at Volvo Trucks, where the competitive situation necessitates organization-wide demands for operational efficiency and innovation that challenges organizational limits at the same time. For purchasing, corresponding KPIs (key performance indicators) requires managers to follow principles of meticulous contractual governance where deliveries and operational targets are clearly specified and agreed upon among the parties. At the same time, the competitive climate for Volvo trucks calls for collaborative innovation with suppliers in order to remain relevant to their customers.

Matching the organization's strategic intent with the supply base on an ongoing basis and creating workable and durable organizational interfaces to suppliers suggests that purchasing performs an increasingly critical boundary-spanning function in the organizational structure. A chief responsibility for purchasing managers is to interact with and support the needs of internal and external constituents, related to the organization. This involves mediating and coordinating between various functions inside the organization as well as aligning activities and mobilizing resources among suppliers in the supply network.

Despite its growing importance for competitiveness, purchasing's role in organizational ambidexterity (OA) has not received sufficient attention in the literature on procurement and supply management (Patel et al, 2012). In general, there is a call for more empirical studies of OA and how it may impact on purchasing, operations and supply management. In this paper, we ask the question: How do purchasing departments organize activities in order to facilitate suppliers' contribution to OA? Our

research is based on a comparative case study of managerial and organizational activities among purchasing managers in six medium-sized to large manufacturing companies. We use existing theoretical perspectives on OA as theoretical vantage point for exploring how and to what extent the procurement departments studied face ambidextrous demands in their organizational context and what roles they take on in order to meet these.

The paper proceeds as follows. First, supply management literature and the literature on OA is reviewed in order to identify the roles taken and the activities initiated for dealing with diverging requirements internally as well as from the task of managing the external supply base. We then develop a conceptual model of nested tensions for understanding the role of purchasing departments. In the empirical section, we compare and contrast our findings and relate these to the literature on ambidexterity.

Defining OA

It is a fundamental axiom in contingency theory, that organizational forms must match their environment in order to survive and prosper (Ashmos et al, 2000; Eisenhardt & Piezunka, 2011).

Furthermore, most would concur, that business contexts vary in complexity; that change is contributing to decision making complexity and that organizational designs over time must accommodate for this (Perrow, 1997; Miller, 1993). Complexity of decision environments is multifaceted and there are several different definitions of complexity (Cannon & John, 2007). Following Duncan, the complexity of a task environment is contingent on a) the number of factors that needs to be taken into account in the decision environment and b) the number of different states these may be configured in. In addition, the frequency and nature of change, adds to the environmental complexity (Simon, 199X)

As business contexts becomes increasingly dynamic and complex, organizational designs must also become agile and flexible. The potential organizational responses to conflicting demands in the business context have been discussed in the literature in terms of OA. According to Tushman & O'Reilly (1996), OA can be defined as “The ability to simultaneously pursue both incremental and discontinuous innovation...from hosting multiple contradictory structures, processes, and cultures within the same firm” (p. 24). Different ways for an organizational form to achieve OA has been debated in the literature on organizational design in terms of sequential, structural and contextual ambidexterity.

Sequential ambidexterity

First, Duncan (1976) early on argued that organizations need to change their structure over time (*sequentially*) in order to align the structure with the strategy on the different demands for innovation or efficiency. Following this line of reasoning, Burgelman (1983) studied internal corporate venturing processes followed the organizational transition of projects from the forefront of technology change into becoming part of the operating core. In line with evolutionary thinking, he saw an organization as a system that at different points in time emphasized processes of variation, selection and retention. These processes follow different logics and are supported by different structures and practices. The selection mechanism presents the dominant organizational logic at a specific time. It is this logic that decides selection criteria and determines the survival of new, radical ideas. In other words, according to this perspective, OA is located in the dominant practices of selecting new (and discarding old) projects and an organization is sequentially dominated by one or the other. In a similar fashion, Cohen & Levinthal (1990) discussed organizations' limited capacity to pursue exploration and exploitation of

knowledge at the same time. They also saw a temporal aspect involved in the organization's ability, but linked this to the collective cognitive processing rather than dominating values of managers.

Structural ambidexterity

Second, Tushman and O'Reilly (1996) suggest that in still more business contexts, there is a need for accommodating with both evolutionary and revolutionary changes in the business context at the same time. Organizations therefore need to maintain an internal selection environment that allows them exploit and explore *simultaneously*, using the structural differentiation of exploration and exploitation tasks as a way to deal with unpredictable change and avoiding too strong specialization. Particularly, as organizations grow and develop more formal structures, organizational designs may develop a structural and cultural inertia. Separate organizational units can provide appropriate contexts for dealing with operational and innovative issues, as pointed out early (Lawrence & Lorsch, 1967). Furthermore, the structural differentiation help organizations maintain a diverse set of professional skills helpful in dealing abruptly changing business contexts. Coordinating, integrating and combining activities in this internal organizational environment has been described as a dynamic capability, resting on organizational routines and processes (Jansen et al, 2009).

Contextual ambidexterity

Finally, Gibson and Birkinshaw (2004) propose that OA can also be achieved in a *contextual* way, where the individual managers understands, are motivated by and actively allocate their resources to non-routine innovative and more routine-oriented operational purposes. This means that they are able to engage in paradoxical thinking, fulfil multiple roles and conduct multiple different tasks and are able to proactively stretch activities outside their formal job descriptions (Raisch & Birkinshaw, 2009;

Mom, Bosch & Volberda, 2009). Managers working within this mindset are supposed to integrate activities across organizations, and to recognize and translate conflicting expectations and create potential synergy out of paradoxical claims (Jansen et al, 2009). This also means that job descriptions of these managers are evolving and that they participate in different activity configurations.

Furthermore, in ambidextrous organizations, emphasis may quickly shift between exploring and exploiting, meaning that the direction of top management attention, resources, etc. can change swiftly as well.

Purchasing's role in facilitating suppliers and pursue OA

OA in supply networks concerns the ability to mobilize suppliers in the pursuit of both short and long-term goals (Im & Rai, 2008; Kristal et al, 2012). Short-term operational success comes with conducting current activities better or maintaining a certain level of quality but using fewer resources throughout the supply network. Long-term success is associated with innovation: questioning and rethinking the current supply configuration in order to disrupt the rules of the game or pre-empt potential competitors from doing so. Long- and short term operational successes pertain to inter-organizational learning and problem-solving, but calls for different priorities and modes of thinking. Achieving operational efficiency requires predictability through standardization of work processes, detailed procedures, etc. and reward managerial behaviour which are consistent with this aim and mode of thinking. Innovation on the other hand calls for creativity, and is associated with a risk-taking and experimental mindset (Gibson & Birkinshaw, 2004; Rivkin & Siggelkov, 2003). However, although the strategic and managerial tasks, priorities and challenges on an organizational level may be relatively clear, it is still unclear how an organization's pursuit of ambidexterity affects activities at the departmental level.

Organizational quest for ambidexterity along with suppliers' growing importance for the focal firm, both impact on purchasing's role in configuring and managing relationships with suppliers. For many purchasing departments, the external side to OA is critical. Organizations specialize internally to enhance focus and increasingly rely on procurement to provide a boundary spanning role towards aligning suppliers with corporate strategic goals (Hesping & Schiele, 2015; Cox, 2015). Purchasing departments are expected to levitate this policy and mobilize suppliers in this respect. Blome et al (2013) who see the challenge as an issue of complementing (or an amalgam of) relational and contractual governance. In their they address the effects of both relational and contractual governance on innovation and cost performance and demonstrate that there is a complementarity effect on the two with respect to performance. Im & Rai (2008), study ambidexterity in inter-organizational relationships and point to the relationship performance benefits of including both aspects (see also Yang et al, 2014).

Internally, purchasing departments have an increasingly important and difficult role as mediators between the suppliers and various internal functions of the firm, such as operations, quality control and new product development, with respect to facilitating innovation activities as well as daily operation processes across organizational boundaries (Wynstra et al, 2000). In the literature on strategic supply management, purchasing typically take on a boundary spanning role with respect to the management and alignment of supplier relationships with internal aims (Schiele, 2010; Zahang, Wu & Henke, 2015). Building and maintaining collaborative and trustful personal relationships to suppliers is both difficult and a key priority (Kiessling et al, 2004).

The potential conflicts arising from pursuing ambidexterity are multifaceted and manifest themselves in different ways. Likewise, it makes little sense to categorize the purchasing departments as being

ambidextrous or not (Raisch & Birkinshaw, 2008). Rather, it is fruitful to discuss tensions – managerial issues that can be presented as being in-between two contrasting categories opposites and more or less taking in elements of both and relate the departments pursuit of ambidexterity accordingly. For the purchasing department, pursuing ambidexterity means, that multiple demands of exploration and exploitation needs to be met – not only in relation to differing internal demands and priorities but particularly in relation to the management of supplier relationships. Purchasing depends on its ability to mobilize supplier resources in the pursuit of the organization’s overall strategy.

There are several tensions potentially influencing the potential role of purchasing departments in pursuing OA. First, the perceived importance of the suppliers’ resources varies across organizations, which have a strong impact on the tasks associated with pursuing ambidexterity. Whereas some find that externalizing exploitation or exploitation process may harm internal strategic integration (Benner & Tushman, 2005), others find that significant gains may come from matching external inputs with internal exploration or exploitation processes (Lin et al, 2007). Second, the purchasing department is a specialized component in a larger organizational system (Volberda & Lewin, 2003). It may be more or less involved in responding to conflicting environmental demands. For instance, purchasing’s involvement in supplier management and supply strategy can range from extensive and encompassing to limited, for instance restricted to price contracting only (Knoppen & Sáenz, 2015).

Taking into account the different status of supply and purchasing departments in the overall strategy of the firm (Hesping & Schiele, 2015; Knoppen & Suarez, 2015) we have identified three types of nested tensions, that involves purchasing’s role in coping with the pursuit of OA and the possible role of the supply network in this. Although, the tensions are interrelated, each hold a specific dimension of OA.

Tension one and two are conceptually different from tension three, as they reflect the conditions for the purchasing department’s involvement in the organization’s mobilization of suppliers’ capabilities. Hence, as described in tension one, rather than categorically seeing suppliers as part of a potential supply base to be mobilized or not by the buying firm, both viewpoints may be manifest among managers at the same time suggesting that different tensions can arise. Similarly, in tension two, organizations may differ with respect to whether the purchasing department plays a pivotal role or not in the mobilization of external resources. Tension three predispose that purchasing has been given a role in mobilizing supplier capabilities in the pursuit of supply network ambidexterity, but that this role may be more towards specialization or integration, possibly containing elements of both.

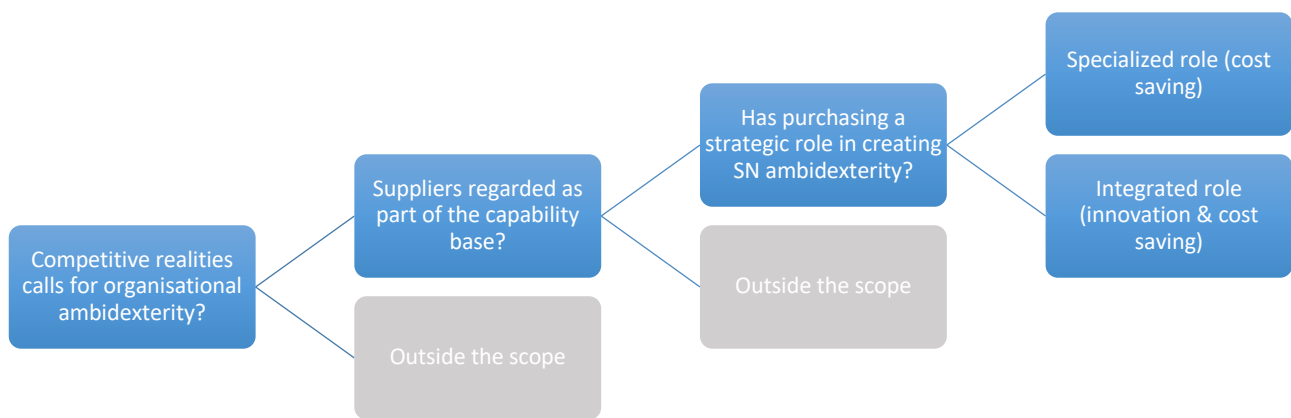


Figure 1: Exploring further purchasing’s role in facilitating OA: Nested tensions and case selection criteria

Tension one concerns whether an internal or an external focus is predominant with respect to how management caters for cost efficiency and innovation. A substantial part of research and managers tend to treat purchasing as an internal affair (Gadde et al, 2010). Firms where an internal focus dominates, seek to increase the motivation among their own employees for internal development and opportunity recognition and cost efficiency issues and pay limited heed to their suppliers (Fawcett & Maignan, 2002). The automaker VW has been reported as an example of a company with a strong internal capability focus and correspondingly less interest in supplier capabilities (Henke, 2015). Typically, they pay relatively less attention to the role of external sources such as suppliers as means for pursuing these aims. In this study, we focus on buying organizations, which do regard suppliers as part of their capability base, thus having a supply chain orientation (Lockamy & McCormack, 2004).

Moving to tension two, a second, but related issue concerns the degree to which exploration and exploitation activities involves the purchasing department's management of supplier relations. Business units may be involved with suppliers on a purely operational level, while development and other issues are dealt with by other departments in the buying organization. Historically, R&D or production has taken on collaboration activities with suppliers, without involving or even paying any particular attention to the activities and demands carried out by the purchasing department (Gadde, 1999). In the present context, we are interested in understanding the dilemmas faced in purchasing organizations, where internal and external demands toward suppliers create managerial tensions that needs to be resolved within the purchasing department. In cases where the purchasing department has no involvement in the strategic mobilization of suppliers as a resource but only carries out the operational tasks related to purchasing, there is no element of managerial tension involved, and these are seen as outside our scope as well.

The third tension concerns the departmental locus of the ongoing dialogue and resolution of potential tensions between the dual and competing demands to suppliers. Here, the tensions revolve around the individual and collective roles of purchasing managers for balancing ambidextrous supplier involvement. In many cases, more critical tensions among stakeholders raised from pursuing dual and sometimes paradoxical aims cannot be resolved on the same organizational level as they arise. They call for the involvement of the next organizational level of authority, whether this is up or down in the organizational hierarchy. For instance, severe tensions arising at an interpersonal level may call for an intervention, reframing and even a re-design of tasks at a team or departmental level (Ellegaard & Andersen, 2015). Conversely inter-team and departmental tensions, may be solved by individuals interacting and reaching solutions acceptable for both constituencies. Separation allows for structural differentiation and specialization of the organizational forms to pursue the specific objective, but where aligning the two may provide inter-unit challenges. Integrating both demands within the same organizational unit or team, hand may create new ways of addressing issues. These differences are reflected in the organization of purchasing activities. Schiele (2010) explores the challenges for the purchasing function in taking on a dual role; participating in both cost savings and innovation activities, taking an organizational design into consideration as part of understanding the duality aspect and using these to discuss liaison roles. Schiele reports on case companies where the purchasing function is divided into “advanced” and “strategic” sourcing departments, focusing on “technical” and “commercial” aspects respectively.

Methodological considerations

Our study is based on a two-year research project focused on supplier resource mobilization in dynamic and changing environments and in particular how buying firms organize and manage processes and

	Company A	Company B	Company C	Company D	Company E	Company F
Industry and product focus	Products and systems solutions for heating and cooling	Theatre, performance and architectural lighting equipment	Consumer electronics	Building materials	Aerospace and defence	Circulation pumps for process industry and buildings
Ambidexterity trigger	Global market diversity	Innovation pace	Technological disruption	Global market diversity	Technological disruption	Global market diversity
Full-time Employees	23.000	800 (division)	2.000	500 (division)	1.200	19.000
Turnover 2015	5 billion Euro	5,5 million Euro	0,5 billion Euro	unknown	200 million Euro	3 billion Euro

initiatives related to accessing and mobilization the resources of their suppliers. The project includes data about various aspects of supplier relationships as well as internal relationships between different functional areas from the perspective of the buying organization and their suppliers.

Table 1: Case overview

We adopt a comparative case study methodology in order to get detailed knowledge about the different dimensions and configurations of purchasing's role in pursuing supply network ambidexterity. More specifically, we apply a multiple-case, embedded design, as our study includes six case companies in which we address multiple units of analysis (Yin, 2013). Since the role of purchasing for OA is an under-researched area, an inductive approach is taken. Key information about six case companies is shown in table 1, below.

As seen from table 1, all companies are medium and large MNCs in a diverse set of manufacturing industries. In case company B and D, we have focused on divisions of larger MNCs. The cases have

been selected based on their interests and activities in the area, following the recommendations for a purposive sampling strategy outlined by Patton (1990). We have included case companies in complex and dynamic environments who do pursue OA as an adequate response to achieve fit and long-term survival. The ability to mobilize the right resources from selected suppliers is highly important for the case companies, which were chosen among other things because of a pronounced wish to work closer with selected strategic suppliers in the future. Hence, each case company is at a stage, where they have elaborated experience with involving strategic suppliers in different types of product and process development projects, yet also face challenges in developing these strategic collaborations further.

We approached several case companies in various manufacturing industries. We had some prior knowledge about these firms, which helped us to gain access to key decision makers in purchasing and to commit them to participate. The senior managers in the case companies helped us to gain clearance and to assess internal documents as well as informants in the organizations – both in the purchasing departments and in related departments such as R&D, manufacturing or quality inspection.

For data collection, we relied on semi-structured interviews supplemented with documents and observation. Selection of informants within each case followed a process of theoretical sampling, which is ‘the purposeful selection of a sample according to the developing categories and emerging theory’ (Coyne, 1997). Our interviews started in the purchasing department, where the number of people interviewed depends on the size of this department. Informants included the head of purchasing, category managers, and purchasing assistants. We then followed the lead from there. Together with our main contact person we also identified and interviewed key personnel from purchasing and R&D involved at different levels in particular strategic supplier relationships. This emerging interview

process resulted in detailed knowledge of how actors at different organizational levels work with supplier involvement. In total, approximately 60 interviews have been carried out in the case companies. These interviews have mainly been with senior purchasing managers and category managers. In addition, several site visits have been conducted, as well as four seminars involving all or some of the case companies. These seminars have been recorded and transcribed as well.

All interviews were recorded and transcribed, producing a substantial amount of material for coding and analysis. The interviewed varied in length from 30 to 90 minutes. Coding and interpreting data was an iterative process characterized by relatively few a priori constraints, yet substantial use of theory (Orton, 1997). In this process, we made sense of emerging categories from the empirical material by comparing them with existing theoretical ideas and concept, just as our existing knowledge was gradually refined as a result (Dubois and Gadde 2002). Given the explorative nature of our study, we had a strong focus on maintaining flexibility in our coding, in order to avoid premature saturation and maintain possibilities for combining and recombining data, insights and emerging theory. Some of our concepts were defined a priori, but changed as we iterated between data, theory and insights. Hence, our approach for data analysis has been less prescriptive than the process often associated with grounded theory, and closer to what is sometimes referred to as a contextual constructivist position or template analysis (King, 2004).

Case analysis

Taken together, the competitive environment facing all six case companies is both highly complex and dynamic. During our series of interviews in each case company, we initiated the interviews by asking

managers to describe their current situation and characterize their business context. In all industries studied, unpredictability underlines the importance of agility and adaptability to rapidly changing business conditions. Hence, in the case companies studied, sustaining market success depends on the ability to both exploit current capabilities on order to compete in a cost-efficient manner, while at the same time exploring new technologies and innovation opportunities.

Important triggers of environmental dynamism and complexity, giving rise to conflicting demands to the organization are: an accelerating innovation pace, various globalization of competition and markets, changing regulations in different business contexts and the impact of IT technology on all activities, but mainly consumption and competition patterns. Several of the case companies finds themselves at the intersection of mature and evolving technologies and needs to accommodate for the diverging skill sets underlying congruent performance in these business environments. In case companies A, B and D, the pattern of competition strongly differs across institutional and regional contexts, meaning that the pace of change and the technological requirements are different, effecting the ambidexterity of supplier resource mobilization and internal coordination roles. Whereas growth in the new market regions come from conventional business activities and is fuelled by operational excellence, competitive abilities in the mature markets rest on innovative abilities. The business context in case company C and E, is also characterized by strong environmental turbulence in terms of rapidly changing technologies and in case company E, in addition a strongly unpredictable and fad-driven consumer context, producing unstable market equilibriums, where consumption patterns unfold and repeats themselves irregularly. In this case company, environmental dynamism triggers the need for OA in another way: a steady decline in conventional product lines is being countered by growth in new products which calls for new technologies, creating paradoxical internal pressures as well as conflicting pressures in the supply

network. Finally, case company F is, given recent strategic choices to expand into new business areas and become a solution provider, complementing its existing technology basis with digital technologies and is thus reorganizing to accommodate with this while seeking to maintain its current foothold in the conventional market.

Purchasing departments organizing for the facilitation of ambidextrous supplier involvement

Across the case companies, the purchasing department has a stronger or weaker mediating role in linking the internal processes of exploration and exploitation with the mobilization and involvement of suppliers in these two kinds of activities. Furthermore, when involved in both types of activities, the issues incurred and the organizational practices through which the purchasing organization seek to serve in these balancing efforts differs widely. Overall, the case showed rather different approaches to the management of ambidexterity.

In case A, the purchasing department is involved in facilitating supplier relationships supporting both innovation and cost optimization issues. The company is a high-volume producer of equipment and product designs are constantly modified in order to increase durability, bring down cost, etc. However, suppliers also contribute with important insights on new materials and other, more advanced equipment. Whereas the former part of supplier involvement is managed through category purchasers, company A have established a particular team – new product introduction (NPI), which collaborates with the R&D teams. Their job is to mobilize and collaborate with suppliers in relation to new product development. Hence, they are dominated by what has been referred to as structural ambidexterity, as a way to manage the inconsistencies of the two mindsets involved. Despite structural divide, the NPI team occasionally ask for advice or find other ways to involve purchasing officers from the operations-

oriented purchasing organization. Thus, informally, company A also displays some contextual ambidexterity, where regular purchasers are asked to think in terms of technology development capabilities. This structure is very similar to the one found in case F, where procurement is divided into operational and strategic purchasing. For strategically important suppliers, company F has developed a dual visiting team, where representatives from strategic purchasing and engineers from the development department joint visits suppliers and jointly reports back to the main organization. These visits are managed and organized by purchasing, and although informal meetings may also be held directly between engineers and others directly responsible for development activities in both organizations, the decisions made must be agreed upon in the meetings orchestrated by purchasing.

Case B, a division of a US-based multinational and a specialized producer of lighting equipment the purchasing department also facilitates both cost optimization and innovation activities with suppliers. Purchasing relationships to selected, strategic suppliers are managed from the purchasing organization by key supply purchasers, which – besides often having an engineering education also have a background in development activities. The job for this manager is to maintain supplier attractiveness and work closely with the selected suppliers, in order to retain early access to suppliers' technology development and provide an overview to the rest of the organization.

I am CC on every mail correspondence with the supplier. I may not be directly involved in every conversation, but I know what is going on...I have weekly meetings with the engineers involved in this particular field (manager, case company B)

At the same time, discussions concerning cost savings and process optimizations are handled by this manager. This is a guiding principle that comes close to contextual management of ambidexterity. Case C and F share certain traits, when it comes to the organizational support of ambidextrous involvement of suppliers. In both organizations purchasing partakes in product development activities and cost optimizations. In both cases, project development dominates the organization and purchasing becomes part of the project organization. In case C, purchasing is at the centre of product development, as almost all technical features of the products produced is supplier-developed. In this organization, the departmental boundaries between product development and purchasing are blurred. The organizing process is changing, however, from an organizational set-up, where purchasing demanded full control over supplier communication to a new organizational set-up, where suppliers participate and are kept in the loop along with development. Co-location of product development, quality control and purchasing helps creating informal lines of communication and supports knowledge-sharing. The former organizational set-up had solved problems with respect to cost control issues and had been used as a way to keep product development in alignment with the cost regime of the company. However, in step with company C outsourcing still more technologies, the policy was causing many delays and troublesome processing of decisions as information was relayed through purchasing officers.

Organization people and I think it is not bad to have people responsible for day to day and the same people responsible for the strategy, but if day to day takes up so much of the time, then it is a problem. You see that fire fighters are the heroes in many organizations, but the people, who are heroes and solved the problem should actually not have been here in the first place.

This have created situations where development engineers looked for ways to shortcut connections to suppliers.

The previous procurement manager said that we need to control everything and you are not allowed communicating with suppliers – procurement should communicate with suppliers....

Interviewer...OK?

And then there was anarchy, so what happened and ...if I am not allowed, I do it and then I do not tell. They ended up in the worst situation, they can be in. (case company C)

The proposed solution has been to increase contextual ambidexterity, using “double hat roles”. An example of double hat roles is also that product development in their interactions with strategic suppliers also addresses purchasing and delivery issues.

Although there are similarities between company C and F with respect to purchasing’s role, the production technology underlying operations in company F differs much from that of company C. Here, products are complex, but typically produced in small batches for specialized customers purchasing serve product development activities, but also seek to integrate issues related to repurchasing of components in order to serve elaborated service agreements. This is another aspect of ambidexterity not witnessed in the other cases.

Organizational tensions related to ambidexterity

The case companies differ with respect to the extent of their focus on suppliers as and this also have consequences for the extent and nature of the boundary spanning activities taken on by the purchasing function. In one case company in question (case company C), suppliers are recognized as being extremely important for both product development and for operational issues. The company is a recognized supplier of high-end consumer electronics. Most production is outsourced and components are sourced and delivered to assembling companies in a global, intricate web of supplier relationships. This means that cost optimization is strongly externally oriented – not only in terms of managing unit costs but also in ensuring logistical flows and external quality inspection targets. In case company F, where the customer offerings, is customized and often one-of-a-kind in nature, market success depended on intensive interactions with customers and suppliers. In this case purchasing's role in achieving ambidextrous goals were consultative and they were only indirectly involved in the innovation activities taking place. Likewise, in case B, conflicts arose as the purchasing organization attempted to assume a strong role and formalize relationships with suppliers important for radical innovation activities. In case C where the value proposition is much more standardized linkage between the value proposition offered and the suppliers knowledge input is more indirect, the purchasing department seemingly takes on a more autocratic responsibility for matching suppliers with the relevant internal departments and is centrally positioned in most decisions that link to cost savings and innovation.

In parallel to the critical role of the supply base for manufacturing, suppliers also deliver a broad range of technologies used for product development and the company is constantly engaging in dialogue with

suppliers with respect to technical specifications and novel uses of technologies provided. Likewise, in other cases studied (in case company E and F) strategic suppliers provide resident engineers, which support the internal development teams in the case company. In this particular case, the role of the purchasing function is highly integrative and purchasing is involved in most technical and commercial discussions with suppliers and the manufacturer's organizational units. This can be compared to case company D, also with a strong reliance on external suppliers, but one where the external orientation is less outspoken and where the interaction between supplier and customer engineers regarding innovation issues is direct and where, the boundary spanning role is one of administering commercial aspects of the exchange. Typically, purchasers here do not participate in the technical negotiations. Rather, they seek to adjust the purchasing contracts to the changes made by the development teams.

In one the six case companies studied (company F), activities aimed at managing cost management and innovation issues are structurally separated, meaning that the purchasing department is not involved in mobilizing suppliers to participate in innovation activities or that participation in these activities is a minor issue.

One case company (case company C) expresses this issue of aligning and pursuing the dual aims of exploration and exploitation within one organizational unit as “friendly battles” and describes it in terms of opposites spurring creativity: *Sometimes these immediate opposites collide in what we call “friendly battles”, and this is where true originality occurs*”. As also implied by this quote, this form of organization is also one that create competing agendas. This also means, that prioritization issues between exploration and exploitation activities frequently surfaces, as also pointed out in this quote from a purchaser in case company C, involved in organizing supplier innovation activities.

When purchasing host meetings, where quality control and purchasing are involved it is all about procurement. Even during our supplier days (where suppliers are invited to present new technologies and discuss new product development). It is precisely the same when we participate in department meetings. It is all about cost, lead times etc.. Maybe other issues will be given 15 minutes of the entire 2-hour agenda (Purchasing manager, case company C).

In the cases studied, the manifestation of the structural separation or integration of OA was contingent on the organization of the customer interface. In one of the companies interviewed (case company E), market activities are tailored to meet the needs of important long-standing customers. This typically also involves the configuration of a supply base to meet these specific technical requirements of the market solution developed. Component and other suppliers are critical for developing a new and innovative solution, tailored to specific customers. Engineers from the development teams are therefore eager to involve engineers from supplier firms early in the development processes to ensure leading edge components. At the same time, the case company in question serves customers for which flawless operations is extremely critical, which is enforced by long-term contracts. The ability to live up to the operational targets, depends on the suppliers' ability to continue deliveries of specialized components. Hence, for the overall interest of the company, there is a trade-off in selecting the most appropriate suppliers for development purposes and the most reliable supply bases for continuous deliveries. A similar point with respect to the ambidextrous demands involved in selecting suppliers is raised by an interviewee in case company B.

“We normally collaborate with purchasing on the selection of suppliers, but in this case their task seems to be evaluating whether we want to work with such a small organization. Under other circumstance we wouldn’t, but in this case this small supplier possessed a unique technology, which was unknown in our industry. We needed them to gain an advantage” (Manager, case company B)

Both aims are important, and poses paradoxical claims on the category managers in the purchasing organization. In company B, purchasing may differ between suppliers used in product development and suppliers used in production. This, because swift interaction may be needed with flexible suppliers in the ramp-up and production calibration phase, whereas volume suppliers are called for when products move into production mode. Here, purchasing has a special task in managing dual relationships with suppliers – including the transfer of knowledge between the two types.

We try our utmost to place the development of components at the right supplier the first time. But there are incidents, where we need to move the component to another supplier, including tools located at the supplier. Our suppliers understand and concur with this. In reality, this means that we have both preferred suppliers for prototyping and preferred suppliers for serial production. (case company B)

In another case company (case company A), new product development, purchasing and product development activities are formally separated activities. The company is a world-leading producer in system solutions for heating and cooling and invest heavily in innovation activities for the development of new product series. Most product innovation activities extend from existing technologies and the firm works continually with a relatively stable supply base, where a small group of strategic suppliers

are expected to contribute to the company's innovation activities on a regular basis. Collaboration is more or less routinized, with procurement playing a pivotal role as organizers of continuous dialogue, ensuring that both commercial and technical interests are covered and speaking with "One voice" towards suppliers. However, occasionally product innovation activities are radical and calls for the mobilization of technologies outside the current scope of suppliers. In this particular case, product development decided to develop their own purchasing partnership and initiated this outside the strategic supplier unit, inviting in a representative from the supplier unit, but effectively running it as an independent development partnership with the supplier. Some of these technologies are already controlled by suppliers or it is more strategically lucrative for suppliers to develop these, as they will have use for them in multiple contexts. Search activities of this kind break with the existing organizing practices and poses questions to how and in what way the activities of purchasing and product development activities are best aligned with respect to managing supplier relationships. One way of balancing these traits is suggested by case company A, who has developed a project purchasing unit. The purpose of this unit is to collaborate closely with product development on a project level. Hence, project purchasers help product development in their search for technological solutions within the existing vendor list. They use their influence with the suppliers' marketing department to create sufficient clout for suppliers to mobilize resources for product development and work with these activities in parallel to the category managers.

Once, R&D has discussed designs with the supplier, we take over and discuss design for manufacturing and potential price cuts. As they are informed about the design and its use it is also easier for us to discuss price reductions with them and how this potentially can impact on the overall cost (Case company A)

Case company F experienced a situation, where discussions between purchasing and new product development concerning the continued role of relationships to one particular supplier was unsolvable. Seen from the new product development's perspective, this supplier was critical for a major innovation activity. Strategic supply department found it impossible to work with the supplier and pressured for a replacement. This called for management from the divisional level of the organization to step in and make a special arrangement in which the responsibility for managing relationships with this particular supplier was given to the new product development function. In turn, new product development developed their own small team for dealing with supplier relationships, including also purchaser from strategic purchasing in a liaison role.

Purchasing's role in facilitating suppliers' contribution to OA: Cross-case comparisons

As seen from the detailed discussion of the cases, there are different ways for purchasing to be involved in the pursuit of ambidextrous goals and dealing with the tensions portrayed. In Table 2, we have outlined purchasing's role in accommodating for OA in the cases studied. As seen from the table, we did not discover any pure forms of OA. Rather, we saw a mixture of design principles used for involving purchasing in delivering OA. Furthermore, company D, as it turned did not consider that the purchasing department played any relevant role for the pursuit of OA. For this reason, we omitted this case company in the cross-case comparison.

Table 2: Purchasing department's role in pursuing forms of OA

	company A	company B	company C	company D	company E	company F
Sequential			X	N/A	(x)	
Structural	x	(x)				x
Contextual	(x)	X	(x)		X	(x)

In the following, we will contrast findings across cases to gain further insight into how the different principles of OA affect the role of purchasing in different ways. We will first discuss the purchasing departments' role in the case companies, where the task of involving suppliers is structurally separated, and then move on to discuss the practices of purchasing departments, when they are integrated. This reflects the different ways to providing roles to the purchasing department in pursuing OA, also discussed in tension 3.

Structural separation of departmental responsibilities for ambidextrous supplier involvement

As already mentioned, separating the management of supplier involvement in product development tasks from the commercial side of supplier relationships, is the practice used in several of the cases investigated. This does not mean that purchasing is excluded from these activities or are not affected by them in any way. For instance, purchasing may be represented in a committee or board, overseeing relationships with suppliers or be in control of all supplier communication. Furthermore, it does not mean that purchasing does not face tensions related to the dual aims of involving suppliers in

innovation and cost management activities. This happens in a number of instances, which may be related to *aligning new suppliers with existing purchasing policies*. Purchasing is typically involved when new suppliers are introduced into the manufacturer's supply base and typically administer a range of supply policies and practices (such as for instance supplier certifications) used by the manufacturer. Purchasing may work with these new suppliers and need policies for managing supplier relationships and avoiding confusion or the conflicts that may occur when different departments in the manufacturing company communicate with the same supplier, but not necessarily coordinate these internally in the purchasing department.

Another issue comes to the *ongoing internal alignment of parallel initiatives for the involvement of existing suppliers*. When responsibility of supplier involvement in cost management and innovation issues are separated, a similar separation can be found in the supplier-buyer interface. In case company B, for instance, meetings with suppliers were conducted separately by the purchasing and by the product development departments. However, even though responsibilities for managing innovation activities and cost management issues with suppliers are formally separated between departments in the buying company, this often makes less sense and there are ongoing tensions between these dual activities. Innovation and cost management activities may seem interdependent or at least strongly related, from the perspective of the supplier. Seen from a suppliers' perspective, the willingness and ability to mobilize resources in support of a customer's innovation activities may be strongly related to the cost-cutting pressure faced from the same customer. Also, from the perspective of an internal task team responsible for carrying out an innovation activity extending into existing supplier activities, for instance involving existing suppliers in new product development and understanding how this may affect the total engagement with a particular supplier, calls for ongoing and integral coordination of

both aims. Hence, informal meetings and talks will take place internally and ongoing adjustments between the departments activities must be made, when purchasing policies impacts on innovation activities or vice versa. In the cases we have studied, socialization and interpersonal relationships between department representatives seems to be key for solving ongoing issues. This suggests, that in line with current research that tensions and complexities of tensions raising from pursuing ambidextrous supplier involvement often are resolved at an interpersonal rather than interdepartmental level. In some cases, problems are not solvable and more formal adjustments on the departmental or inter-organizational level must be made in order to restore relationships with suppliers (Ellegaard & Andersen, 2015). For instance, in case company F, a supplier which traditionally had participated in test activities and without extra costs had supplied personnel to the customer's radical product development activities, changed their policy towards this customer, after the purchasing department, following a restructuring towards more specialization - installed a new cost saving regime towards this supplier. This resulted in a critical episode of tension in the relationship and was only restored after much negotiations in order to restore what the supplier saw as a breach in the social contract with their customer and substantial changes were made in the written supplier contract.

Structural integration of departmental responsibilities for ambidextrous supplier involvement

In several of the case companies studied, the purchasing organization is chiefly responsible for managing supplier relationships and acted key boundary spanners between supplier organizations and the departments in the buying company. This also means, that purchasers are involved in organizing and managing innovation activities along with the more traditional activities of ensuring suppliers' ability to deliver and focusing on cost management issues. We explored several practices in the case

companies, which may be sorted into two different themes: Representation and voicing multiple aims and paradoxical thinking.

For the purchasing department, being assigned with managing the ongoing dualities of innovation and cost management, means that a) top management has delegated this responsibility to the purchasing department – for instance by including both contributions to cost savings and innovations in the key performance indicators (KPIs) used to manage the performance of the department and b) meeting both KPIs must be dealt with in the department and that other organizational stakeholders are actively and persistently lobbying for influence, along with the supplier. Spanning the organizational boundary between the supplier organization and multiple divisions in the buying firm in order to manage these dualities, involves *developing and sustaining departmental practices allowing for the representation, voicing and ongoing reconciliation of different priorities among the constituent's activities, while also actively influencing and contributing to the prioritization among these.*

First of all, this means that purchasing departments must have strong insights in most aspects of the suppliers' activities, resources and capabilities and organize internally according to key supply management practices (Andersen & Rask, 2003). Purchasing officers participates or is briefed on the interacts taking place between the supplier and various departments in the buying company and is also involved in internal product development or quality management meetings related to supplier issues (knowledge management in purchasing?). In addition, purchasers actively search and involve suppliers and internal departments to seek out novel insights. In case B, for instance the purchasing department was typically organizing regular meetings with suppliers, setting the agenda for such meetings and collecting information. In addition, the supplier is also responsible for organizing technological

foresighting activities, where those responsible for technological development in the supplier and the buying firms would meet and exchange insights and expectations with respect to coming technologies and their impact on current and future investment and production activities. Also, they sit in on product development committees and provide the supplier insights they have or activate their network of contacts in the supplier firm. In case company F, the purchasing department is also given an integral role, which is reflected in their KPIs and is – like in company B – responsible for maintaining the overall dialogue with suppliers. But this department is faced with other challenges than those seen in company B, and conversely deploy different practices. Since the innovation activities in company A are decentralized into four different divisions and furthermore are scattered over dozens of development teams. More often than not internal development teams involve informal talks with development engineers from supplier firms. Keeping up with all exchanges between suppliers and development teams is an impossible task. Here, the purchasing department instead seek to install general policies regarding when and how to inform purchasing with respect to important events. In addition, purchasing have a comparatively better overview of the capabilities present in the existing supply base and knows about the development activities which a particular supplier has been involved in. Hence, in order to inform about this (and seeking to hinder an unnecessary expansion of the existing supply base) purchasing officers actively invite themselves to the internal development team meetings, seeking to convey their information to the development teams.

The ongoing pressure for performing on both cost management and innovation issues also have consequences for individual employees in the purchasing function. They face priority problems of a wicked nature – which lacks a solution that will satisfy all stakeholders involved (Camillus, 2008). Furthermore, they must make judgements as well as take initiatives on an ongoing basis that can help

forestall or alleviate tensions between priorities linked to aims of exploration and exploitation activities. This type of functioning calls for supporting both norms and management practices in the purchasing department that encourage and support the development of professional capabilities as well as for attracting extrovert personnel and for supporting the development of personal characteristics that can be helpful in multitasking and political problem solving, such as efficacious behaviour, mediation, brokering and cooperation. These needs were also reflected in the case companies. At the time of data collection, company F had recently hired a new head of purchasing, and he had actively started to look for profiles, which would take on active implementation of ambidextrous policies. Employing purchasing officers with a different background and experience than the existing group of purchasing officers and a known interest in actively installing new purchasing policies in the organization was seen as a *sine qua non* in the transformation of purchasing's role to meet new key performance indicators.

Concluding discussion and impact for research and management practice

The cross-case analysis has provided insights into the evolving role of purchasing departments in organizations increasingly relying on their ability to act ambidextrous in supply networks. First, the case studies show the changing roles and responsibilities of purchasing departments as they become increasingly involved in operations as well as development activities in supply networks. Our findings suggest, that purchasing department have different roles in mobilizing suppliers and meditating with internal functions in support of supply network ambidexterity. Their involvement range from an integrative role, in which a substantial part of the activities are challenged through the purchasing department, to cases where the purchasing department plays a participative or consulting role. This has consequences for the organization and activities carried out by these departments, as they become designed to accommodate with the different needs for involving suppliers in activities together with

other organizational functions. This also means, that purchasing departments develop new liaisons with departments – they build informal teams with managers from other departments on an ad hoc basis or become formally represented in standing work groups. Related to this, purchasing departments takes on new responsibilities and are increasingly engaged in the development and provision of market offerings. This also means that the skill profiles of purchasing managers are changing in these organizations. In step with new responsibilities becoming increasingly important, traditional skills related to purchasing are increasingly taken on by others in the supply network. Second, the study shows that tensions in terms of opposite demands towards purchasing departments abound from these changes. These tensions manifest themselves and are dealt with differently through following and combining different modes of OA in the case organizations studied, revealing to some extent the multitude of organizational arrangements possible. The study also shows, that the organization of supply network ambidexterity is more pragmatic and multifaceted than suggested by the ideal types or modes of ambidexterity discussed in the literature.

Our research contributes to managerial practice as well as to research. For purchasing managers, understanding the important connection between internal and external demands and how these reflect the overall fitness and value proposition of the organization is an important insight, when it comes to pursuing their roles effectively.

This study contributes to the research agendas in literature on strategic purchasing as well as the literature on OA, by outlining critical organizational tensions with respect to the internal and external orientation in this activity and discuss the extent to which and how the purchasing department may be involved in these activities.

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