

# **EVOLVING PURCHASING AND SUPPLY ORGANIZATIONS: A CONTINGENCY FRAMEWORK FOR STRUCTURAL ALTERNATIVES**

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## **ABSTRACT**

Purchasing and Supply Management (PSM) is under significant pressure to find levers to further increase its contribution to corporate goals. In order to improve performance in line with expectations, Purchasing and Supply Organizations (PSOs) have to evolve continuously. To help address this challenge, a comprehensive contingency framework of PSO structures is presented. The framework is based on existing literature on PSO contingency factors as well as analysis of two case companies. The findings highlight the importance of taking a contingency perspective for understanding the PSO and combining a detailed view of macro-level structural dimensions with micro-level characteristics. These macro-level dimensions comprise category, business unit, geography and activity. The micro-level characteristics comprise centralization, formalization, specialization, participation and standardization. From a theoretical perspective, the contingency framework opens up insights that can be leveraged in future studies in the fields of hybrid PSOs, global sourcing organizations, and International Purchasing Offices (IPOs). From a practical standpoint, an assessment of external and internal contingencies and their relation to specific structural dimensions and characteristics provides the opportunity for more consciously evolving the PSO to continue to improve PSM's contribution.

**Keywords:** *Procurement, Purchasing, Supply Management, Sourcing, Purchasing and Supply Organization (PSO), Structure, Design, Center of Excellence, Staff Function, Line Function, Centralization, Hybrid, Global, Local, Contingency Theory, Case Study Research*

## 1 INTRODUCTION

With increasing reliance by firms on suppliers' inputs and contributions, the Purchasing and Supply Management (PSM) function's importance as the interface managing these inputs has increased (Van Weele and Van Raaij, 2014). Leverage can be gained through cost savings on the external spend side, as well as in speed, quality, and flexibility with the right supply base (Carr and Smeltzer, 2000; Choi and Krause, 2006; Scannel et al., 2000). During the last decade and financial crisis, PSM has intensified its efforts to put many of these levers in motion. As a result, the function is now under increased pressure to search for additional value generation, placing particular emphasis on true integration of suppliers, having them bring actual product or process innovations, as well as sustainability, to the table, often across borders and time zones (Schiele, 2012, 2010; Caniato et al., 2012).

Goals such as supplier innovation and sustainability are quite different from previous goals focused on maximizing savings or operative efficiency through increasing automation rates. These considerations raise the question of how to organize PSM functions to fulfill PSM goals optimally. Towards this point, Schneider and Wallenburg (2013) reviewed 50 years of research on organizing the PSM function to evaluate whether more research is needed on Purchasing and Supply Organization (PSO). They conclude that (p. 152) "future research will need to consider especially (a) how to support purchasing's growing importance and enlarged set of responsibilities by (more) effective and (more) efficient organizational structures. (b) how to deal with increasing market dynamics and volatility by providing purchasing with the structural adaptability and flexibility necessary to support the company's overall market responsiveness and competitiveness".

While research has demonstrated that firms make frequent major changes to their organizational structures, e.g. in order to optimize costs (Leenders and Johnson, 2000), further research on the decision process and the actual structural dimensions chosen are needed

(Johnson and Leenders, 2006, 2012). Specifically, Johnson and Leenders concluded (2006, p. 333) that “largely absent from the purchasing literature is research that examines the environment-strategy-structure relationship.” Fortunately, some extant research on PSOs has taken a contingency perspective, yet only to a limited extent (Zheng et al., 2007).<sup>1</sup> The work by Rozemeijer et al. (2003) stands out in contingency theory based PSO research: they highlight in their conceptual model that the (a) business context (market, technology and business environment), (b) corporate organization, (c) corporate strategy, and (d) purchasing maturity (the level of professionalism in purchasing) impact corporate purchasing synergy, structure, and ultimately, performance. In line with this Glock and Hochrein (2011, p. 173), based on their extensive literature review on PSO research from 1967 to 2009, suggest that further research needs to “1) Analyze inconsistent results between contextual variables and the structure of the purchasing function. [...] 4) Identify additional contingency relationships to further our understanding of which situational factors influence the PO [purchasing organization].” At the same time, recent research on International Purchasing Offices (IPOs) has highlighted that a more comprehensive description is required in order to characterize PSOs (Jia et al., 2014).

Addressing these research gaps, our study aims to shed light on PSOs using a Contingency Theory Perspective. Our overall research objective is to propose a comprehensive contingency framework for the PSO, highlighting areas for future research. The research question is: *how do external and internal contingency factors affect PSO structure?* We seek to address this question by providing insights on two more specific research questions:

- a) *How can PSO structure be comprehensively described?*
- b) *How do contingency factors influence evolution of the PSO?*

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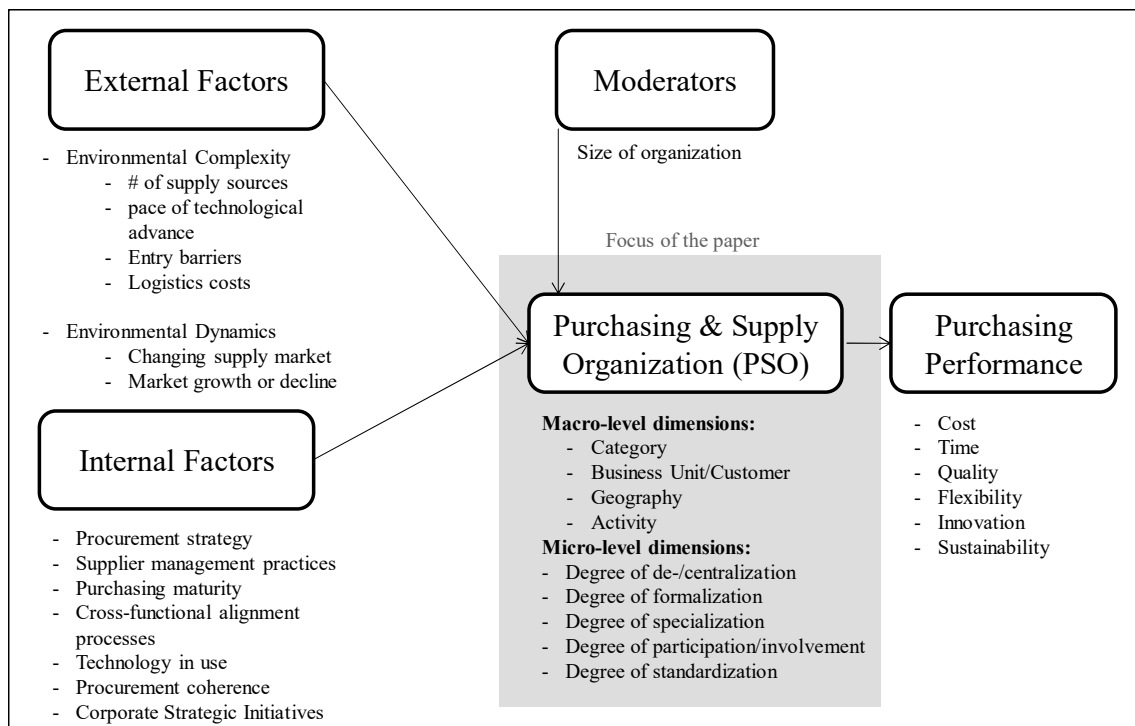
<sup>1</sup> Other theoretical lenses than contingency theory applied in PSO are research transaction cost theory, open system theory, resource-based view, information processing theory, agency theory, experience curve and game theory (Glock and Hochrein, 2011).

We start by summarizing the existing literature on PSO dimensions and contingency factors in section 2. Next, a description of the methodology follows in section 3, and section 4 presents the main results of the two cases. Section 5 discusses the main results and summarizes them as propositions. In section 6, the paper closes with the main conclusions, limitations, managerial and research implications.

## 2 DIMENSIONS OF PURCHASING AND SUPPLY ORGANIZATION, CONTINGENCY FACTORS AND PERFORMANCE

The term PSO is an established way to refer to how PSM activities and competencies are organized and structured in the firm (Carter et al., 2000). The overall research framework that summarizes the literature review is shown in Figure 1. As a novelty to PSO research, the distinction of macro-level dimensions and micro-level characteristics is introduced in this paper to clarify the respective units of analysis.

**Figure 1:** Conceptual research framework



To illustrate how previous research lacks a common language for this differentiation, Narasimhan and Carter (1990, p. 9) noted this difference like this: “a firm can adopt either a centralized, decentralized, or matrix organizational structure in conjunction with various forms of divisionalizations. Each of these organizational forms can be further segmented by geography, product, or both.” These “divisionalizations” are what we refer to as macro-level dimensions, and the hierarchical coordination (centralization) is one of the micro-level characteristics, as this degree can be decided for each of the macro-level “divisionalizations”. What they then referred to as “further segmented” would just be a sub-dimension on the macro-level. In this case first macro-level by category (e.g. raw materials), then second macro-level by geography (e.g. region). For each of these macro-level choices, further choices on micro-level can still be made separately, both on the global and local levels. For example, the global category managers (division by *category*) might operate in a hybrid mode, i.e. part of the organization operates centralized in headquarters, another part remains co-located at production site locations (division by *geography*), but is coordinated closely with headquarters. However, most existing research does not differentiate macro and micro levels. As a result, a firm exhibiting a “mixed” approach to centralization as described above, would be labelled as “hybrid” without detecting the actual differences in macro structures and the global versus local structures.

Therefore, to summarize the conceptual background on PSO structure for this paper, the macro-level unit of analysis is the PSM department structure (org chart view) in terms of the *dimensions* chosen. The micro-level unit of analysis is with which *characteristics* PSM processes are enacted *within* a department structure (e.g. with which degree of standardization).<sup>2</sup> In this application, micro does not refer to the level of the individual

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<sup>2</sup> This terminology is similar to previous research that has referred to the macro-level as “organizational design” and micro-level as “department/division” (e.g. Poole and Van de Ven, 1989, p. 570), but in this paper the macro-level is already the PSO department level.

employee, but delimits the overall PSO organizational design (macro) from the more detailed design of how it is operated (micro). The organizational dimensions and characteristics, as well as the contingency factors, will now be described. For the performance shown on the right in Figure 1, we refer to the comprehensive literature review and empirical investigation by Caniato et al. (2012), who defined the key purchasing performance indicators as Cost, Time, Quality, Flexibility, Innovation and Sustainability.

## 2.1 Describing the Purchasing and Supply Organization (PSO)

While the degree of centralization has been one of the most studied organizational changes of the PSO (Johnson et al., 2014; Tchokogué et al., 2011), so far organizational structures at the macro level are seldom studied specifically. Instead, they are mentioned rather implicitly as different structural alternatives for PSM, for example, organization by (a) categories (e.g. Ates et al., 2017; Karjalainen, 2011; Luzzini et al., 2014; Nellore and Motwani, 1999; Trautmann et al., 2009a, 2009b), (b) product line divisions, or by (c) geographic area (e.g. Cavinato, 1992; Giunipero and Monczka, 1997; Narasimhan and Carter, 1990). These are taken up in this study explicitly as three structural dimensions a PSO can have on the macro-level: Category, business unit/customer, and geography. The resulting structural dimensions are summarized in Table 1.

**Table 1:** Defining the macro-level dimensions of the PSO

<b>Dimension</b>	<b>Department structure</b>
Category	Departments are organized by what is bought (e.g. structuring PSO departments into departments for IT Services, Raw Materials, etc.). (e.g. Trautmann et al., 2009a, 2009b)
Business Unit/Product Line Division	Departments are organized by market customer segments (e.g. structuring PSO departments according to B2B versus B2C lines of business). (e.g. Narasimhan and Carter, 1990; Rozemeijer et al., 2003)
Geography	Departments are organized according to geographical footprint (e.g. structuring PSO departments according to regions into Purchasing North America, Purchasing Latin America, Purchasing Asia Pacific). (e.g. Giunipero and Monczka, 1997)
Activity	Departments are organized into different activity clusters, (e.g. splitting into a department for strategic sourcing and another for transactional purchasing). (PSC, 2009, 2013)

In line with this, recent research on IPOs has highlighted that the situation is much more complex than just looking at centralization. According to Jia et al (2014, p. 290) “centralization/decentralization of a purchase structure obviously depends on how the responsibilities are divided along the levels introduced *above* [emphasis added].” They continue by mentioning that sometimes the structure is by business units, sometimes by the IPOs in their respective location. In the terminology put forward in this paper, this directly refers to the macro-level structure and exemplarily mentions the macro-level dimensions business unit and geography. Table 2 summarizes both the macro- and micro-level attributes previously employed in academic literature to describe the PSO. The literature review on the PSO by Schneider and Wallenburg (2013) underlined the most covered dimensions of the PSO structure. Their study analyzed 212 journal articles on the PSO topic alone, over a 50-year period. It resulted in 99 articles in the category ‘structure and formalities’ and 26 articles in the subcategory ‘structural determinants.’ Of the 26 journal articles, 14 studies specifically highlighted the most frequent features of the PSO over those years sampled. We summarized the content of these 14 studies in Table 2 and unsurprisingly, the centralization versus decentralization dichotomy is the most prevalent. Research has defined centralized and decentralized PSOs based on the locus of decision-making (Arnold, 1999; Johnson and Leenders, 2001, 2004a, 2004b; Narasimhan and Carter, 1990). As there is a trade-off between efficiency/control by centralization, versus flexibility/service level by decentralization (e.g. Luzzini et al., 2014), research has identified a hybrid approach in order to bridge that trade-off, combining elements of both centralization and decentralization (Johnson and Leenders, 2001; Narasimhan and Carter, 1990). Also referred to as organizational integration by coordinative mechanisms (e.g. Trautmann et al., 2009b), hybrid approaches tend to ensure alignment of purchasing decisions across multiple units. While the degree of centralization is one of the most studied PSO characteristics, the micro-level PSO characteristics comprise the degrees of

centralization, formalization, specialization, participation/involvement, and standardization. The latter are all briefly defined in Table 3. As Table 2 highlighted, there are a number of studies (e.g. Narasimhan and Carter, 1990; Trautmann et al., 2009a) that have combined macro-level dimensions and micro-level characteristics (but without utilizing that terminology). None of those has simultaneously included all macro- and micro-level aspects of the PSO organizational structure that were introduced in the comprehensive framework in Figure 1.



**Table 2:** Dimensions of the PSO addressed in literature

Article	Research question or objective	Structure construct(s) addressed	Performance outcome
Toyne (1977).	Factors that affect authority levels of foreign-based purchasing managers	Micro: Centralization and decentralization of authority	Structure defines the extent of integration and decision making in procurement.
Klebba and Dwyer (1981).	The relationship between environment and purchasing decision structure	Micro: Centralization, formalization and specialization	High uncertainty allows for a more flexible purchasing structure
Wagner (1984).	Systematic review of the purchasing function	Micro: Centralization	Economies of scale
Ronchetto et al. (1989).	The nature of workflow and communication patterns in purchasing activities	Micro: Position and influence of a buyer in purchasing structure	The basis for development of strategy
Taylor and Tucker (1989).	Factors for centralized procurement	Micro: Centralization and decentralization of structure	Cost reduction
Narasimhan and Carter (1990).	The implementation of a materials management structure in an international sourcing firm	Macro: Category, Business Unit, Geography; Micro: Centralization, decentralization and matrix structures	Determines the extent of strategy and sourcing integration as well as reduction of cost.
Stanley (1993).	The relationship between environment, structure and performance of the purchasing function	Centralization, formalization, specialization and reward systems	Better purchasing and supply chain performance
Giunipero and Monczka (1997).	What is the appropriate structure to support international purchasing activities?	Macro: Category, Geography; Micro: Centralized, decentralized, coordinated	Structure supports purchasing effectiveness
Laios and Xideas (1994).	Differences in purchasing structures of public institutions and industrial companies	Decentralization, articulation and depth of analysis	Improvement in organizational decision making processes
Arnold (1999).	How to organize for effective global sourcing	Centralization and decentralization of purchasing	Better structure can enhance the firms of competitive advantage.
Rozemeijer et al. (2003).	How to organize for purchasing synergy in multi-business unit firms.	Macro: Business Unit Micro: Centralized, decentralized, federated and centred purchasing.	Purchase synergies leads to improved corporate advantage
Wood (2005).	Relationship between firm's configuration and the structure of it's of buying centre.	Micro: Centralization, formalization and size of buying unit	Structure a basis of resource allocation in seller organizations.
Ganeshan et al. (2007).	How to strike a balance between centralized and decentralized purchasing in retail firms.	Micro: Centralization and decentralization of structure	Structure can be a basis of improvement in supply chain efficiencies and better customer service
Trautmann et al. (2009a).	How to organize global sourcing at category level in purchasing.	Macro: Category Micro: Centralization, decentralization and hybrid structures	Opportunities for economies of scale, information and process

**Table 3:** Defining the micro-level characteristics of the PSO

<b>Construct</b>	<b>Definition</b>
Formalization	“the extent to which purchasing tasks/roles are defined by various formal documents describing rules, procedures and policies” (Kotteaku et al., 1995, p. 30)
Centralization	“the degree to which authority, responsibility, and power are concentrated within an organization or buying unit” (Johnston and Bonoma, 1981, p. 148).
Specialization	“the degree to which purchasing activities are conducted by specialized departments, committees and skilled personnel” (Glock and Hochrein, 2011, p. 158).
Standardization	“the degree to which organizational activities or organizational routines are precisely defined” (Glock and Hochrein, 2011, p. 158).
Participation	“the extent to which various organizational members are involved in decision making” (Johnston and Bonoma, 1981, p. 148).

Expanding on the above, the Procurement Strategy Council (PSC), a practice-oriented provider of PSM benchmarking information and reports, has made the case for not three, but four structural alternatives along which companies can structure their PSOs: category, business unit/customer, geography, or activity (PSC, 2009). “Activity” means structuring PSO departments according to certain processes (e.g. supplier management, purchase order processing). In their studies they also report how these dimensions are combined. In their updated study released 2013 (n=93; PSC, 2013), for example, they show that organizing by Activity in particular has gained popularity. While in 2009 (n=54) 13% of respondents had organized their PSO according to activity, it became the main macro-level dimension for 26% of the respondents in 2013, with the combinations of activity-category (16%, the most popular combination overall), activity-geography (6%), and activity-business unit (4%). The next most popular combination became business unit combined with category (14%). In 2009, the most popular combination had been category-business unit (27% of all respondents). Thus, in order to further enhance its comprehensiveness, the conceptual framework in Figure 1 is complemented by the dimension of activity.<sup>3</sup>

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<sup>3</sup> The advent of a process-oriented organizational orientation in PSM was forecasted by Trent in 2004, p. 15: “An expected growth in organizations around processes [...] In the shift from a functional to a process orientation, the process [...] becomes the focal point of an organization’s design”. But this paper, as well as Bals and Turkulainen (2017), are the first to report on its realization until now.

## **2.2 The Contingencies**

For conceptualizing what leads to selection of a particular structure, the contingency view offers an established theoretical framework. Contingency theory stems from Chandler's (1962) work that structure follows strategy. The context that shapes the structure is the organization's operating environment, while structure is the mechanism through which organizational activities are performed. Proponents of contingency theory suggest that organizational effectiveness is in essence a result of fitting characteristics of the organization, i.e. its structure, to contingencies reflecting the situation of the organization (Lawrence and Lorsch, 1967; Donaldson, 2001). The organizational design characteristics of a firm should match the organizational context and firm's strategy in order to achieve performance improvements (Burns and Stalker, 1961; Chandler, 1962; Govindarajan 1986; Wasserman, 2008; Volberda et al., 2012). Change in contingencies, such as growth of the market or increase in firm size, imply that the organizational structure and resources are adjusted to accommodate the new demands. Arguably, this changes its performance trajectory (Donaldson, 2001; Prajogo, 2016). Following its inception, contingency theory has been critically refined over the decades (e.g. Schoonhoven, 1981; Van de Ven and Drazin, 1985; Pennings, 1992; Van de Ven et al., 2013). Building on it, we follow the line of research that PSO adjustments are driven by external and internal contingencies (Zheng et al., 2007; Rozemeijer et al., 2003; Glock and Hochrein, 2011).

### **2.2.1 External Contingencies**

A brief overview of the external contingencies can be seen in Table 4. The contingencies discussed here are inspired by Pfohl and Zöllner's (1987) study on contingencies for logistics departments, which are included as proxies for PSM here. Based on previous work on contingencies (Duncan, 1972; Jurkovich, 1974; Kieser and Kubicek, 1983), their study suggests a relationship between increasing complexity and dynamism in the external environment with the orientation of the logistics function. In the following presentation of the contingencies, these

have been updated with more current research in the PSM field (e.g. Johnson and Leenders, 2001; Trautmann et al., 2009b; Glock and Broens, 2013).

**Table 4:** Review of the external contingencies

External Variable	Attribute
Environmental complexity	Number of supply sources, pace of technological advance, entry barriers and logistics costs
Environmental dynamism	Change in supply market demands and relationships as well as market growth or decline

### ***2.2.1.1 Environmental Complexity***

The Pfohl and Zöllner (1987) study suggests that when environmental complexity (e.g. number of suppliers and customers) increases, the functions responsible for value creation and capture adjust their tasks and activities in order to match the growing complexity. The effects are suggested to be most visible in functions such as logistics, PSM, and production, which are functions that directly influence value creation and firm cost performance. In our framework, this is translated into number of supply sources, pace of technological advance, entry barriers, and logistics costs (in direct analogy to “complexity of supply market” criteria; Kraljic, 1983).

### ***2.2.1.2 Environmental Dynamism***

Pfohl and Zöllner (1987) suggest that the rate of change in customer delivery times, the nature and type of demand, and the demands from suppliers together increase organizational turbulence and therefore influence the structure of logistics organizations. For PSM, this is taken up here as change in supply cost/ delivery times/ quality/ flexibility/ innovation/ sustainability parameters and changing demands by suppliers. In line with that, previous research has found that purchasing structures of high-tech companies tend to be less formalized and specialized, which can be ascribed to a higher need for flexibility (Juha and Pentti, 2008).

Furthermore, growth or decline in a firm’s market size can lead to change in organizational strategy as well as its structure (Johnson and Leenders, 2001). For example, market growth may imply change in location, product lines, distribution hubs, and

internationalization. Organizations respond to expansion by adding more hierarchical layers, tasks, and roles in order to reduce uncertainty<sup>4</sup> and increase internal control (Trautmann et al., 2009b). While market growth or decline is a firm-level contingency factor, we include it in the framework as it can affect PSM in a number of ways, e.g. to assure the availability of supply in case of market growth or to reduce liabilities to contractual purchase volume if markets decline.

### **2.2.2 Internal Contingencies**

A brief overview of the internal contingencies can be seen in Table 5. They are ordered based on whether they are more in the PSM department’s scope, toward more company-wide aspects.

**Table 5:** Review of the internal contingencies

<b>Internal variable</b>	<b>Attribute</b>
Purchasing strategy	Extent of goal alignment/functional alignment, change in performance outcomes
Supplier management practices	Nature of supplier relationships, supply base rationalization and supply network reconfiguration
Level of purchasing maturity	Extent of formalization, professionalism and the standardization of tasks/process
Cross-functional alignment processes	Extent of cross-functional interface, teams and team functioning and quality of communication exchanges
Technology in use	Nature of technology in use
Level of purchasing coherence	Ability of a multi-product, divisionalized corporation to generate and explore synergies of various types
Corporate strategic initiatives	Downsizing, mergers/acquisitions/divestures, new vision

#### **2.2.2.1 Purchasing Strategy**

*Purchasing strategy* as a functional strategy follows corporate strategy (e.g. González-Benito, 2007a; Hesping and Schiele, 2015; Paulraj et al., 2006). The subtle effect of this argument, however, is that PSM must adjust its structure to support the new purchasing strategy, otherwise the ability to effectively coordinate this strategy internally is lost (Virolainen, 1998).

#### **2.2.2.2 Supplier Management Practices**

<sup>4</sup> The effects of environmental uncertainty on the PSO are yet inconclusive, and most of the related studies date back to the 70s and 80s (Glock and Hochrein, 2011).

*Supplier management practices*, such as supplier performance management, supply base management, and early supplier involvement require new forms of functional configurations (Lakemond et al., 2001). Performance driven strategies, such as make or buy, outsourcing, and supplier involvement in new product development are forcing organizations to make changes to their structure in order to increase focus, flexibility, and flow of innovation from suppliers. When organizations change the way they interact with suppliers and supplier networks, the role and setup of their PSOs must also reflect this new reality (McIvor et al., 1997).

### **2.2.2.3 Purchasing Maturity**

*Purchasing maturity* is related to the level of professionalism in the PSM function.<sup>5</sup> It suggests that more mature purchasing operations (high status) tend to have more complex structures to achieve synergies, e.g. as a result of increasing purchasing volumes and a more diversified business unit (BU) network (Rozemeijer, 2000; Rozemeijer et al., 2003). Purchasing maturity has also been suggested to influence how effectively companies can implement new practices (Schiele, 2007). By comprehensively reviewing the ten major purchasing maturity models at that time, Schiele (2007, pp. 277, 285) developed a four-stage maturity model including an assessment on “organizational structure of purchasing”, which will be reflected in the case analysis.

### **2.2.2.4 Cross-Functional Alignment Processes**

The growing emphasis on *cross-functional integration* and *cross-functional teams*, such as involving PSM personnel in new product development, not only advances the strategic role of PSM in the organization, but it improves knowledge diffusion and flow of information (Foerstl et al., 2013). In his study on PSM’s integration in new product development, Schiele (2010) proposes a link between that need and the PSO structure. From a structural point of view, cross-

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<sup>5</sup> Purchasing maturity may simultaneously be enhanced or deterred by a certain organizational structure, so from a dynamic view it could also be an outcome variable in the conceptual framework. In the scenario when a new PSO structure is decided on, this refers to the current maturity influencing which macro- and micro-level choices might be considered viable by the decision makers.

functional purchasing processes demand cross-functional structures in order to allow teamwork, flexibility, and diffused responsibilities (Trent and Monczka, 1994).

#### ***2.2.2.5 Technology in Use***

As a contingency factor in the logistics context, technology has been highlighted as an influence on organizational structures (Pfohl and Zöllner, 1987). In the PSM context, Brenner and Hamm (1996) showed that although information technology (IT) (e.g. electronic data interchange) adoption in many organizational processes improved efficiency, it also changed work patterns and behaviors. The debate on the strategic relevance of IT versus its tactical role in purchasing activities still continues (Ellram and Zsidisin, 2002; Trkman and McCormack, 2010), but IT's role in simplifying purchasing activities that are carried out with and across other functions and suppliers has been emphasized (Sriram and Stump, 2004). Firm investment in IT and purchasing related technologies has been found to be essential for business performance and productivity (Sriram and Stump, 2004; González-Benito, 2007b; Rodríguez-Escobar and González-Benito, 2015). Because of this influence on how PSM activities can be carried out with or without technological support, IT is included as one of the internal contingencies to influence the PSO. As a contingency for the PSO, the use of performance measurement systems has been found to foster decentralization, as it holds employees accountable while giving them greater decision making authority (Gianakis and Wang, 2000).

#### ***2.2.2.6 Purchasing Corporate Coherence***

The term *corporate coherence* was first introduced by Teece et al. (1994). In the PSM context it relates to “the ability of a multi-product, divisionalized corporation to generate and explore synergies of various types”, and “the extent to which the different parts of the corporation operate and are managed as one entity” (Rozemeijer et al., 2003, pp. 7, 10).<sup>6</sup> For example, BUs

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<sup>6</sup> Also purchasing coherence may simultaneously be enhanced or deterred by a certain organizational structure, so from a dynamic view it could also be an outcome variable in the conceptual framework. In the scenario when a new PSO structure is decided on, this refers to which potential synergies exist, so certain macro- and micro-level choices might be considered viable by the decision makers to attain those synergies.

operate with certain degrees of (in)dependence because of differences in synergy characteristics. Following this line of thought, a company with BUs that share homogenous demands should have high corporate coherence in order to leverage purchasing synergies, as compared to heterogeneous purchasing organizations (Faes et al., 2000). In this study we consider corporate coherence as an internal contingency, e.g. if there are no BUs with similar spend, required corporate coherence is low.

#### **2.2.2.7 Corporate Strategic Initiatives**

An internal contingency put forward as an antecedent to PSO changes has been *corporate strategic initiatives*, comprising downsizing, mergers/acquisitions/divestures, and new vision (Johnson and Leenders, 2001). These are on the corporate level and may influence PSM either indirectly or directly. They can directly influence PSM, for example, if the whole company is reorganized in a downsizing project wherein PSM might have to fall in line (Johnson and Leenders, 2001). PSM can also be affected, for example, after a merger or acquisition when the management is focused on leveraging purchasing synergies by combining two PSM departments. Furthermore, if the overall organizational structure of the company is adapted as a strategic initiative, this could also have an impact. Gianakis and Wang (2000) showed that customer orientation of the company favors decentralization of the PSO (to foster flexibility and short lead times). Contrastingly, initiatives to reduce headcount in purchasing may induce higher degrees of centralization and formalization, and lower degrees of participation (Lewin, 2001).

#### **2.2.3 Size of Organization**

*Size of organization* is one of the most discussed organizational level contingencies in the literature, and it strongly influences how PSM roles change (Trent, 2004). Size can be operationalized as sales revenue, number of employees (Wood, 2005), or the specific number of employees involved in the buying process (Lewin and Donthu, 2005). Trent (2004) showed



that the size of the organization (measured by sales revenue) influences the type of organizational design it adopts, concluding that large organizations tend to have a more complex purchasing structure than small organizations. The study further shows that larger firms that have more at stake in terms of global resources<sup>7</sup> and facilities tend to adopt more complex PSOs than smaller firms. By now, the size of the organization has become a common variable in PSO studies (e.g. Glock and Broens, 2013; Lewin and Donthu, 2005), and is therefore featured as a moderator in Figure 1.

### **3 METHODOLOGY**

#### **3.1 Case Study Approach**

Elaborating on the contingency perspective, our goal is to identify and develop a comprehensive PSO research framework that can be used for future research testing purposes. Because of the type of research questions to be addressed (Yin, 2009), and the type of problem we investigated (Stake, 1998), we performed an in-depth case study analysis (Borch and Arthur, 1995; Eisenhardt, 1989) along a theory elaboration approach (Ketokivi and Choi, 2014).

The empirical data was gathered from two cases studies. The first case (*hereafter* BAK) is an industrial bakery house serving the grocery retail market in the Nordic countries and eastern Baltic Sea region. The company has grown through a series of mergers of local, small bakeries over time, and the corporate consolidation process is still partly ongoing. The second case (*hereafter* CHEM) is a global multinational corporation (MNC) in the chemical industry, operating multiple business units with a high product innovation focus.

We identified the first case as a result of a search for a smaller, but still geographically dispersed, enterprise, as previous research often has centered on large MNCs. The case company was approached early 2009, starting with a research co-operation in the Finnish

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<sup>7</sup> In multi-national corporations (MNCs) the scope of PSO size transcends national borders, as employees may be highly geographically dispersed.

Sourcing development initiative. The second case was selected to represent a large company example with a longer-established, potentially more mature PSO. In our search for case companies, the screening also targeted companies that would ideally have coverage of various macro-level structural dimensions, i.e. of category, business unit, and geography, in order to be able to illustrate all of them for the first time in a research paper. After consideration of several potential cases, the choice fell on BAK and CHEM for these reasons.

### 3.2 Interview Protocol and Data Collection

Often qualitative case approaches are criticized as being “a collection of anecdotes”, that they lack rigor, and that they are unable to generalize from a small number of cases, which at times can be unjustified claims (Stuart et al., 2002, p. 429). While quantitative research has precise positivist measures for methodological rigor, recent qualitative studies adopt more interpretivist and constructivist paradigms for case research (e.g. Venkatesh et al., 2013). Appendix A shows more information on how the choices of data types, the research context, data gathering practices, and generalization were implemented in the paper in order to enhance methodological rigor. Interviews and observation notes were the main source of the data analysis. A standard semi-structured interview guide (please see appendix B) was used for both cases. The interviewees can be seen in Table 6.

**Table 6:** Excerpt from the data collection: Interviewees by year (interview guide appendix B)

<b>BAK</b>	<b>CHEM</b>
Procurement Head (2010)	Chief Procurement Officer (2010)
Business Unit Head (2010)	Head of Performance Management (2010)
Business Controller of Sourcing and Procurement (2010)	Head of Procurement North America (2010)
Chief Procurement Officer (2015)	Head of Procurement Germany (2010)
Chief Supply Chain Officer (2015)	Head of Procurement Canada (2010)
	Head of Category Technical Materials & Equipment (2010)

For case company BAK, interviews were performed with five different corporate executives responsible for purchasing and one business unit, respectively. The interviews were

conducted in 2010 and again in 2015 by two/one researchers, then recorded and transcribed for analysis. Observations were made from between 2011 to 2014, and in the beginning of 2015, another round of formal interviews was done with two interviewees.

For the case company CHEM, the data was collected from 2010 until 2013 (2 years after the go-live of the new model in 2011). For CHEM, the most relevant time period for the PSO change was in 2010 (when they prepared the reorganization), and that year alone comprised 10 observations at events (such as the reorganization kickoff meeting and core team workshops) and six interviews. The researchers collected data throughout the whole time, from early discussions through interviews within the organizations, to observations during the implementation in 2011, and the results of the implementation until 2013.

### **3.3 Data Analysis**

Regarding the analysis of the collected data, the foundational literature was combined with the data from the cases to continue theory elaboration, beginning with the conceptual framework in Figure 1. The data was coded based on the conceptual framework (under the main coding nodes external and internal factors, PSO dimensions, purchasing performance and moderators) plus open coding. The results were tabulated and then discussed within the author team to interpret the findings. This was done in multiple iterations among the authors and consisted of additional group sessions to challenge individual interpretations. This, for example, led to the identification of purchasing maturity as a moderator in the resulting propositions, versus being an internal contingency factor. Jointly contrasting the two cases to each other led to the conclusion that this could be summarized fruitfully within a matrix that combines Rozemeijer et al.'s (2003) purchasing coherence and Schiele's (2007) maturity levels (see Figure 5). These had been part of the ex-ante coding tree as coding nodes, but only lent themselves for synthesizing the findings conceptually along these two axes after joint reflection on the case results.

## **4 CASE RESULTS**

### **4.1 Brief Company Descriptions**

Case company 1 “BAK” (anonymized) is one of the largest bakery operators in Northern Europe. It is the leading bakery company in Finland and the Baltic region. The Group is also the largest thin crisp and the second-largest crisp bread producer in the world, and a leading Nordic operator in bakery products. As of 2009, the Group's net sales were approximately EUR 400 million, while in 2013 it had risen above that. The Group employs approx. 3,000 people in Finland, Estonia, Latvia, Lithuania, Sweden, Norway, and Denmark. The group was formed through a number of mergers and acquisitions, and nowadays has more than 20 production units, most of them in Finland and the Baltic countries. January 2015, the company itself was acquired by a larger third party operating in the same business.

Case company 2 “CHEM” (anonymized) is a major chemical and pharmaceutical company worldwide, with more than 50,000 employees. The headquarters are in Germany. Its major spend countries are primarily Germany, the United States, and China; twelve more countries count as second tier spend countries, such as, for example Italy, France and Canada.

### **4.2 Industry Specific External Contingencies Found and Their Implications for the Purchasing and Supply Organization (PSO)**

The major external contingencies for both companies will now be discussed (further details are shown in appendix C). For BAK, three major industry considerations leading to changes in 2010 included: increased environmental complexity by increasing bargaining power of the retail customers, high environmental complexity due to the nature of “living spec” raw materials, and related supply risk. Increased environmental dynamics were caused by high volatility of both prices and availability of agricultural raw materials.

Concerning environmental complexity, the bakery industry has undergone major consolidation in the Nordic countries. Nowadays, most bakery products are not delivered

through traditional small bakery shops, but supermarkets. In order to cope with the increasing bargaining power and service requirements of the dominant retailers, bakeries have had to realign their targets related to operational efficiency and the product offering as they are managing a wider product offering at a competitive price. Furthermore, due to the nature of agricultural, “living spec” raw materials, suppliers are very often “designed in” in the recipe of a bakery product. There is even variance in quality between different raw material batches from the same supplier, and the differences between similar raw materials from different suppliers can be even larger. In order to compensate these differences, adjustments in production processes are necessary, so it becomes very laborious and expensive to change sources of supply in the short run. As a result, many commodities are practically single sourced items. Ways to address this are developing parallel “back-up” recipes and process settings, as well as extending proactive supplier approvals, which requires deep cooperation between the PSM and the R&D and production operations.

Concerning environmental dynamics, depending on the yearly yield, political risks and speculation on the market, the price changes of key raw materials can vary considerably. For example, in 2010, the price of wheat had almost doubled compared to the previous year. Regarding some materials, like sugar, temporary availability issues had occurred. Operating in this field therefore requires some very specific competences like global raw materials market research and utilizing statistics, tools, and instruments for currency hedging and risk mitigation.

Being a major player with an established market position, CHEM did not face any particular market changes in 2010 other than usual demand fluctuations. An ongoing challenge regarding supply market complexity was that the pharmaceutical branch had to include suppliers upon product registration with government authorities, making it very difficult to change suppliers thereafter.

#### **4.3 Corporate Specific Internal Contingencies Found and Their Implications for the Purchasing and Supply Organization (PSO)**

The major internal contingencies will now be discussed (further details are shown in appendix D). As a preliminary observation, the external contingencies were more dominant in PSO change activities at BAK while the internal contingencies were more dominant at CHEM.

The main internal contingency factors that led to changes at BAK in 2010, based on the observations and interviews, were “corporate strategy” and “technology”. Prior to the first reorganization, the company was organized around autonomous business units. P&L responsible legal country units reported to a holding company type of headquarters. Financial reports were used to analyze business and decide on investments, but there was little other synergy utilized across the business units. Following a change in ownership, a new corporate strategy was put in place, emphasizing corporate growth without jeopardizing profitability. This was to be supported by moving from fully country-based legal entities and operations to product portfolio-based business lines supported by country marketing and sales offices. Their own product portfolio would be supplemented by traded products. Whereas the PSM function used to be very decentralized, serving separate country and production unit operations, it now enables leverage of corporate synergy, while still assuring service along the business unit as well as the geographical dimensions. Technological foundations had just been implemented briefly prior to that (e.g. harmonization of SAP systems across countries). The strategic importance and role of PSM was also emphasized by raising the Chief Procurement Officer’s (CPO) role from an all-round administrative function to the executive board of the company. Furthermore, in 2014 also the new position of Chief Supply Chain Officer (CSCO) was created. The CSCO hierarchically is a peer to the CPO and responsible for the local buying units at production sites.

As BAK’s CSCO emphasized:

“[In a] nutshell, we are bringing our footprint which covers from the production point of view four countries together so that there’s no separation anymore between different countries and businesses but we have a more kind of holistic harmonized group approach to how we want to operate.”

Emphasizing the new priorities BAK’s CPO stated:

“For us in the group sourcing, it’s the supplier relationship management that we are focusing [...] The supplier relationship management as a whole it’s one of those cornerstones [into which we are] investing our resources as we can. The second one is the, really to keep and develop the category management and strategic sourcing area... basic things... to create their efficiency and, excellence in that area. Then [...] in the food processing industry so we have responsibility topics. A hot topic for us so, the third one.”

Also, first experiences towards a more hybrid approach had been made by 2015, as BAK’s CSCO accounted:

“Yes we have had such a model, so actually we had had for example in Lithuania a guy who was, 50 per cent local and 50 per cent in the group organization and, currently, we have in Estonia a lady, who is basically 100 per cent in the group, but of course close to the local business as well. [Currently,] it’s more so that we have the group roles separately and then the local roles, clearly so that is the current model, but for sure there are many, let’s say, drivers that would [change this] in the future [...] If we have the competencies available locally then that can support the group as well.”

On the other hand, CHEM’s main internal contingencies were corporate strategy, procurement strategy, purchasing corporate coherence, and changed supplier management practices. The observations and the interview results highlighted the following main internal contingencies: in line with ambitious corporate profitability targets, top management had defined aggressive savings targets as a core organizational priority. In order to achieve such targets, they deemed it necessary that category expertise be strengthened, and procurement skills and competence be extended. As exemplified by CHEM’s Head of Performance Management:

“In the last two to three years, savings targets have become more ambitious, while the low hanging fruits have been taken [...] In spend areas in which we have hired people coming from that area of expertise, like in R&D sourcing, we are still able to achieve more [but the] traditional areas have seen many spend initiatives already [so it is] harder to find new savings.”

This not only suggested the need for a category based set-up, but in order to reach critical mass to be able to specialize. It therefore also pointed CHEM toward the necessity to bundle processes.

In terms of procurement strategy, their priorities centered on improving transparency and compliance, as well as efficient processes and clearly assigned activities. The importance of well-defined roles and responsibilities was highly emphasized. CHEM estimated, and later confirmed, that local PSM activities would be common across sites, which pointed out that process synergies were to be expected if the activities could be bundled across sites. This suggested a need for more activity focus in the model, in order to bundle a critical mass of activities and establish more clarity of roles, i.e. to increase standardization and formalization. As CHEM's Head of Procurement Germany emphasized:

“We face the issue that we have a lot of sites with a small number of procurement employees, who work very differently from each other in their daily work [...] But also on our larger sites basically every procurement employee does a wide range of tasks [...] How the processes [are] done can already vary at each individual site [as they often also have] different systems.”

And as mentioned by the Head of Procurement Germany during a later observation in 2010:

“The tasks and roles analysis of the sites shows that more than three quarters of procurement employees at the sites basically [perform] every role. They work all the time in a mix of strategic and operational. And a very little [share of] analytical tasks.”

Adding to this, they had low purchasing corporate coherence, since after a lot of acquisitions of other companies and their respective production locations during the last years, the PSM units had never been harmonized; instead, each remained at each site operating relatively autonomously. Due to this background CHEM's CPO stated:

“[...] I am not looking for evolution, but revolution [...] After all the M&A activities it's time we come to one common procurement model [to fully leverage] synergies.”

Concerning supplier management practices, another future priority identified was further improving supplier management and development, which was hindered by the scattered setup across sites, again emphasizing the need to bundle category knowhow, bundle processes and to centralize. As the Head of Category Technical Materials & Equipment emphasized:



“There are many opportunities to improve our ‘one face to the supplier’ [...] Right now we often have sites pursuing their own, very local suppliers, but what about regional suppliers [...] or developing such [regional suppliers] over time?”

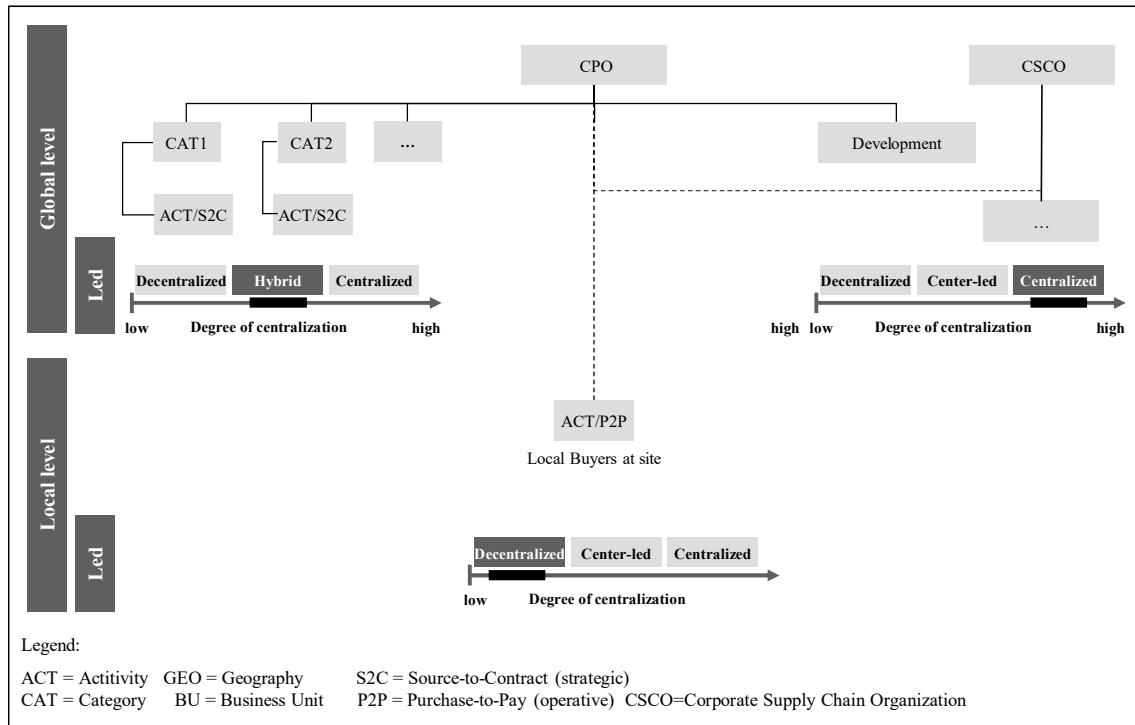
#### **4.4 Organizational Changes Performed**

The initial and resulting organizational characteristics for both cases will now be highlighted (more details can be found in appendices E and F).

At BAK, structural changes in macro-level organization implied a primary shift from a country and production centered approach toward a business line and category based structure. Whereas the former structure represents a main structural dimension towards geography, the first structural change in 2010 led to a clear matrix of customer (business unit) and category. On micro-level, some category responsibilities were then planned to be kept at the local level, working in matrix with global sourcing. This new organization operated virtually in a hybrid manner for issues yielding the highest potential in synergy, like supplier selection and contract/price negotiations. Call-off activities and some business dedicated tasks remained geographically decentralized. As all members of the PSO do also have a corporate-wide element of responsibility, however, they are actively striving for higher purchasing maturity and coherence despite geographical separation.

The organizational transition has been made step-wise from a business unit serving and geography based structure, to a category and activity based one in 2015. The previous main target of satisfying local production needs regarding materials availability was changed towards a broader total cost of ownership thinking, focusing on supplier selection, contract management, price negotiations, sustainability, and supplier base management. The resulting set-up is illustrated in Figure 2.

**Figure 2:** Organizational change at BAK in 2015 (only depicting set-up for Directs), Source: extracted from primary data

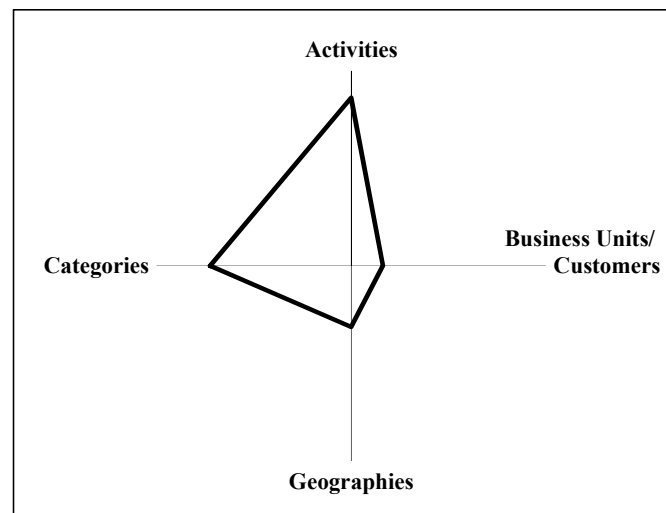


To illustrate how the micro-level characteristic “centralization” can now be specified more clearly, it is shown in Figure 2 on a global level and a local level respectively. For example, the operational processes (macro-level dimension activity) on the country level are performed decentralized. This mix of degrees of centralization per newly defined macro structures yields the organization an “overall hybrid” set-up (elements of hybrid and decentralization are combined, though in fact some elements remain fully decentralized). In contrast to such an “overall” generalization, however, how the degree of centralization is depicted in Figure 2 illustrates why this paper proposes the degree of centralization as a micro-level characteristic: it may be further differentiated for each sub department within the PSO, which is something that would be lost if just an “overall” level of centralization would be

reported. Additional process synergies are now sought through the harmonization of the P2P<sup>8</sup> processes and indirect sourcing.

In 2010, CHEM itself had analyzed which dimensions would be most suitable on the country level. Based on a scoring model, which organizational dimensions would fit to the company on the country level were evaluated. The result of the overall scoring for the macro dimensions is shown in Figure 3. This put the macro-level dimension activity into focus. In that dimension, PSM processes are the guiding dimension, e.g. to structure according to strategic vs. operational process clusters.

**Figure 3:** Scoring model results of four potential dimensions (Source: adapted from CHEM files)



As a result, CHEM chose activity and category as the main macro dimensions on the country level. On the global level, the organization was and remained organized by category (strategic sourcing), geography (countries), and activity (for performance management). At the

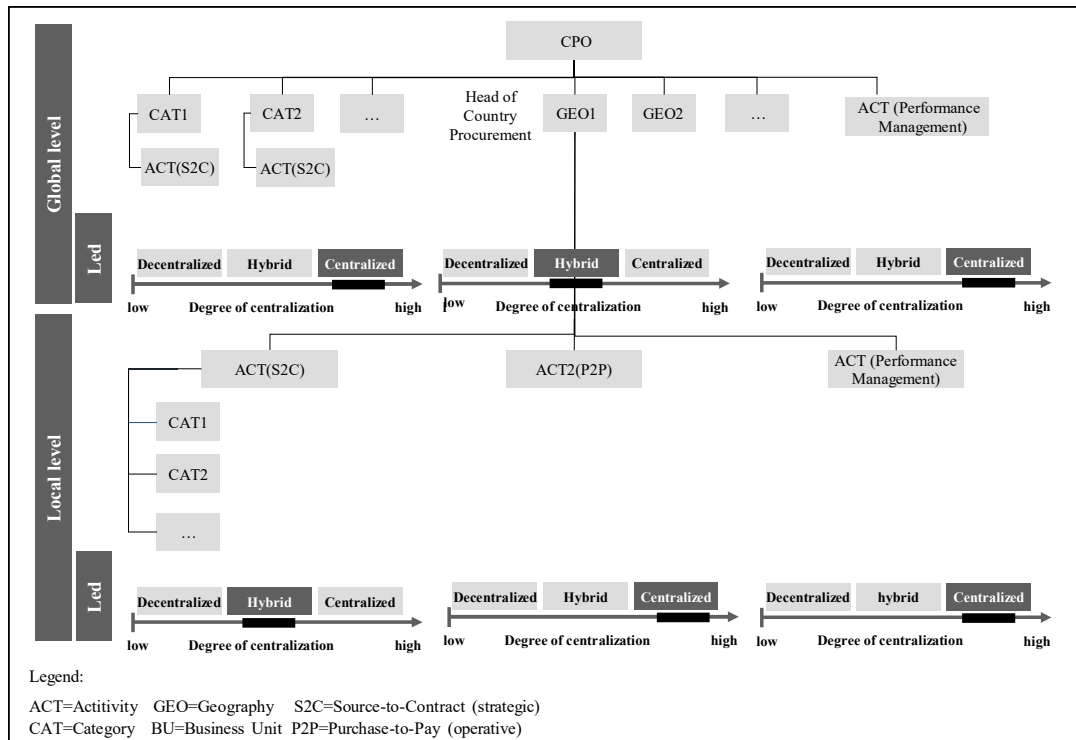
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<sup>8</sup> In more general terms, this comprises a differentiation of purchasing processes into more strategic and transactional ones, i.e. to differentiate between strategic tasks such as demand management and developing category strategies (Source to Contract, abbreviated “S2C” in the cases) and tactical tasks such as requisitioning, improving Procure to Pay processes, records maintenance (abbreviated “P2P” in the cases), which is also in line with the literature (e.g. Monczka et al., 2015).

headquarters, both before and after the local redesign, GCC had a global procurement management team. The global category heads, the country procurement heads, and global performance management head directly reported to the CPO and formed part of the global management team of the CPO to jointly take global level decisions.

Based on the results shown in Figure 3, the country organizational model changed from a macro geography-geography model, to a geography-activity model. In the initial state, the first geographic dimension was by country (e.g. Procurement Germany), and the second geographic dimension was by site (nine different site procurement organizations in Germany, serving individual production plants). In the new model, the geographic dimension country remains on the global level (each country head is part of the global procurement management team), but below, three activity based clusters are established. In the case of the activity-cluster “Sourcing” (strategic procurement activities; S2C), this is further sub-structured by category. The other activity-clusters “Purchasing” (operational procurement activities; P2P) and “Performance Management” (analytical procurement activities) were not further sub-structured, remaining on the activity level, as shown in Figure 4. The department “Performance Management” resembles a PSM center of excellence (with particular focus on analytical activities e.g. for spend and supplier risk analyses). As such, it is bundling the required competences and employee profiles for these processes and operates as a staff function, which supports the CPO as well as the other two activity clusters, which are line functions.

**Figure 4:** New model at CHEM – Local level re-structured by activity, Source: adapted from CHEM files



For CHEM, the micro-level characteristic centralization can be differentiated for all three activity clusters from the macro-level dimension activity into hybrid, centralized and centralized. In the new model in each country the strategic sourcing part is operated as centralized, but employees remain co-located and decentralized in the sites/business they support (hybrid); on the other hand, the transactional activities and the performance management activities are operated centrally. As a result, each category in the strategic sourcing structure has a head, who centrally leads a co-located workforce (hybrid), while purchasing and performance management only have one head each, who manage a centralized workforce.<sup>9</sup>

<sup>9</sup> The dotted lines between the global and local level for category and activity (performance management) signify that there is now a functional reporting line between the two levels, which did not exist before.

## 5 DISCUSSION OF RESULTS

### 5.1 Propositions Related to Structural Elements of the PSO

Both CHEM and BAK have restructured their PSOs by taking the macro-level dimension of activity. As PSO research has only highlighted three structural alternatives so far, i.e. by category, business unit, and geography (as summarized in section 2.1), this is particularly interesting to note for a comprehensive PSO model. Therefore, we propose:

***Proposition 1:*** *PSO structure macro-level dimensions category, business unit and geography need to be complemented with the dimension activity*

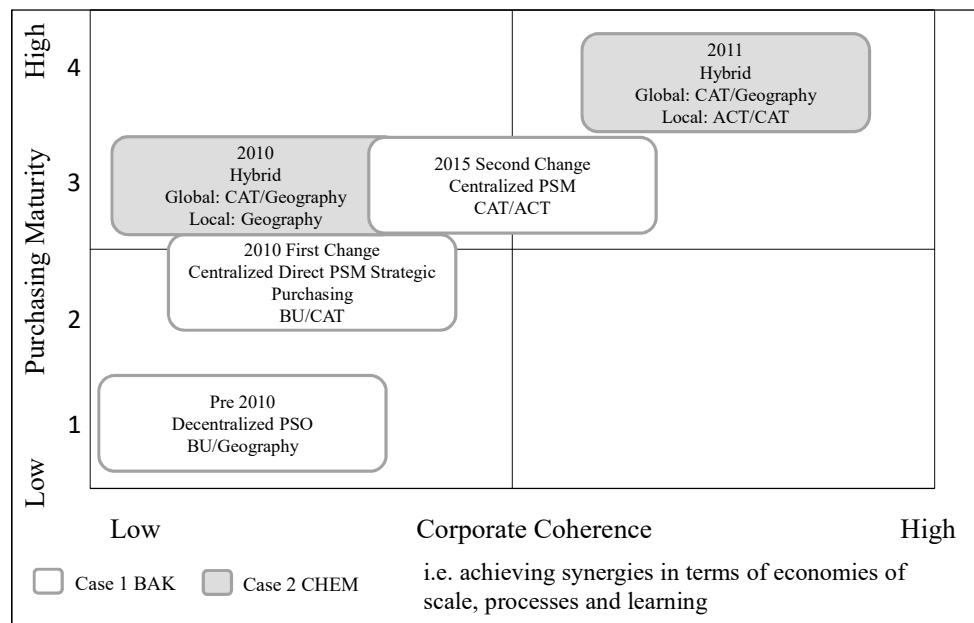
In order to improve the clarity of this paper, the differentiation of macro-level and micro-level PSO structures was introduced. We showed how at both BAK and CHEM they each chose a main and a substructure macro-level dimension and how their PSO structure looked across micro-level characteristics, with a particular focus on centralization. The other micro-level characteristics degree of formalization, specialization, participation/involvement, and standardization were also covered in the data collection and analysis. This enabled us to follow their PSO trajectory on both levels and observe changes on the macro-level and micro-level. For example, if CHEM had only been analyzed regarding the micro-level characteristic degree of centralization, it would have been a “hybrid” before and after. The macro-level shift from geography to activity and category on the country level would have gone completely unnoticed. Therefore, we propose:

***Proposition 2:*** *PSO structure needs to be further differentiated into macro-level dimensions and micro-level characteristics*

### 5.2 Propositions Related to Purchasing Maturity and Corporate Coherence

BAK’s and CHEM’s respective journeys along the axes of purchasing maturity and corporate coherence are shown in Figure 5. In both cases, the combination of a main dimension with a sub-structure macro-level dimension can be observed, which changed over time.

**Figure 5:** BAK and CHEM progressing along purchasing maturity and corporate coherence, source: analysis of primary data; grid adapted from: Rozemeijer et al., 2003, p. 11; maturity levels from Schiele, 2007



On reflection of the initial stages of purchasing maturity and corporate coherence, we observed that this varied in the two cases. BAK started with a model that was structured mostly around geography and its situation was characterized by low purchasing maturity (positioned as a stage 1 out of 4 according to Schiele (2007, p. 284) “Purchasing responsible people are named. Purchasing organization is insufficiently established”) and low purchasing corporate coherence, as hardly any synergies could be captured. Then it changed to a business unit and category based model for direct and increased purchasing maturity. Then it proceeded further towards category and increasing activity orientation, which fostered both purchasing maturity (towards a stage 3 out of 4 according to Schiele (2007) “Purchasing organization is established and is in charge of all procurement related activities. Procurement policy is described and communicated via internal circular letter as mandatory”, p. 284) and corporate coherence (as synergies across business units could increasingly be captured).

On the contrary, CHEM already set out on a relatively high level of purchasing maturity, around a stage 3. Then, through its changes in set-up from a geography based country model to an activity and category model, significantly improved its ability to connect the global with the local PSO, as well as fostering more cross-functional collaboration around strengthened category know-how. Thus CHEM moved forward in both maturity (now rather stage 4 out of 4 “Purchasing organization is continuously further developed based on business strategy, benchmarks, interviews or process reviews”, Schiele, 2007, p. 284) and corporate coherence.

Apart from spend synergies across BUs (Smart and Dudas, 2007), Rozemeijer et al. (2003, p. 7) originally suggested that other synergies also are possible: “different levels of corporate coherence would influence both the sort of synergies that will be pursued in the purchasing area and the means that are used to pursue it”. In the case of CHEM, BU synergies were pursued not only in terms of economies of scale, but economies of process and economies of learning (Trautmann et al., 2009a). Taking CHEM as an example, it had limited cross-BU spend, but did utilize pressure to make processes more efficient (capture economies of process) and increase category knowledge (capture economies of learning). Thus, by changing its setup it could harness these synergies and provide an illustrative example for how increased purchasing corporate coherence can be achieved by capturing other types of synergies (Rozemeijer et al., 2003) as well as an example for a structural means to do so.

Therefore, the two cases have highlighted how the capture of synergies (which defines the coherence term) can be operationalized beyond the usual capture of homogeneous spend across BUs. The new macro-level structures aligned with these objectives and thus increased purchasing corporate coherence. As a structural element in the framework, this internal contingency factor refers to the *required* coherence to capture such synergies. These synergies can be brought into relation with the macro-level dimensions. This is highlighted in Table 7.



**Table 7:** Connecting synergy opportunities to structural dimensions

Corporate coherence/ synergy opportunities in	Corresponding macro-level structural dimensions
Economies of Scale	Category
Economies of Process	Activity
Economies of Learning	Category/Business Unit/Geography/Activity

For example, if there is homogeneous internal demand across BUs that can be bundled, the dominant macro dimension for synergy capture would not be “business unit”<sup>10</sup>, but “category.” In the case that the highest synergies are expected in processes, then “activity” would be the most fitting structural dimension. Finally, if synergies mostly reside in economies of learning, then a dimension which enables this to be harnessed best under the given contingencies would fit. This could be done, for example, by sharing category management knowledge and experience along “category”, capitalizing on learning curve effects in tasks via “activity”, catering to very specific business unit needs and priorities via “business unit”, or specializing according to different markets via “geography”. Upon reflection of the two cases, the capture of process economies played a major part in both CHEM’s and BAK’s reasoning and is linked to the choice of “activity” as a main macro-level dimension. In CHEM’s case economies of learning (along the macro-level dimension “category”) were also explicitly part of what led to the macro-level choices. Therefore, we propose:

***Proposition 3:*** *Procurement coherence extends beyond a cross-BU-capture of economies of scale, to economies of processes and economies of learning*

***Proposition 3a:*** *Procurement coherence in terms of economies of scale is (particularly) facilitated if the PSO is organized by category on the macro-level*

***Proposition 3b:*** *Procurement coherence in terms of economies of process is (particularly) facilitated if the PSO is organized by activity on the macro-level*

***Proposition 3c:*** *Procurement coherence in terms of economies of learning is facilitated if the PSO is organized by category/business unit/geography/activity*

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<sup>10</sup> To ease readability, we have put the dimensions into quotation marks in that whole paragraph.

In addition, whereas BAK still sees itself on a journey towards more standardized processes and roles, at CHEM an organization which already had a certain level of maturity to begin with was observed (Figure 5). In that sense, CHEM had a very different starting point in comparison BAK, as their reorganization could be centrally administered and communicated right from the beginning, without first having to clarify PSM authority in general. This also resonates well with similar research findings that purchasing maturity influences the ability of PSM to introduce best practices (Schiele, 2007, p. 276). In line with our results, Schiele (2007, p. 281) suggested that “purchasing departments would learn more from their environment if they have a higher maturity.” Thus, we propose:

***Proposition 4:*** *The impact of contingency factors on the PSO structure is moderated by the level of maturity of the PSM function.*

## **6 CONCLUSIONS, MANAGERIAL AND RESEARCH IMPLICATIONS**

### **6.1 Conclusions on the Research Questions**

Although the two cases can be challenged regarding generalizability of results, they provided us with valuable data over multiple years in order to elaborate the contingency view on the PSO, addressing the overarching research question “How do external and internal contingency factors affect PSO structure?” Turning toward the first specific research question “How can PSO structure be comprehensively described?” this research built on existing research (e.g. Wood, 2005; Glock and Hochrein, 2011) featuring established organizational micro-level characteristics such as centralization, formalization, participation, standardization, and specialization (see Tables 2 and 3). The array of organizational options was shown in Figure 1 and extended to include the macro-level dimensions (Table 1). The macro-level dimension activity was added to the previously researched array of organizing PSOs along category, business unit, and/or geography, as identified in both cases CHEM and BAK (proposition 1). We consider it worth mentioning that CHEM had become aware of this fourth alternative by

benchmarking with other companies and reviewing the earlier-mentioned practitioner-oriented studies by the Procurement Strategy Council (PSC) (2009, 2013). As mentioned earlier, the advent of such an organizational form for the PSO has been expected for some time from an academic perspective (Trent, 2004), but was not deliberately defined and/ or confirmed until recently in this paper as well as in Bals and Turkulainen (2017)

For studying PSOs, the four structural dimensions on the macro-level are required *in addition to* the traditional micro-level characteristics (proposition 2). Making it explicitly known which contingency factors are studied, as well as having a common way of describing PSOs, could, over time, remedy the issue of inconsistencies of findings in earlier studies. This is because these inconsistencies may be attributed to the contingency settings of the companies studied, as well as from not fully capturing their macro and micro organizational structure in their manifold combinations.

Moreover, this study provides a terminology (macro-level versus micro-level in PSOs) and framework for what was mentioned earlier as an observation in IPO research that “centralization/decentralization of a purchase structure obviously depends on how the responsibilities are divided along the levels introduced *above* [emphasis added]” (Jia et al., 2014, p. 290). In the introduced terminology, this would read: The micro-level characteristics of a PSO (such as degree of centralization) depend on the macro-level dimensions chosen.

Turning toward the second research question “How do contingency factors influence evolution of the PSO?” we argued, based on the contingency view, that both external and internal contingency factors do lead to changes within the PSO. The literature review summarized these factors for the comprehensive framework (Figure 1). The cases BAK and CHEM served to illustrate why changes occurred as summarized in Figure 5, addressing Glock and Hochrein’s (2011, p. 173) call for more research on contingency relationships. Procurement coherence was discussed as a central concept for understanding such contingencies and its

definition was extended to go beyond cross-BU-capture of economies of scale to also include economies of processes and learning (proposition 3). Depending on which synergies dominated, we proposed that different macro-level dimensions facilitate their capture (propositions 3a-c). The concept of corporate coherence ties together macro-level structures and synergies to be captured around the contingency thought that there needs to be *coherence*. The clear differentiation between the more traditional micro-level characteristics, such as centralization and the macro-level structural dimensions chosen (i.e. category, business unit, geography or activity), allows studying this coherence. Finally, purchasing maturity was discussed as an important moderator of the contingency relationships (proposition 4).

While advancing contingency theory within PSM literature, these insights on procurement coherence and maturity can moreover be leveraged in future studies in the fields of hybrid procurement organizations and global sourcing organizations, as well as IPOs. For contingency theory in general, this research suggests a more prominent role for corporate coherence for conceptualizations of strategy and structure “fit”, and reemphasizes the moderation effects of organizational maturity.

## **6.2 Managerial Implications**

Managerially, the comprehensive framework can serve to guide reorganization decisions about which external and internal contingencies can be taken into account and how structural options in the PSO can be described. It may help move such decisions beyond a mere discussion of centralization versus decentralization, and beyond being driven just by benchmarking trends in one’s own industry. Rather, with the external and internal contingencies clearly spelled out, changes in strategy and/or competitive landscape could directly be scrutinized to take a conscious decision on how the PSO should evolve. The direction of that evolution would be the structural option that allows to capture most synergies in light of

procurement coherence and maturity, i.e. via specific combinations of certain macro-level dimensions and micro-level characteristics.

Purchasing maturity itself could also be taken into account more deliberately, when planning the evolutionary trajectory of the PSO. Depending on the purchasing maturity, it might be necessary to move in intermediate steps of organizational developments, as was illustrated by the case BAK. This also implies that reorganization projects could more carefully take purchasing maturity into account, when planning the duration, budget and timing of PSO reorganization projects.

Clarity on the reasons for and envisioned path of PSO evolution could also help mitigate sudden changes based on rather arbitrary considerations. Some adaptations to a trajectory plan might be necessary when fundamental external or internal contingency variables change (e.g. some supply markets breaking down, or on the contrary others growing more than expected). But a mere change in CPO, for example, would not be a rationally justified reason to change the PSO trajectory. As business press examples as well as Johnson and Leenders (2001) suggest, it appears that CPO changes can induce PSO adaptations, as he/she may strive to implement the organizational model best known to him/her from previous assignments. This appears to be a dysfunctional contingency factor in comparison to the factors included in our model, as it does not strive for “fit” of the organization to the external and internal environment, but rather to a single person’s mental model. Similarly, consulting firms may act as proponents of certain organizational models for their clients, based on their expertise with particular models. A current example of that is Accenture, who promotes an activity based model split into front, middle and back office processes (Accenture, 2013) and at the same time offers the respective outsourcing capacities for parts of that model. That link between rather modular process clusters in an activity based organization and outsourcing is also one to further consider for managers (Bals and Turkulainen, 2017).

### **6.3 Research Implications**

Methodologically, as large-scale surveys probably will not allow for full in-depth insights into such dynamics, future research could replicate and extend our case study approach to other industries and company sizes, and/or adopt complementary processual analyses (Tchokogué et al., 2011; Mugurusi and Bals, 2016). This especially pertains to fully applying the comprehensive framework and going into more detail on the multitude of contingency relationships it entails. This would help further develop the basis for larger scale, quantitative research.

Based on a more comprehensive framework (Figure 1 and the propositions developed in this research), we would like to reiterate Glock and Hochrein's (2011, p. 173) suggestion that future research should "1) Analyze inconsistent results between contextual variables and the structure of the purchasing function". For example, the latest publication of the longitudinal CAPS studies (Johnson et al., 2014) showed that more profitable companies move their PSO towards a greater degree of decentralization, which was understood to be a potential result of top executives favoring non-supply opportunities. With our proposed framework, this could be reanalyzed and an alternative explanation is that these companies might just go for other synergies, such as economies of learning (in specific markets), and therefore structure themselves according to geography on the macro-level and co-locate purchasing employees there in a hybrid or decentralized mode on micro-level.

Concerning corporate coherence, future research questions include whether such coherence is moderated by firm size and/or by maturity. Regarding the former, it could be studied whether a certain size is needed to reach economies of scale, whereas economies of learning might already be attainable by smaller companies. Regarding the latter, it could be studied whether economies of scale are the more basic synergies PSM aims versus economies of learning being the more advanced synergies.

How the activity dimension is combined with others in practice and how it might affect other aspects of the PSO also warrants further research. One very recently suggested implication of the activity based PSO is that it can facilitate outsourcing (Bals and Turkulainen, 2017).

More specifically for global sourcing, as well as for IPO research, the question of how global and local levels of PSOs might interplay in order to promote (or hinder) integration and coordination is raised. Future research should also address whether category based organizations might actually more easily foster cross-functional (global sourcing) collaboration because of more similar expertise than if the other dimensions are chosen, leading to better performance outcomes related to such joined initiatives.

Turning toward the moderators, more research is needed on how to compensate for scarce resources (e.g. financial resources, number of employees in purchasing, IT-tools, and reporting systems). Moreover, when interpreting size measures (e.g. sales volumes, or number of employees) it should be kept in mind which industries are studied and how their respective purchasing portfolios vary. For example, when interpreting the mainly services dominated portfolio of an IT consulting company versus the raw material and component dominated portfolio of an original equipment manufacturer. Both case studies presented here were manufacturing-oriented. How contingency relationships unfold in service settings, as manufacturing and service environments each have unique challenges to structure (Tate and Ellram, 2012), remains to be explored. For example, Iravani et al. (2005) suggest that the nature of service operations dictate organizations to adopt customer-centered structures that allow for flexibility within and across functions. Johnson et al. (2002) had found that service firms are more often centralized than manufacturing companies are.

Finally, other moderators to be further analyzed are specific actors/actor groups, such as the CEO and his/her structural preferences and consultants, which have both been previously put forward as moderators of the PSO by Johnson and Leenders (2001). While these did not

play important roles in the cases analyzed here, they might be interesting for further study in terms of dysfunctional contingency factors, as was highlighted in the managerial implications.

Turning toward future research opportunities on the performance effects of different PSOs, the varying results of performance findings in previous studies (e.g. Arnold, 1999; Laios and Xideas, 1994; Wood, 2005) may actually be attributed to the contingency settings of the companies studied, highlighting how important finding a comprehensive framework of the PSO is. In future research, studying samples of PSM functions that are particularly successful and unsuccessful and analyzing their external/internal contingencies in relation to their PSOs in terms of macro-level and micro-level combinations could yield valuable results. Following contingency theory, those that achieve a “fit” of the contingencies and their structure would be hypothesized to be the most successful. Also, purchasing maturity was discussed as a means to improve PSM’s ability to learn and therefore follows the general logic that the higher the maturity, the better the expected performance. In line with Schiele’s (2007) suggestion that organizations need to pass a certain threshold of maturity in order to implement best practices, sampling for more cases with varying levels of purchasing maturity is suggested for future research.

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**APPENDIX A:** How issues of reliability and validity in the paper were addressed, adapted from:  
Venkatesh et al., 2013, p. 13.

Assessment Features		Definition	Implementation in paper
Design validity	Descriptive validity/ Credibility	Accuracy of what is reported	Multiple sources of evidence were used throughout the research process
	Transferability	Results are generalizable	Developed propositions: the research identifies specific contributions to theory
Analytical validity	Theoretical validity/ Plausibility	Theoretical explanations fit the data	Grounded research constructs in literature; research questions were the basis for data analysis
	Dependability/ Consistency	Role of context in the study and Verification of research process	Maintained a chain of evidence (e.g. figures and tables) and described the cases in rich detail
Inferential validity	Interpretive validity	Research results are consistent with thoughts of participants	Informants provided with feedback and requested to review results
	Confirmability	The results are confirmed and corroborated by others	The first and second draft versions of the paper were presented at 2 conferences with peer-review scrutiny

**APPENDIX B:** Full Interview Protocol

**Interviewee background and current PSO structure**

1. Which is your position within the current set-up? What is your educational and professional background? How many years have you been with the company and in this position?
2. What is your overall satisfaction with today's organizational set-up? And why?
  - a. More specifically, regarding the interplay Global and Site Procurement?
  - b. More specifically, regarding the interplay across Site Procurement in your country?
  - c. More specifically, regarding the site Procurement at site?
3. Where do you see Procurement's:
  - a. Main strengths?
  - b. Main weaknesses?

**Contingencies for future PSO structure (understanding potential synergies in terms of economies of scale, process and learning)**

4. What are your major expectations towards the reorganization?
5. What are the limitations / restrictions of the reorganization? Are there "non-negotiables"?
6. What are your top 3 priority goals today, and which will become such in the future (ca. 3 years from now)? (E.g. efficient processes & clearly assigned activities, roles & responsibilities; supplier management & development; early involvement & business aligned supply strategies; category strategy development; spend transparency & compliance; better serve local needs; internal performance management; procurement skills & competence; supply security)
7. Does the current structure support the alignment with geographically dispersed sites?
8. Does the current structure support your alignment with business units?
9. Does the current structure support great expertise in all spend categories?
10. Are activities split in an optimal way to maximize efficiency and effectiveness of the procurement function in the current structure?
11. Is it crucial to manage local suppliers on site?
12. Do you have minimal synergistic spend across sites?
13. Do you have minimal synergistic spend across business units?
14. Do business units strictly comply with procurement policies and procedures?
15. Do business units tend to collaborate well with each other?
16. Do you have to develop creative new category strategies as the low-hanging fruits are taken?
17. Did Top Management define aggressive savings targets as core organizational priority?
18. Do your critical spend items require a high degree of category expertise?
19. Are local buyers in charge of more than one sourcing category due to resource constraints?

20. Are strategic and tactical purchasing activities performed by the same employees due to resource constraints?
21. Are strategic and tactical purchasing activities common across sites?
22. Within a country, are suppliers approached by more than one procurement expert/do multiple contracts exist?
23. Would a separation of strategic and tactical activities leverage synergies?
24. Would a standardized strategic purchasing process with dedicated resources per process step leverage supply market knowledge/tool/data analysis expertise?
25. Would a standardized tactical purchasing process with dedicated resources per process step leverage process efficiency?

**Levels of future PSO centralization/formalization/specialization/participation/standardization**

26. Would the following activities be ideally performed centrally, center-led and co-located (hybrid) or locally/on-site from your view?
  - a. Procurement management / administration
  - b. Performance management
  - c. Purchase order processing
  - d. Supplier & market analysis
  - e. Sourcing & category management
27. Do information flows from the company's (global) sourcing unit to site procurement work well?
28. Do Information flows from site procurement to the company's (global) sourcing unit work well?
29. Does communication within countries across sites work well?
30. Does the procurement organization adhere to standardized templates (e.g. for market reports, category strategies)?
31. Does the company's (global) sourcing regularly provide updates to local procurement (e.g. for market reports, category strategies)?
32. Does local procurement share adjusted updates with Business Units (e.g. for market reports, category strategies)?
33. Does the category expert network within the procurement function work well?

**Purchasing maturity**

34. Does collaboration between local and global procurement functions work well?
35. Does collaboration between local procurement and business functions work well?
36. Does collaboration between local procurement across sites work well?
37. Does collaboration between procurement employees within one local site work well?
38. Is the organization strong in applying strategies, guidelines and processes?
39. Does the organization follow a structured talent development program?
40. Are employees of global and local procurement functions frequently exchanged (job rotations; career moves)?
41. Are employees of local procurement across sites frequently exchanged (job rotations; career moves)?
42. Are site procurement employees proactively addressing procurement transformation?
43. Do site procurement employees possess state of the art skills and competences to address future challenges?

**Technology**

44. Do global and local procurement functions utilize the same databases?
45. Do global and local procurement functions utilize the same tools?

**Additional open questions**

46. What would an ideal site procurement organization look like for you? Why?
47. Do you have any further suggestions for us?

**APPENDIX C: External contingencies for BAK and CHEM**

	<b>Case 1: BAK Finland (2010;2015)</b>	<b>Case 2: CHEM Germany (2010 -2013)</b>
Environmental complexity	Legacy of multiple country operations causing a fragmented logistics and supply market. Large retail customers dominate the business. A trend is growing in consumer behavior towards “fresh” bread offered by	The firm is a major player in the health care industry, facing high complexity in terms of number of customers and suppliers, markets, facilities and products

	shop-in-shop bakeries instead of centrally baked and packed bread.	
Environmental Dynamics	The supply market is prone to changes in terms of purchase price and availability. Shut downs/relocations of capacity and M&As are expected to continue	Demand fluctuates and M&A activities are common and regular. Pharmaceutical product registration requires inclusion of suppliers
Grey markup: main contingencies in respective case		

#### APPENDIX D: Internal contingencies for BAK and CHEM

	Case 1 BAK Finland (2010; 2015)	Case 2 CHEM Germany (2010-2013)
<b>Corporate and procurement strategy</b>	Corporate strategy prior to the take-over was country/ market based with little head office intervention. Due to the history, the procurement strategy has been mainly to satisfy the needs of the local production operations in terms of availability and quality.	The corporate strategy is margin-oriented, procurement strategy particularly facilitating the company's financial goals.
<b>Supplier management practices</b>	Not standardized, decentralized, aimed at fulfilling operations demand.	Not standardized, dependent on individual employees. Aspirational targets to change approach exist.
<b>Cross-functional integration</b>	Not standardized, decentralized, aimed at fulfilling operations demand.	Not standardized, dependent on individual employees.
<b>Procurement coherence</b>	Starting from low coherence level, the change from operations unit specific procurement to centralized model with category structure, the coherence is gradually increasing	As the current set-up is geography driven and every site has its own small purchasing team, coherence to the overall organization is limited.
<b>Technology</b>	Various systems in use, manual consolidation needed to create visibility to spend and KPIs. By 2015 these issues have mostly been solved.	There are various systems in use for purchase order processes and spend transparency relies on manual consolidation.
<b>Strategic Corporate Initiatives</b>	BAK had been growing through of a chain of M&As of local bakeries in the recent decades. In the end of the observation period, BAK became an object of being bought itself by a larger Swedish company.	A number of major acquisitions of brands and of whole companies have taken place, but the acquired PSOs at sites had been left untouched.
Grey markup: main contingencies in respective case		

#### APPENDIX E: Organizational set-up before respective reorganization

	Case 1 BAK Finland (2010; 2015)	Case 2 CHEM Germany (2010-2013)
<b>Size</b>	A few tens of procurement FTEs, no clear picture, mostly situated at production units	A few hundred procurement FTEs, thereof about 110 in German Site Procurement
<b>Maturity</b>	The organization in the process of early formation. The change from operational, unit level decentralized model towards centralized, category and business line based model is ongoing. The emphasis is on reaping the low hanging fruits such as logistics	Organization has been through a number of optimization initiatives; the approach to spend is still rather initiative-driven than steady-mode; operational targets are driven by “security of supply”
<b>Main macro dimensions</b>	Category + Business Unit	On global level: Category + Geography (country) On country level: Geography

<b>Substructure macro dimensions</b>	Geography	Below Category: Category (sub-categories) Below Geography (country): Geography (Site)
<b>Centralization</b>	Global procurement is centralized in the head office, but site specific activities are decentralized (call-offs, quality feedback)	While the global procurement organization is centralized in the headquarter, the country organizations operate in a mode where there is one country head of procurement and his/her management team consists of site procurement heads
<b>Formalization</b>	The organization is lacking in information transparency due to fragmented IT architecture	The degree of formalization of how information is channeled within the organization is low
<b>Specialization</b>	Site level activities like call-offs and reclaim-processes have now been separated from the global procurement tasks. Due to the small size of site organizations, further division of tasks proves to be difficult. Strategic procurement is separated from site activities	Due to the site set-up, the level of specialization at each site is low, sometimes only 2-3 employees covering all categories and strategic and operational tasks alike
<b>Participation</b>	Site procurement heads are members of the global procurement team	Country procurement heads are part of the global procurement team. Site procurement heads within a county report to country procurement head. The site procurement employees have very limited participation in the development of global sourcing strategies in the global procurement at headquarters
<b>Standardization</b>	The company is in the process of defining common sourcing strategy, process descriptions and instructions. The level of standardization is still low	The degree of how similar sourcing approaches have to be, how documents/analyses need to be structured etc. is low

## APPENDIX F: Organizational set-up after respective reorganization

	Case 1 BAK Finland (2010; 2015)	Case 2 CHEM Germany (2010-2013)
<b>Size</b>	15 FTEs in central procurement and not clearly known, small number of local call-off responsible at production sites. Due to large variation of site sizes, the number of people varies from one to few. No major reduction of personnel achieved, central team has grown with a few support members (e.g. controlling)	Stayed as-is. Goal was not to reduce number of FTE, but to reinvest into more value-adding activities
<b>Maturity</b>	Maturity gains have been achieved mostly in procurement of direct materials, by the use of improved visibility, IT and communication tools. Indirect procurement and call-off activities remain on lower level due to decentralized and geographically very dispersed network of business units. A new role of Chief Supply Chain Officer (CSCO) has been introduced in order to advance maturity by harmonizing processes in call-offs and site procurement	To further advance maturity was one of the goals of the reorganization, especially in terms of processes, as well as becoming better at supplier management and procurement skills and competence (see also Table 1)
<b>Main macro dimensions</b>	On global level: Category + Geography On local level: Geography	On global level: Category + Geography (country) On country level: Geography
<b>Substructure macro dimensions</b>	Below Category: Activity (Source to Contract Processes) Below Geography (local): Activity (Purchase to Pay Processes)	Below Category: Category (sub-categories) Below Geography (country): Activity, and below the activity cluster of “Sourcing” (S2C activities) sub-structured by Category
<b>Centralization</b>	Even more focus on a centralized structure for the procurement of direct materials. Indirect procurement and local procurement still handled in a decentralized way (local procurement). Plans to introduce more harmonized group procedures for local procurement in order to improve efficiency exist	Increased by definition of the new model chosen (see also bottom of Figure 4). To a maximum extent for “Purchasing” (P2P activities) and “Support” (analytical activities) and decided as center-led and co-located for “Sourcing” (S2C activities)
<b>Formalization</b>	Formalization well underway with direct procurement, supported by greatly improved IT system support, better visibility and reporting in place	With clear roles and responsibilities, also clearer communication channels, as well as unified tools and templates for (the now more standardized) processes were part of the model
<b>Specialization</b>	A small support team created to assist central procurement (controlling, quality)	For every cluster clear job roles were defined now and employees could only be allocated to ONE role (versus more than 60% having four or more roles)
<b>Participation</b>	Ceased to implement dual roles for local procurement members. Improved tools and processes/forums for inter- and intra-organizational communications created. Improved buy-in of procurement from business lines. Direct procurement ahead of indirect in development	With improved “Sourcing” (strategic activities) critical mass across sites, it was put on the agenda of the newly appointed Local Category Heads to become more actively involved with their stakeholders (e.g. site heads for budget discussions)
<b>Standardization</b>	Level of standardization in central/direct procurement has improved strongly. There remains a lot to be gained still from indirect procurement and local call-offs and materials management	In the activity-based model, also process descriptions were designed and the new organization was seized to implement a common six step sourcing approach across all countries