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Faculty of Behavioural, Management and Social Sciences

Chair of Technology Management and Supply

Prof. Dr. habil. Holger Schiele

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Topic: Strategic management at the level of purchase categories: A multiple case study to explore purchase category strategy development in practice

Submitted by: Stange, Raphael

Supervisors: Prof. Dr. habil. Holger Schiele

Prof. Dr. Jan Telgen

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Abstract

As a result of recent business practices like the core competence movement today´s purchasing organizations have to manage a growing diversity of organizational spend and corresponding supply markets. Therefore, more and more buying firms implement a category management function. The core idea behind the concept of category management is the possibility to implement differentiated strategies for diverse areas of organizational spend in order to achieve long term competitive advantage. Category managers derive purchase category strategies by applying the strategic management process. However, past literature has not yet successfully integrated the strategic management process at the hierarchical level of purchase categories. Consequently, category managers have no consistent guideline for the derivation of a purchase category strategy within their organization.

In order to close this research gap this master thesis analyses literature on strategic management and purchase category management and conducts six explorative case studies at Western European organizations. Thereby the study focuses on four main objectives. First, the paper integrates the strategic management process at the level of purchase categories to derive a four-stage category strategy development maturity profile. Next to this, the paper discusses strategy tools that support category managers in the strategy development process. Subsequently, the paper identifies four categories of performance benefits that result from purchase category strategy development. Finally, the master thesis links results from the case studies with literature to confirm, reinforce or add findings to the existing body of research.

All in all, the study provides several interesting findings. First, four strategic management process stages could be integrated into a purchase category strategy development maturity profile providing managers with guidance on how to increase their level of sophistication for strategy development. Thereby the maturity profile has been successfully validated during six case studies and several best practices of category strategy development could be identified like the use of formalized category strategy roadmaps. Moreover, several strategy tools from case studies could be linked to literature such as the purchasing portfolio analysis and stakeholder analysis. Conversely, new strategy tools could be added to the existing body of research such as GAP-analysis and market research questionnaires. Finally, several economic, operational, technological and interactional benefits of strategic management could be linked to literature and also new benefits could be added like increased sales performance and increased adherence to company policies.

Content

Index of figures

Index of tables

Index of abbreviations

FAI	First Article Inspection
LCE	Life Cycle Engineering
MG	Material Group
NPD	New product development
NRE	Non-recurring engineering
OEM	Original Equipment Manufacturer
PESTLE	Political, Economic, Sociological, Technological, Legal, Environmental
PPC	Purchasing price change
PPQ	Process Performance Qualification
RACI	Responsible, Accountable, Consulted and Informed
SWOT	Strength, Weaknesses, Opportunities, Threats
VRIN	Valuable, Rare, Inimitable, Non-substitutable

1. Introduction: Applying the strategic management process at purchase category level in order to achieve competitive advantage

Buying firms are increasingly adopting strategic management at the level of purchase categories in order to achieve sustainable competitive advantage through higher price savings, innovations and higher efficiencies[1]. One way to secure and measure these competitive advantages is the derivation of a purchase category strategy for key categories. The core idea behind the concept of purchase category management is the possibility to form differentiated strategies with respect to diverse supply markets which are aligned with organizational targets to achieve long term competitive advantage[2]. In order derive purchase category strategies category managers align firm level and functional level strategies at the level of purchase categories by applying the strategic management process[3]. However, past literature has not yet successfully integrated the strategic management process at the hierarchical level of purchase categories. Consequently, category managers have no consistent guideline for the derivation of a purchase category strategy within their organisation.

In recent years the body of literature on purchasing category strategy development has strongly increased, raising the need for empirical research in this area[4]. As a consequence, this master thesis analyses and combines literature on strategic management and purchase category management in order to come up with a category strategy development process that will be empirically tested in the form of a category strategy development maturity profile. Thereby this study concentrates on four main objectives. First, four stages of purchase category strategy development are described by integration of a strategic management process model at the level of purchase categories. Next to this, the paper introduces strategy tools that support managers in the strategy development process. Subsequently, the paper identifies four categories of performance benefits that result from purchase category strategy development. Finally, results from six qualitative interviews from different Western European industries are compared with purchase category management literature in order to confirm, reinforce or add findings to the existing body of research. Thus, this paper addresses three main research questions:

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[1] See Hesping and Schiele (2016a), p. 101, 2016b), p. 474.
[2] See Hesping and Schiele (2015), p. 145.
[3] See O'Brien (2015), pp. 81-83; Rendon (2005), pp. 9-10.
[4] See Hesping and Schiele (2015), p. 147.

RQ1: "*What process stages of strategic management should category managers consider in order to derive purchase category strategies?*

RQ2: "*What are strategy tools that are applicable in the purchase category strategy development process?*

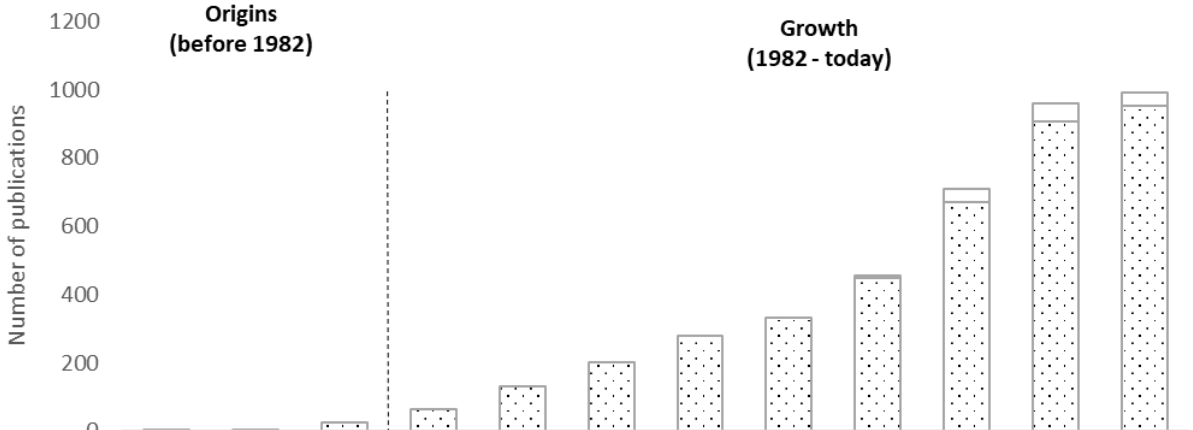
RQ3: "*What are the benefits of purchase category strategy development in an organization?*

In order to answer the research questions qualitative interviews with purchasing personnel from six Western European organisations were conducted, resulting in six case studies. For the qualitative interviews, a semi-structured questionnaire and a maturity profile were developed based on an extensive literature review on strategic management and purchase category management. The literature review builds the theoretical foundation of this paper and provides a picture of the current state of the art of strategic management, purchasing category strategy development and related other concepts. In the methodological section the questionnaire design, respondent characteristics and interview procedures are discussed. Afterwards an introduction of the different companies of observation will be provided. Then, findings from the interviews are outlined and summarized in six case studies. The paper proceeds with a comparison of cases. Afterwards findings are compared to findings from literature, confirming and adding factors to the existing body of research. Finally, the paper provides a conclusion, practical recommendation for managers and discusses research contributions, limitations as well as future research directions.

2. Strategic Management

2.1 The Foundations of strategic management: Research on strategic management is still in its growth phase but definitions of core concepts are available

An analysis of the state of the art of strategic management reveals that the research field is still in its growth phase. Since the 1980s there has been growing interest in strategic management due to its contribution to organizational performance and competitiveness[5]. Figure 1 shows the number of journal articles and books on strategic management published between 1970 and 2017 based on a structured keyword search conducted via Scopus. The key word search has used a query to screen the abstract, title and keywords for the words "*strategic management*" or "*strategisches management*". Furthermore, the query has been limited to the years 1970 until 2017, the subject area "Business, Management and Accounting", the source type "Articles" and "Books", and the language "English" and "German". In sum the search result has included 4164 publications. Figure 1 indicates that the origins of strategic management have been before 1982. After 1982 the research field has experienced rapid growth[6]. Whereas between 1982-1985 there were 64 publications in total, between 2014-2017 the number has increased to 991 publications. The year 2017 includes the number of publications year-to-date as of 31 October 2017.



	1970 - 1973	1974 - 1977	1978 - 1981	1982 - 1985	1986 - 1989	1990 - 1993	1994 - 1997	1998 - 2001	2002 - 2005	2006 - 2009	2010 - 2013	2014 - 2017*
Books	0	0	0	0	0	0	0	0	10	40	56	39
Articles	2	4	26	64	133	203	280	333	447	670	905	952

Figure 1 Number of publications on strategic management between 1970-2017 (N=4164)
Source: Based on Scopus

[5] See Asdemir, Fernando, and Tripathy (2013), p. 111; Luoma (2015), p. 1098; Miller and Cardinal (1994), p. 1662; Spanos, Zaralis, and Lioukas (2004), p. 159; Yeung, Selen, Sum, and Huo (2006), p. 226.
[6] Nerur, Rasheed, and Natarajan (2008), p. 320.

Since its origins the research field of strategic management has taken different research directions, different theories have been applied and researchers have reached growing consensus on fundamental concepts[7]. Among others, research has addressed external and internal views on macro-, meso- and micro-environments[8]. In addition, more than 72 different theories have been applied and tested within the discipline[9]. Frequently used theories in strategic management journals have been the resource based view, transaction cost economics, agency theory, institutional theory, upper echelon theory, resource dependency theory, contingency theory, social capital theory and stakeholder theory. While several researchers provide an in-depth discussion of these theories[10], this paper proceeds with an elaboration on the definitions of the core concepts of the research field: the definitions of (1) strategic management, (2) the strategic management process and (3) strategy.

Despite a growing consensus on the concept of *strategic management* there is a large variety of definitions available. Table 1 provides examples of selected definitions of strategic management. These examples show that definitions of strategic management focus on different aspects such as a long-term focus on goals and objectives, a focus on internal and external environments, a focus on strategy formulation or implementation and a focus on enhancing performance (operational) versus achieving sustainable competitive advantage (strategic)[11]. For instance, Nag et al. (2007) have developed an empirical and operational implicit definition of strategic management that concentrates on actions taken by general managers to increase the performance of a firm[12]. As this definition is rather operative the research at hand uses the more strategic definition of Dess (2014) who state that "*Strategic management consists of the analyses, decisions, and actions an organization undertakes in order to create and sustain competitive advantages*"[13].

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[7] See Furrer, Thomas, and Goussevskaia (2008), p. 3; Guerras-Martín, Madhok, and Montoro-Sánchez (2014), p. 71.

[8] See Herrmann (2005), pp. 111-113; Hoskisson, Wan, Yiu, and Hitt (1999), p. 421; McKiernan (2006), p. 9; Phelan, Ferreira, and Salvador (2002), pp. 1161-1164; Ramos-Rodríguez and Ruíz-Navarro (2004), p. 981; Thomas, Wilson, and Leeds (2013), p. 1121.

[9] See Kenworthy and Verbeke (2015), p. 180.

[10] See Baker (1990), p. 593; Carpenter, Geletkanycz, and Sanders (2004), p. 772; Donaldson and Preston (1995), p. 65; Eisenhardt (1989a), p. 59; Fama (1980), p. 289; Freeman (1994), p. 410; Grant (1996), p. 110; Hambrick and Mason (1984), p. 198; Jensen (2001), pp. 8-9; Jensen and Meckling (1976), p. 357; Mahoney and Pandian (1992), p. 364; March and Olsen (1983), p. 747; Medcof (2001), p. 1002; Nahapiet and Ghoshal (1998), p. 251; Peng, Sun, Pinkham, and Chen (2009), p. 63; Powell and Dent-Micallef (1997), p. 377; Shook, Adams, Ketchen Jr, and Craighead (2009), p. 4; Spender (1996), p. 48; Stuart and Podolny (1996), p. 23; Szulanski (1996), p. 28; Wernerfelt (1984), p. 171.

[11] See Chandler (1962), p. 6; Coulter (2012), p. 103; Harvey (1988), p. 6; Higgins and Vincze (1993), p. 5; Hunger and Wheelen (2010), p. 5; Nag, Hambrick, and Chen (2007), p. 942; Quinn (1980), p. 9.

[12] See Nag et al. (2007), p. 944.

[13] Dess, Lumpkin, and Eisner (2014), p. 7.

Definition of strategic management	Author
"The determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals."	Chandler (1962), p. 6
"Strategic management entails the analysis of internal and external environments of firms to maximize the utilization of resources in relation to objectives."	Bracker (1980), p. 221
"The field of strategic management deals with the major intended and emergent initiatives taken by general managers on behalf of owners, involving utilization of resources to enhance the performance of firms in their external environments."	Nag et al. (2007), p. 944
"Strategic management is the process of assessing the corporation and its environment in order to meet the long-term objectives of the organization."	Alkhafaji and Nelson (2013), p. 18
"Strategic management consists of the analyses, decisions, and actions an organization undertakes in order to create and sustain competitive advantages."	Dess et al. (2014), p. 7

Table 1 Different definitions of strategic management

The *strategic management process* is a series of process steps individuals need to consider in order manage strategies in their organization. The process originates in the work of Fayol (1949) who described six process steps that need to be considered in management: "*To manage is to forecast and to plan, to organize, to command, to coordinate and to control."* [14] Thereafter a number of similar process models have been developed that differ in the number of stages. For example, David and David (2016) developed a three-stage process model including the stages strategy formulation, implementation and evaluation and describe the strategic management process as a systematic process in order to make decisions in an organization[15]. Furthermore, Carr and Smeltzer (1997) state that the "[…] *strategic management process refers to the process of setting goals, establishing strategies, analyzing the environment, evaluating strategies, implementing and controlling strategies."*[16] In other words, the goal of strategic management processes is to provide individuals with a guideline for the analysis, formulation, implementation and evaluation of strategies in their organization[17]. Furthermore, the process is applied by managers at all organizational levels. The input to the process are environmental factors that affect an organizations overall performance. Conversely, the output of the process is a strategy that defines how the organization addresses environmental forces in order to achieve and maintain competitive advantage.

[14] Fayol (1949), p. 19.
[15] See David and David (2016), p. 40.
[16] Carr and Smeltzer (1997), p. 200.
[17] See Clark (1997), p. 420.

Mainardes et al. (2014) provide a literature review on 38 different definitions of *strategy* and conclude that the term has several meanings[18]. Every definition has its limitations and focuses on different aspects. For instance, the majority of definitions differs as some refer to goals and objectives, while others refer to tactics, programs or policies. This research concentrates on the definition of Zheng, Yang, and McLean (2010) who define strategy as a long-term plan that aims to maintain and enhance a firm's competitive performance in an uncertain environment[19]. A strategy not only describes the goals an organization wants to achieve but also specifies actions and resources needed to achieve these goals. Strategy depends upon the capability to anticipate future consequences of present activities. In other words, firms that are prepared to anticipate future environmental changes can secure their competitive performance. Many researchers have been investigating a positive relationship between strategic planning and firm performance[20]. For example, Luoma (2015) in their empirical study show that the application of hybrid strategies in an organization can lead to superior firm performance[21].

Strategy is a hierarchical concept which is inevitably linked to the hierarchy of structure and purpose. On the one hand, strategies are applied at different hierarchical levels of a firm: corporate level, business level, functional level and tactical level[22]. On the other hand, strategy is translated onto different levels of purpose: vision, mission, goals and objectives[23]. Strategic actions on both hierarchical elements differ in terms of explicitness and the time frame in which they are implemented. Empirical research has shown that strategic alignment between the different hierarchical levels of an organization contributes to the overall organizational performance[24]. Strategic alignment can be achieved through linking organizational strategies across the different hierarchies of the organization. Figure 2 is an illustration of the hierarchy of structure within organizations. The research at hand concentrates on managing strategies at the hierarchical level of purchase categories. The next section will introduce a strategic management process model, which in the subsequent chapter will be integrated at the level of purchase categories in form of a maturity profile.

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[18] See Mainardes, Ferreira, and Raposo (2014), p. 46.

[19] See Bracker (1980), p. 220; Casadesus-Masanell and Ricart (2010), p. 203; Prahalad and Hamel (1994), p. 10; Zheng, Yang, and McLean (2010), p. 765.

[20] See Asdemir et al. (2013), p. 111; Luoma (2015), p. 1098; Vorhies, Morgan, and Autry (2009), p. 1326.

[21] See Luoma (2015), p. 1083.

[22] See González-Benito (2007), p. 905; Whittington (2006), p. 619.

[23] See Johnson, Scholes, and Whittington (2010), p. 8.

[24] See Baier, Hartmann, and Moser (2008), p. 46.

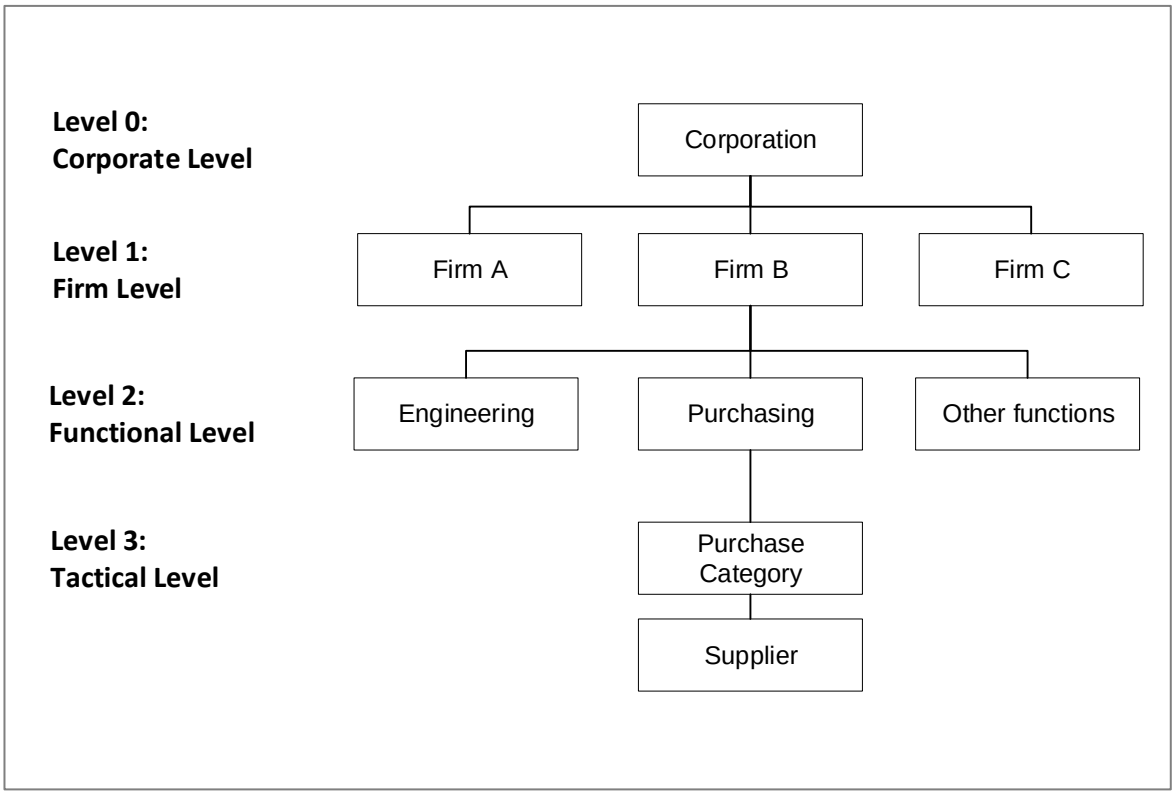

Figure 2 The hierarchy of strategies in purchasing
Source: Based on Hesping and Schiele (2015)[25]

2.2 The Strategic Management Process: Introducing a four-stage strategy development framework for application at purchase category level

Strategic management process models have been widely adopted in strategic management literature to support practitioners in the strategy development process[26]. To be more precise, process models support managers to plan, organize, implement and control the goals and objectives of their organization. Every process model includes three components (1) input, (2) process and (3) output[27]. Environmental variables are an input-factor to the process whereas a strategy itself is an output of the process. On the one hand, the above definition based on contingency theory assumes that a firm's strategy is contingent upon its environment[28]. On the other hand, based on the planning school it assumes that firms are able to anticipate environmental changes and adapt their strategy in order to enhance their future competitive performance within their ecosystem.[29]

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[25] See Hesping and Schiele (2015), p. 139.
[26] See Chakravarthy (1982), p. 43; Hill, Jones, and Schilling (2014), p. 13; Rothaermel (2012), p. 20.
[27] See Ginsberg and Venkatraman (1985), p. 423.
[28] See Pennings (1975), p. 394; Spina, Caniato, Luzzini, and Ronchi (2016), p. 22.
[29] See Ben-Menahem, Kwee, Volberda, and Van Den Bosch (2013), p. 220.

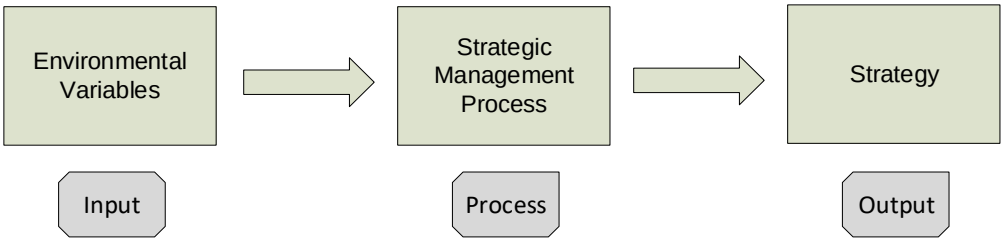

Figure 3 Contingency theory-based strategic management process based on
Source: Own elaboration based on Ginsberg and Venkatraman (1985)[30]

The present master thesis conducted an analysis of eleven strategic management process models from academic literature and integrated them into a four-dimensional process model of strategic management. The process models included in the analysis have been derived from strategic management books and academic journals published between 1973 and 2016. The models mainly differed in the number of process stages and the degree of detail, explicitness and complexity. For the purpose of this study the eleven models have been integrated into a more comprehensive process model for strategy development with four stages: (1) *strategy planning*; (2) *strategy organisation*; (3) *strategy implementation* and (4) *strategy controlling*. Table 2 provides a detailed overview which stages from the model presented in this paper have been addressed by the eleven process models from the analysis.

	Cohen and Cyert (1973)	Clark (1997)	Thompson and Martin (2010)	Coulter (2012)	Hitt et al. (2012)	Rothaermel (2012)	Wheelen and Hunger (2012)	Alkhafaji and Nelson (2013)	Dess et al. (2014)	Hill et al. (2014)	David and David (2016)	Model presented in this paper
Scope	Strategic management											
No. of stages	*9*	*3*	*4*	*4*	*2*	*5*	*4*	*4*	*3*	*2*	*3*	*4*
Stages addressed												
Strategy Planning		*x*	*x*	*x*		*x*	*x*	*x*	*x*			*x*
Strategy Organization	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*
Strategy Implementation	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*	*x*
Strategy Evaluation	*x*		*x*	*x*			*x*	*x*			*x*	*x*

Table 2 A comparison of eleven strategic management process models[31]

[30] See Ginsberg and Venkatraman (1985), p. 424.

[31] See Alkhafaji and Nelson (2013), p. 7; Clark (1997), p. 420; Cohen and Cyert (1973), p. 349; Coulter (2012), p. 103; David and David (2016), p. 47; Dess et al. (2014), p. 12; Hill et al. (2014), p. 13; Hitt, Ireland, and

There have been major similarities between the different process models. The majority of models reviewed have been described as formal, continuous, on-going and dynamic feedback processes that have neither a beginning nor an end[32]. On the one hand, these models guide managers to continuously evaluate the performance of their existing strategy against environmental changes. This in turn allows managers to take corrective actions in case of deviations. On the other hand, managers can define alternative courses of action in case of anticipated environmental changes. Furthermore, the majority of models have been categorized as descriptive, prescriptive or explanatory[33]. Thus, they allow managers to make objective decisions, evaluate alternative courses of actions based on a set of certain guidelines and apply rational decision-making. In other words, these models represent a useful guideline for managers develop a strategy that can lead to competitive advantage within their firms' environment. The paper proceeds with an elaboration on every process stage.

Strategic planning involves the analysis of an organizations environment to assess whether environmental factors have an impact on performance and the company can continue with the given course of actions. The majority of authors agree that environmental analysis involves an analysis of the external, competitive and internal environment of an organization[34]. The external environment of a company includes the macro- and meso-level. The former considers political, economic, social, technological, environmental and legal forces[35]. The latter addresses stakeholders in the direct environment of a firm including competitors, suppliers, retailers and customers[36]. The internal environment of a company includes the micro-environment which addresses among others internal strategies, structures, processes, resources and strategic capabilities[37]. Strategic planning is a crucial step as it reveals whether a company can maintain its strategic activities or needs to adapt its strategy. Only companies with a high level of maturity and absorptive capacity are assumed to generate competitive advantage from strategic planning activities[38]. Absorptive capacity can be defined as *"[…] the firm's ability to identify, assimilate, and exploit knowledge from the environment*"[39].

Hoskisson (2012), p. 5; Rothaermel (2012), p. 20; Thompson and Martin (2010), p. 36; Wheelen and Hunger (2012), p. 15.

[32] See Cohen and Cyert (1973), pp. 349-350; Theriou (2015), p. 14.

[33] See Furrer et al. (2008), p. 4.

[34] See Dess et al. (2014), p. 36.

[35] See Cohen and Cyert (1973), p. 353; Jarzabkowski and Paul Spee (2009), p. 73.

[36] See Jarzabkowski and Paul Spee (2009), p. 73.

[37] See David and David (2016), p. 191; Dess et al. (2014), p. 82.

[38] See Lane, Koka, and Pathak (2006), p. 833; Lewin, Massini, and Peeters (2011), p. 82; Schiele (2007), p. 281

[39] Cohen and Levinthal (1989), p. 569.

Strategy organisation can be described as the conception and alignment of a strategic plan. Strategy conception can be top down in form of intended strategies or bottom up in the form of emergent strategies[40]. On the one hand, strategy organisation includes the definition of the desired future state. Based on environmental changes and the current performance the company may decide to reformulate its strategy in terms of its policies, vision, mission, targets and objectives[41]. On the other hand, strategy organization includes the definition of strategic activities to achieve the desired future state. Strategic activities for example address in detail how resources, structures and processes need to be aligned in order to achieve the desired future state[42]. Strategy organization is applied at all hierarchical organizational levels including the corporate, functional or tactical level. The result of strategy organisation is a detailed plan that specifies the goals and objectives as well as strategic actions that need to be carried out in the strategy implementation process stage to reach those goals.

Strategy implementation regards the implementation and execution of the strategic plan developed in the former phases of the strategic management process. Strategy implementation is often described as the most challenging process stage and researchers do not commonly agree on the activities that need to be considered in this stage[43]. For example, David and David (2016) state that strategy implementation involves "[…] *developing a strategy-supportive culture, creating an effective organizational structure, redirecting marketing efforts, preparing budgets, developing and using information systems, and linking employee compensation to organizational performance*."[44] In contrast Dess et al. (2014) provide a much broader definition with a focus on organizational design, strategic controls and leadership[45]. Nevertheless, the majority of authors agree that strategy implementation concerns the activities strategy communication, structural alignment and resource alignment to achieve the desired future state and to maintain and improve the competitive performance of the company[46]. In order to ensure the successful implementation of strategies, controlling and monitoring procedures can be implemented during the whole process.

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[40] See Alkhafaji and Nelson (2013), p. 19; Mintzberg and Waters (1985), p. 258.
[41] See Cohen and Cyert (1973), p. 355; Dess et al. (2014), p. 285.
[42] See Alkhafaji and Nelson (2013), p. 33.
[43] See Alkhafaji and Nelson (2013), p. 104.
[44] David and David (2016), p. 40.
[45] See Dess et al. (2014), p. 13.
[46] See Alkhafaji and Nelson (2013), p. 33; Cohen and Cyert (1973), p. 363.

Strategy controlling requires the comparison of the predicted results from the strategy plan with the actual results. Strategy controlling is concerned with the implementation of control mechanisms, performance reviewing and taking corrective actions[47]. Control mechanisms are means to control the operation of strategic activities[48]. Next to this, performance reviewing is related to monitoring of performance results of strategic activities. Performance monitoring allows an assessment on whether the desired future state has been achieved or not. In the event that control mechanisms and performance reviews indicate deviations from the strategy plan the final step is the definition and implementation of corrective actions in order to ensure that the desired future state will be achieved.

For all process stages described above literature has developed strategy tools that provide practitioners support for decision-making during all stages of the strategic management process. The next section elaborates on strategy-as-practice research, the overall definition and function of strategy tools as well as the dyadic dissociation process used to integrate knowledge from theories into frameworks.

2.3 Strategy tools in strategic management: Integrating knowledge from theories into models, frameworks or methods

The use of strategy tools has gained a lot of attention recently both in practice and in academics. Researchers and consultants have developed a large portfolio of strategy tools that are applied in today's organizations and business schools. The rising attention is for example confirmed by the multiyear Bain & Company survey developed to collect data about the usage of management tools which included more than 7,000 responses in 2005[49]. Frequently cited examples of strategy tools in theory and practice are Five Forces, VRIN or the balanced score card[50]. Research on strategy tools has been integrated into a separate research agenda called strategy-as-practice-research[51]. This research agenda discusses perspectives on the practical adoption of strategy and strategy tools including a diverse set of studies on strategy tool usage in practice and the impact of the adoption strategy tools on performance[52].

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[47] See Cohen and Cyert (1973), p. 364.

[48] See Alkhafaji and Nelson (2013), p. 33.

[49] See Rigby and Bilodeau (2005), p. 4.

[50] See Barney (1991), p. 112; Kaplan and Norton (1992), p. 67; Porter (1980), p. 4.

[51] See Berisha Qehaja, Kutllovci, and Shiroka Pula (2017), p. 89; Jarzabkowski, Balogun, and Seidl (2007), p. 5; Knott (2006), p. 1090; Moisander and Stenfors (2009), p. 227; Vaara and Whittington (2012), p. 285.

[52] See Aldehayyat and Anchor (2008), p. 281; Gunn and Williams (2007), p. 201; Paroutis, Franco, and Papadopoulos (2015), p. 49; Rigby and Bilodeau (2005), p. 4; Tapinos, Dyson, and Meadows (2011), p. 897.

Clark (1997) define strategy tools as "*numerous techniques, tools, methods, models, frameworks, approaches and methodologies which are available to support decision making within strategic management*"[53]. Strategy tools provide practitioners support during all stages of the strategic management process and support them in making "*[…] strategic decisions that influence both the long and short-term objectives of an organization*."[54] Thereby, strategy tools contribute to strategy creation and execute different functions. First, they provide a structure for analysis as they propose user's different elements that need to be considered during the process of analysis. Second, in a team setting strategy tools encourage communication and the exchange of ideas and therefore contribute to shared meanings and understandings between different individuals. Third, strategy tools are means of generating, structuring and visualizing information and knowledge collected during the analysis which simplifies the subsequent presentation and communication. Finally, tools assist with coordinating and controlling actives that result from the analysis process.

In general strategy tools such as models, frameworks or methods simplify knowledge from theories into knowledge artifacts[55]. Therefore, knowledge artifacts have the potential to bridge the gap between theory and practice as they integrate knowledge from theories into actionable strategy tools[56]. According to Jarzabkowski and Wilson (2006) the development of actionable strategy tools from theory requires a dyadic process of dissociation[57]. The first step in the process involves the simplification of broader theories into a strategy tool consisting of single concepts, variables and relationships. The second step includes the adaption of strategy tools and theoretical assumptions for the use in practice. An undesirable side effect of the second step of the dyadic dissociation process is that strategy tools are often adopted by practitioners without any consideration of their theoretical origins. This can have an impact on their overall effectiveness and therefore managers are advised to pay caution in what contexts strategy tools are used in.

In the next chapter four groups of strategy tools in purchase category management are introduced. Before the next section introduces a taxonomy of strategic management processes in purchasing and contributes to an understanding of the focus and context of this research.

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[53] Clark (1997), p. 417.
[54] Jarzabkowski and Wilson (2006), p. 348.
[55] See Jarzabkowski and Kaplan (2015), p. 538; Jarzabkowski and Wilson (2006), p. 348.
[56] See Van de Ven and Johnson (2006), p. 803.
[57] See Jarzabkowski and Wilson (2006), p. 362.

2.4 The taxonomy of Strategic Management Processes in purchasing: Increasing performance at firm, purchasing, category and supplier level

The taxonomy of strategic management processes shows that the strategic management process can be applied at all organizational levels in order to derive strategies that affect performance. Figure 4 illustrates the taxonomy of strategic management processes in purchasing which logic is built on the hierarchy of strategies developed by Hesping and Schiele (2015)[58]. The taxonomy of strategic management processes in purchasing shows that the strategic management process can be applied by managers at firm, functional, category and supplier level. At every level the input to the strategic management process are changing environmental factors. The process analyses changing environmental factors and transforms them into requirements for the corresponding strategy dimension. Thereby at every level managers can apply strategy tools that aim to support the development of a competitive strategy[59]. The output of the process at every level are strategies that are aimed to positively affect performance. For most organizations a fundamental task is the alignment of strategies across the different hierarchical levels and functions. In other words, strategies at firm, purchasing, category and supplier level need to be linked to eliminate conflicting priorities[60].

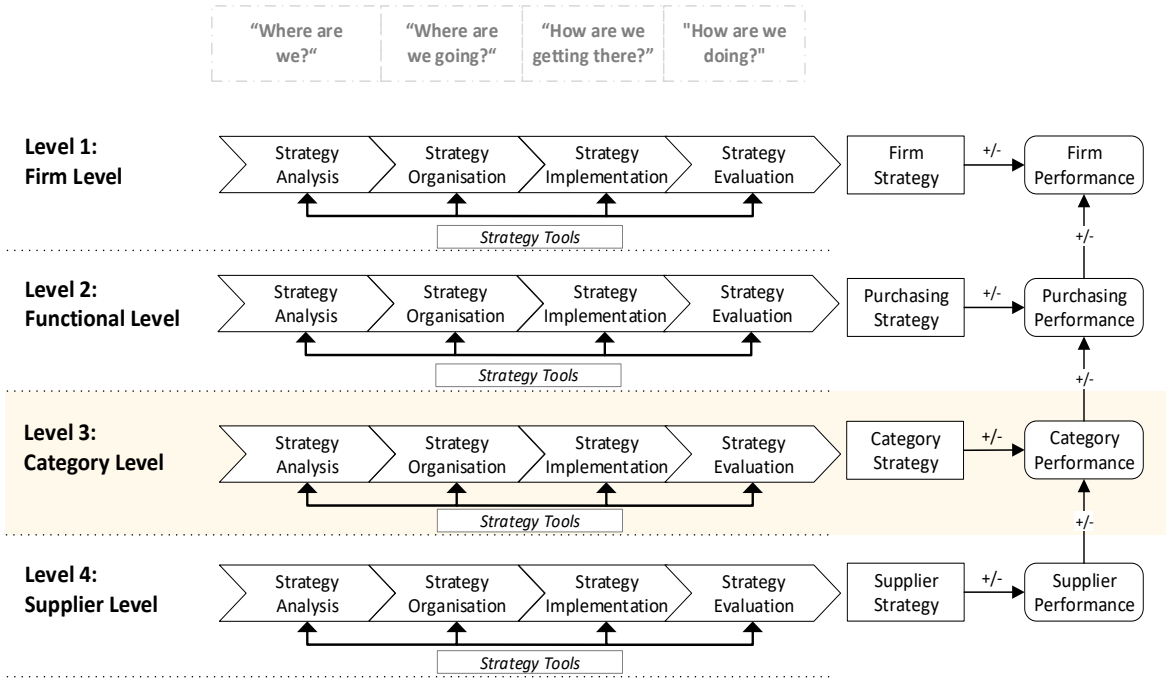

Figure 4 The taxonomy of strategic management processes based on own elaboration
Source: Own elaboration based on Hesping and Schiele (2015)

[58] See Hesping and Schiele (2015), p. 139.
[59] See Jarzabkowski and Kaplan (2015), p. 224.
[60] See Rodríguez-Escobar and González-Benito (2017), p. 1182.

At *firm level* the strategic management process can be applied to develop a firm strategy that positively affects firm performance. The firm strategy is most often developed by chief executive officers and describes the overall purpose of the business on the long run and how it positions itself in the market in order increase its competitive performance. Firm strategies are formulated in terms of policies, aspirations, mission statements and vision statements[61]. Literature has shown that a clearly formulated firm strategy can contribute to firm performance. Empirical research found that firm strategies can have a positive impact on market share, return on assets, return on sales, cash flows and profitability[62]. For example, Asdemir et al. (2013) in a study of publicly traded firms investigate that the focus on cost or differentiation strategies can lead to significant higher abnormal returns[63]. Furthermore, Vorhies et al. (2009) in their study of firms from the motor-carrier industry find that differentiation, cost and product-market strategies can significantly improve a company's cash flows[64].

At *functional/purchasing* level the strategic management process can be applied to establish a purchasing strategy that positively affects purchasing performance. The purchasing strategy is most often developed by chief purchasing officers and describes how purchasing adds value to the business strategy. In addition, the purchasing strategy is usually formulated in general guidelines or programs based on competitive priorities and generic competitive objectives[65]. For instance, general guidelines describe how purchasing contributes to competitive priorities such as quality, flexibility, innovation, time, sustainability and cost[66]. Furthermore, programs such as risk-management programs describe how to mitigate risks. Thereby empirical research found that purchasing strategies can have a significant impact on financial[67], innovation[68] and environmental performance[69]. For example, Chen et al (2004) in a study of 221 United States manufacturing firms found support for strong links between strategic purchasing and financial performance of the buying firm[70].

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[61] See Johnson et al. (2010), pp. 121-123; Nollet, Ponce, and Campbell (2005), p. 135.
[62] See Luoma (2015), p. 1098; Miller and Cardinal (1994), p. 1662. Spanos et al. (2004), p. 159. Yeung et al. (2006), p. 226.
[63] See Asdemir et al. (2013), p. 111.
[64] See Vorhies et al. (2009), p. 1326.
[65] See González-Benito (2010), p. 775; Hesping and Schiele (2015), p. 148; Watts, Kim, and Hahn (1995), p. 7.
[66] See Amann and Eßig (2011), p. 8; Spina, Caniato, Luzzini, and Ronchi (2013), p. 1209.
[67] See Ateş (2014), p. 31; Cousins and Lawson (2007), p. 127; González-Benito (2007), p. 912.
[68] See Handfield, Ragatz, Petersen, and Monczka (1999), p. 80; Van Echtelt, Wynstra, Van Weele, and Duysters (2008), p. 180.
[69] See Bowen, Cousins, Lamming, and Farukt (2001), p. 185.
[70] See Chen, Paulraj, and Lado (2004), p. 515.

At *category level* the strategic management process can be applied to derive a purchase category strategy that positively affects category performance. Category strategies are ideally developed by category managers and describe how a purchase category and supplier portfolio add value to the overarching purchasing strategy[71]. The category strategy is ordinarily formulated in category roadmaps with detailed targets and objectives considering for example cost savings, innovation and other performance goals. Hesping and Schiele (2016b) argue that for the achievement of these performance goals category managers apply sourcing levers that are described as a tailored set of tactics for every purchase category. Empirical literature supports that strategic management of purchase categories can contribute to the overall performance of a firm[72]. For instance, Cousins and Lawson (2007) in their study with 142 manufacturing firms based in the United Kingdom found strong support for a positive significant link between a leverage sourcing strategy and business outcomes[73].

At *supplier level* the strategic management process can be applied to derive a supplier strategy that positively affect supplier performance. Supplier strategies are ideally developed by supplier managers and describe how suppliers add value to purchase categories. The supplier strategy is frequently formulated in the form of supplier roadmaps, which summarize a detailed set of targets and objectives to increase performance. Empirical research supports that supplier strategies can have a significant impact on firm performance. For example, in a study conducted at 232 manufacturing firms in Australia Prajogo et. al (2012) found positive relationships between different supplier management practices on performance measures such as quality, delivery, flexibility and cost[74].

This master thesis focuses on the third level of the taxonomy model (See Figure 4) and therefore the next chapter is structured as follows: First, the foundations of purchase category management are discussed. Subsequently, four strategic management process stages are integrated at category level into a purchase category strategy development maturity profile. Afterwards, four different groups of strategy tools are derived that contribute to strategy development. The chapter concludes with the identification of performance benefits that result from category strategy development.

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[71] See Ahtonen and Virolainen (2009), p. 264; Baier (2008), p. 171; Baier et al. (2008), p. 48; Nollet et al. (2005), pp. 135-136.
[72] See Chen et al. (2004), p. 518; Cousins and Lawson (2007), p. 133; Ellram, Zsidisin, Siferd, and Stanly (2002), p. 14; Hesping and Schiele (2016a), p. 101; Mol (2003), pp. 47-48.
[73] See Cousins and Lawson (2007), p. 132.
[74] See Prajogo, Chowdhury, Yeung, and Cheng (2012), p. 127.

3. Strategic Management at Category Level

3.1 The Foundations of purchase category management: managing supply market strategies in order to maintain and achieve sustainable competitive advantage

From a historical perspective category management originates from sales and marketing and has been used to segment products into groups that constitute customer markets[75]. The concept has first been applied in purchasing literature in the 1980s in form of the purchasing portfolio matrix that categorizes purchasing spend into four different categories according to supply risk and profit impact[76]. Despite the high interest and empirical support of the purchasing portfolio matrix in literature purchase category management only recently has received increased attention in the scientific community[77]. Consequently, there is little knowledge of purchase category strategies in existing literature[78]. In practice, the concept has gained a higher level of attention[79]. For example, Johnson et al. (2014) in their longitudinal study including North-American purchase organizations report an increase of 48 percent for purchase category teams in organizations between 1995 and 2011[80].

Hence there are only a few definitions for category management available in academic literature. Table 3 provides an overview of selected definitions. For example, O'Brien (2015) defines purchase category management as *"The practice of segmenting the main areas of organizational spend on bought-in goods and services into discrete groups of products and services according to the function of those goods or services and, most importantly, to mirror how individual marketplaces are organized*."[81] Similarly, Fröhlich and Lingohr (2010) claim that category management is about categorizing the demand of a company into different categories of purchasing spend that are centrally managed by category managers[82]. According to Rüderich, Meier and Kalbfuß (2016) the goal of managing purchase categories that constitute supply markets is the satisfaction of internal customers, the reduction of process and procurement costs as well as the generation of significant price savings. [83]

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[75] See Dhar, Hoch, and Kumar (2001), p. 166; Grajczyk (2015), p. 30.
[76] See Kraljic (1983), p. 113.
[77] See Cox (2015), p. 721; Gelderman and Semeijn (2006), p. 211; Gelderman and van Weele (2005), p. 20; Gelderman and Weele (2002), p. 33; Hesping and Schiele (2015), p. 145, 2016a), p. 101; Trautmann, Bals, and Hartmann (2009), p. 195.
[78] See Ak, Wynstra, and Raaij (2015), p. 205; Hesping and Schiele (2015), p. 147.
[79] See Boutellier and Zagler (2000), p. 7.
[80] See Johnson, Shafiq, Awaysheh, and Leenders (2014), p. 131.
[81] O'Brien (2015), p. 31.
[82] See Fröhlich and Lingohr (2010), p. 63.
[83] See Rüdrich, Kalbfuß, and Weißer (2016), p. 3.

Definition	Author
"The practice of segmenting the main areas of organizational spend on bought-in goods and services into discrete groups of products and services according to the function of those goods or services and, most importantly, to mirror how individual marketplaces are organized."	O'Brien (2015), p. 31
"In category management the demand of the whole company is incorporated in purchase categories and the various sourcing objects of single purchase categories are centrally managed by category managers."	Fröhlich and Lingohr (2010), p. 63
"*A purchase category – also known as spend category – is defined as group of coherent product and services bought from supply markets which are purchased to meet the demands of internal and external customers*"	van Weele and Eßig (2016), p. 296
„*Commodity groups are general categories of purchased items, including materials or services of a similar type provided by the same group of suppliers."*	Schiele, Horn, and Vos (2011), p. 322.

Table 3 Definitions of purchase categories and purchase category management

Schiele et al. (2011) define a purchase category or commodity group as *"[…] general categories of purchased items, including materials or services of a similar type provided by the same group of suppliers*."[84] In other words, a purchase category is an area of organizational spend that summarizes a group of materials or services with similar function that is bought at suppliers from the same supply market[85]. Thus, the group of materials and services purchased from the same group of suppliers mirrors a single supply market[86]. This is in line with the definition of Van Weele and Eßig (2016) who define a purchase category as a group of distinct products and services that are bought on supply markets to meet the demand of internal and external customers[87]. Due to their similar functions these materials and services are substitutable and can be potentially consolidated. According to Boutellier and Zagler (2000) purchase categories are managed through strategic oriented category managers[88]. Thereby, the core idea behind the concept of purchase categories and purchase category management is the possibility to implement differentiated strategies for diverse areas of organizational spend in order to achieve long term competitive advantage.

[84] Schiele, Horn, and Vos (2011), p. 322.
[85] See Ak et al. (2015), p. 205; O'Brien (2015), p. 31; Schiele, Horn, et al. (2011), p. 322.
[86] See Schiele (2007), p. 279.
[87] van Weele and Eßig (2016), p. 296
[88] See Boutellier and Zagler (2000), p. 7; O'Brien (2015), p. 383.

The need for the development of differentiated purchase category strategies results from the growing diversity of goals and objectives a single organization is pursuing in different supply markets[89]. The growing diversity of goals and objectives lead to a shift from a one-dimensional view towards purchasing strategy to a multi-dimensional view. One-dimensional views have described an overarching purchasing strategy that is implemented in an organization. These definitions undermine the existence of a single functional purchasing strategy that is fully integrated into the overall firm strategy[90]. In contrast multi-dimensional views consider a multitude of different strategic dimensions for purchasing strategies[91]. Researchers following the view of multidimensionality claim that purchasing strategies are formulated at more micro levels of the organization[92].

In order to address the diversity of goals and objectives of different supply markets purchase category strategies focus on competitive priorities. For example, while innovation and quality might be of concern when purchasing material in the category of sensors there is a focus on cost when it comes to purchasing standard materials such as toilet paper. Research on purchasing strategies in the past has mainly focused on six different types of competitive priorities: cost, time, quality, flexibility, innovation and sustainability[93]. In more detail, Spina et al. (2013) conducted an extensive literature review of 461 articles from Purchasing and Supply Management related journals between 2002 and 2010 and found that these papers have mainly addressed three different competitive priorities: cost (58% of all articles), innovation (25% of all articles)[94] and quality (24% of all articles).

After a brief discussion on the foundations of purchase category management the next section integrates the strategic management process model developed in the former sections into a purchase category strategy development maturity assessment framework in order to address the first research question of this master thesis.

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[89] See Ak et al. (2015), p. 205; Cousins, Lamming, Lawson, and Squire (2008), p. 265; Gelderman and Van Weele (2003), p. 207; Terpend, Krause, and Dooley (2011), p. 73.

[90] See Carr and Smeltzer (1997), p. 201; Cousins et al. (2008), p. 13; Moser (2007), p. 56; Reck and Long (1988), p. 2.

[91] See Eßig and Wagner (2003), p. 287; Harland, Lamming, and Cousins (1999), p. 662; Hesping and Schiele (2013), p. 60.

[92] See Ak et al. (2015), p. 205; Hesping and Schiele (2015), p. 138; Monczka and Markham (2007), p. 26.

[93] See David, Hwang, Pei, and Reneau (2002), p. 867; Spina et al. (2013), p. 1210, 2016), p. 29; Terpend et al. (2011), p. 74.

[94] See Spina et al. (2013), p. 1209.

3.2 The Strategic Management Process at purchase category level: developing a four-stage purchase category strategy development maturity profile

Although strategic management process models have been widely adopted at business and functional level there is a scarcity of research on the adoption of these models at the level of purchase categories. As a consequence, category managers have no consistent guideline on how to create, implement and monitor purchase category strategies in their organization. Only a few sources are describing process models on the derivation of strategies at the category level. For example, Rendon (2005) developed a commodity strategic sourcing process consisting out of five stages: (1) *profile commodity*, (2) *conduct supply market analysis*, (3) *develop commodity strategy*, (4) *issue RFX & negotiate* and (5) *implement & manage performance*[95]. Next to this O'Brien (2015) introduced the *5i Category Management Process* consisting out of the stages (1) *initiation*, (2) *insight*, (3) *innovation*, (4) *implementation* and (5) *improvement* for the development of category strategies[96]. However, both models have been developed for practical application and lack any scientific and empirical substance as both authors failed to link their process models to previous literature.

Therefore, the strategic management process models described in the previous chapter will be integrated at purchase category level in order come up with a theory-based more comprehensive purchase category strategy development process model in form of a maturity profile. On the one hand the maturity profile developed in this paper provides a framework for category managers to assess the maturity of their organizations category strategy development activities. On the other hand, it provides guidance to managers on how to increase their level of professionalism for purchase category strategy development in order to develop superior purchase category strategies that lead to increased performance levels. The purchase category strategy development maturity profile has been developed based on an extensive literature review on strategic management process models and former maturity models including the empirically well-tested five-dimensional management-based purchasing maturity profile developed by Schiele (2007)[97]. But in contrast to previous maturity models the paper at hand represents the first maturity profile that has been developed for application at the level of purchase categories[98].

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[95] See Rendon (2005), pp. 9-10.
[96] See O'Brien (2015), pp. 81-83.
[97] See Schiele (2007), pp. 284-291; Úbeda, Alsua, and Carrasco (2015), p. 184.
[98] See Schiele (2007), pp. 284-291.

The category strategy development maturity model will address four process stages of strategic management. The four stages have been derived in the previous chapter based on an integration of eleven different process models from strategic management literature[99]. According to Schiele (2007) a "*[…] maturity model describes several-auditable-stages an organisation is expected to go through in its quest for greater sophistication*"[100]. As a consequence, the strategic management process stages will be used to structure the dimensions of the maturity profile and form a comprehensive auditable maturity assessment for category strategy development in practice. The strategic management process approach to category management describes category strategy development maturity by integrating the four stages (1) *strategy planning*, (2) *strategy organisation*, (3*) strategy implementation* and (4) *strategy controlling*. Thereby category managers are expected to go through every of the four process stages in order to achieve a higher level of sophistication for category strategy development.

1. *Strategy planning*: This step aims at gathering information from the external, internal and competitive environment[101]. The focus of purchase category strategy planning is to understand the needs for a particular purchase category and identify environmental factors that can affect a purchase categories performance. For external, internal and competitive analysis the maturity profile adopted in this research builds on four dimensions as described by Schiele (2007) and assesses purchase category strategy planning based on several items anticipated with: (SP1) *demand planning*, (SP2) *pooling planning*, (SP3) *environment scan*, (SP4) *innovation planning*[102].

2. *Strategy organisation:* The information gathered during strategy planning will be used to assess whether the company needs to reformulate the purchase category strategy. Therefore, strategy organization includes the development of strategies in order to align structures, resources and processes according to environmental needs. The strategy dimension has been for example in the focus of the maturity model of Úbeda et al. (2015) who addressed strategy involvement, category strategies, make or buy and supplier strategies[103]. Furthermore, organisational structure, organizational resources and processes have been part of the maturity model of Schiele (2007)[104].

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[99] See Coulter (2012), p. 103; Thompson and Martin (2010), p. 36; Wheelen and Hunger (2012), p. 15.
[100] Schiele (2007), p. 274.
[101] See David and David (2016), p. 47; O'Brien (2015), p. 187; Rendon (2005), p. 14.
[102] See Schiele (2007), pp. 284-291.
[103] See Úbeda et al. (2015), p. 184.
[104] See Schiele (2007), pp. 284-291.

The maturity profile used for this research builds on both maturity models and will assess purchase category strategy organization based on several items described by (SO1) *alignment of structures and mandates*, (SO2) *strategic plan conception at category level*, (SO3) *strategic plan conception at supplier level* (SO4) *strategic plan alignment with other functions* and (SO5) *strategic plan integration*.

3. *Strategy implementation***:** The implementation of a strategic plan is crucial to implement the purchase category strategy developed in the former two process steps. The purchase category strategy plan in this phase is communicated and shared with all relevant stakeholders in the organisation. The dimensions for alignment of human resources as well as strategy communication have also been covered by previous maturity models. A critical part of the implementation of a category strategy is related to the alignment of resources and structures in order achieve the desired targets. Therefore, the maturity profile assesses strategy implementation based on (SI1) *people alignment* (SI2) *structural alignment* and (SI3) *resource alignment*.

4. *Strategy controlling***:** All activities during the purchase category strategy development process need to be controlled in order to ensure the operation of purchase category strategies as well as the achievement of the desired goals. Performance controlling has been addressed by previous maturity models such as Cousins et al (2006) and also is covered by the current maturity profile based on (SC1) *performance reviewing*, (SC2) *implementation of control mechanisms* and (SC3) *taking corrective actions*.

The maturity profile developed measures the four dimensions described above based on several maturity stages that have been linked to every dimension. The maturity stages are derived from theory, previous maturity models or have been based on best practice observations during the master thesis project at a leading medical and safety technology company[105]. The maturity model used measures every topic of category strategy development maturity based on four maturity stages. In line with the model of Schiele (2007) the four stages for every topic are defined according to best practices for every subject and where applicable their logic is structured according to process-organisation principles (See Table 4). [106.]

[105] See Hartmann, Kerkfeld, and Henke (2012), p. 31; Heriberto Garcia and Ronald (2010), pp. 418-420; Paul, Benn, and Brian (2006), pp. 792-794; Paulraj, Chen, and Flynn (2006), pp. 119-120; Úbeda et al. (2015), p. 184.
[106] See Schiele (2007), p. 278.

Stage	Measurement (The organisation …)
Stage 1	is aware of a best-practice method, tool or activity
Stage 2	has assigned a person or position to perform a task
Stage 3	has applied a process for the completion of the task which is documented
Stage 4	assures cross-functional integration and meets basic requirements

Table 4 Measurement for purchase category strategy process development maturity

A detailed representation of the purchase category strategy development process maturity model is summarized in Appendix A[107]. The next section continues to address the second research question by introducing four different groups of strategy tools from category management.

3.3 Strategy tools at the purchase category level: Introducing four streams of strategy tools from category management literature

Although purchase category management is a relatively youthful discipline there is a high number of strategy tools for strategy development available. These strategy tools contribute to strategizing as they execute many different functions including information generation, encouraging communication of ideas, providing a structure for analysis and assisting with coordination and control. For example, strategy tools can support category managers to generate strategic relevant information from their environments that can enhance the performance of the purchase category. However, the diversity of tools in category management is relatively low. The models identified in literature can be divided into four main groups: (1) *portfolio models*, (2) *lever analysis models*, (3) *system architecture models* and (4) *general tools from others disciplines*.

Portfolio models represent the most established group of strategy tools in category management. Portfolio models in category management are used to classify resources or relationships according to their strategic relevance in different portfolio quadrants in order to support the decision-making process[108]. The most cited and addressed portfolio model in purchasing literature has been the 2x2 purchasing portfolio matrix developed by Kraljic (1983) that classifies purchasing spend along the two dimensions "supply risk" and "strategic importance" into four different quadrants for which different tactics or norm strategies have

[107] See Appendix A, p. A1 – A8.

[108] See Lee and Drake (2010), p. 6653; Luzzini, Caniato, Ronchi, and Spina (2012), p. 1017; Wagner and Johnson (2004), p. 719.

been defined: non-critical, leverage, bottleneck and strategic purchases[109]. Further portfolio models predominant in purchasing literature use classification schemes based on material characteristics[110], buyer-supplier relationships[111], purchasing skills[112] or power positions[113]. Table 5 provides an overview of selected portfolio models from purchasing literature. The majority of portfolio models propose a set of tactics or norm strategies that managers can apply in the respective portfolio quadrant in order to manage the diversity of organizational spend. Therefore, portfolio models are deductive, analytic and predictive frameworks as they provide managers with advice on what tactics or strategies can be applied to generate sustainable rents for example in form of innovation or cost savings. Nevertheless, the research of Hesping and Schiele (2016) shows that the set of tactics and strategies proposed by portfolio models is not coherent as different tactics can be applied to several quadrants within the portfolio model[114]. Instead the diversity of portfolios in modern category management requires more differentiated approaches to portfolio management.

Sourcing Levers represent the second group of strategy tools in category management. According to Schiele (2007) "*A sourcing lever is a set of measures that can improve sourcing performance in a commodity group*"[115]. In other words, sourcing levers represent a set of tactics category managers can use to improve purchase category performance. One goal of sourcing levers is to address competitive priorities including innovation, quality, cost reduction, flexibility or quality[116]. There is a large number of sourcing lever frameworks prevalent in existing literature which mainly differ in the number of levers and the degree of complexity [117]. For instance, whereas the model of O´Brien (2015) describes 15 tactics which are grouped into five lever groups, the model Schuh et al. (2011) summarizes 64 tactics into sixteen sourcing levers[118]. Table 5 provides an overview of selected sourcing lever models identified from purchase category management literature. In general, lever analysis can be

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[109] See Kraljic (1983), p. 111.
[110] See Gelderman and Semeijn (2006), p. 214; Hesping and Schiele (2016a), p. 114; Kraljic (1983), p. 111.
[111] See Bensaou (1999), p. 38; Gadde and Snehota (2000), p. 314; Terpend et al. (2011), p. 75.
[112] See Knight, Tu, and Preston (2014), p. 278.
[113] See Caniëls and Gelderman (2005), p. 143, 2007), p. 223; Cox, Sanderson, and Watson (2001), p. 720; Pazirandeh and Norrman (2014), p. 42; Schuh, Kromoser, Strohmer, Pérez, and Triplat (2009), p. 12.
[114] See Hesping and Schiele (2016a), p. 113.
[115] See Schiele (2007), p. 279.
[116] See Hesping and Schiele (2016a), p. 104.
[117] See Büsch (2013), p. 153; O'Brien (2015), p. 130; Schiele (2007), p. 280; Schuh and Bremicker (2005), p. 68; Schumacher and Contzen (2008), p. 38.
[118] See O'Brien (2015), p. 130; Schuh and Bremicker (2005), p. 68.

conducted during lever workshops in which purchasers together with cross-functional partners discuss every sourcing lever in order to identify potentials for performance improvements within a category. An empirically well-tested lever analysis framework has been provided by Schiele (2007) who uses seven sourcing levers to identify performance improvement potentials: pooling of demand, product and programme optimisation, price evaluation, process improvement, extension of supplier base, intensification of supply relationship and category-spanned leverage [119]. In comparison to portfolio models, the tactics proposed by sourcing levers are not limited to single purchasing quadrants. This has been confirmed by the research of Hesping and Schiele (2016) who conducted a survey at 107 sourcing projects and found that sourcing levers in practice have not limited to single purchasing portfolio quadrants but rather have been used in an additive way[120].

System architecture models are multidimensional frameworks that describe the relationship between several units of analysis at different sub-systems. In comparison to purchasing portfolios and sourcing levers, system architecture models tend to structure the environment into different sub-systems and thus are more complex due to their high number of sub-dimensions. Table 5 includes two different system architecture models that have been identified in purchase category management literature: the *15M architecture* and the *Power in Procurement System*[121]. The *15M architecture* developed by Heß (2008) is a framework for the development and continuous improvement of supply strategies based on an architecture system. The system consists of four strategic sub-systems (overall supply strategy, supply market strategy, supplier strategy and controlling) and 15 modules in order to develop a supply strategy[122]. In contrast, the *Power in Procurement System* developed by Bräkling & Oidtmann (2012) is a process based on planning, operations and controlling of four power factors (organization, markets, functions, operations) [123]. To increase the power of the procurement function, the *Power in Procurement System* includes tasks to be carried out to develop strategies for every of the four power factors. Both frameworks represent process models including specific tasks on different subsystems of the procurement function and address the emergent nature of strategy through continuous reconfiguration and diversification of resources.

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[119] See Schiele (2007), p. 280.
[120] See Hesping and Schiele (2016a), pp. 112-113.
[121] See Bräkling and Oidtmann (2012), p. 27; Heß (2008), p. 43.
[122] See Heß (2008), p. 43.
[123] See Bräkling and Oidtmann (2012), p. 27.

Finally, there is a number of strategy tools *from other disciplines* that contribute to purchase category strategy development. Table 5 summarizes a number of strategy tools from other disciplines including Five Forces, Balanced Scorecard, Stakeholder analysis, SWOT analysis and PESTLE. Among others these tools have also been proposed by O´Brien (2015)[124] for the use in category management. For an elaboration on these strategy tools this master thesis refers to previous literature which provided an in-depth discussion on every tool.

Name of tool	Reference Literature
Portfolio models / matrices	
The Purchasing Portfolio Matrix	Kraljic (1983), p. 111
Power-dependence matrix	Caniëls and Gelderman (2005), p. 143
Buyer-supplier relationship matrix	Bensaou (1999), p. 38
Skills profile matrix	Knight et al. (2014), p. 278
Buyer–supplier power structure matrix	Pazirandeh and Norrman (2014), p. 42
Sourcing Levers	
Sourcing lever diamond	Schuh and Bremicker (2005), p. 68
Seven levers	Schumacher and Contzen (2008), p. 38
Seven sourcing levers	Schiele (2007), p. 280
Three key levers	Büsch (2013), p. 153
Five value levers	O'Brien (2015), p. 130
Purchasing chessboard	See Schuh et al. (2009), p. 54
System architecture models	
15M Architecture	Heß (2008), p. 43
Power in Procurement System	Bräkling and Oidtmann (2012), p. 27
Tools applied from other disciplines	
Five Forces	Porter (1980), p. 4
Balanced Scorecard	Kaplan and Norton (1992), p. 72
Stakeholder analysis	Brugha and Varvasovszky (2000), p. 239
SWOT analysis	Marilyn and Judy (2010), pp. 215-216
PESTLE	O'Brien (2015), p. 448

Table 5 Strategy tools from Category Management

The next section is addressing the third research question by discussing benefits that result from category strategy development.

[124] See O'Brien (2015), pp. 434 - 459.

3.4 Benefits of Purchase Category Management: Achieving preferred customer status for preferential resource allocation

Purchase category management can contribute to the achievement of preferred customer status with key suppliers for core categories in order to achieve competitive advantage over competition. Recent business practices such as the core competence movement, supply base optimization and open innovation gave rise to the adoption of the preferred customer concept as they have shifted the balance of power in supply markets to the supply side[125]. As a consequence, buying companies have become more dependent on suppliers for certain purchase categories[126]. Therefore, category managers started to invest more efforts in the relationship with their strategic suppliers in order to rebalance buyer-supplier relations and achieve preferential treatment. One of the main goals of category managers in category management is to secure access to the optimal supplier portfolio from the supply market over competition which can lead to sustainable competitive advantage[127].

The achievement of preferred customer status through category management practices can lead to various performance benefits. According to Hüttinger, Schiele, and Veldman (2012) "*[…] benefits of being a preferred customer are at the centre of many studies.*"[128]. Examples of these benefits are decreased transaction and negotiation costs, less opportunistic pricing behaviour, access to the supplier's best employees, higher engagement in NPD-projects and increased access to supplier innovations and technologies[129]. Therefore, achieving preferred customer status should be seen as a central practice in category management and be considered when defining purchase category strategies. It is assumed that those companies where the preferred customer classification is an integral part of the purchase category strategy are able to increase performance benefits stemming from category management.

In order to identify further benefits of purchase category management an extensive literature review has been conducted classifying performance benefits into four distinct categories: economic, technological, operational and interaction benefits. These benefits are assumed to contribute to the achievement of sustainable competitive advantage.

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[125] See Schiele (2012), p. 44; Schiele, Calvi, and Gibbert (2012), p. 1178; Vos, Schiele, and Hüttinger (2016), p. 4613.
[126] See Nollet, Rebolledo, and Popel (2012), p. 1186; Schiele, Veldman, and Hüttinger (2011), p. 2.
[127] See Pulles, Schiele, Veldman, and Hüttinger (2016), p. 129; Schiele and Vos (2015), p. 139.
[128] Hüttinger, Schiele, and Veldman (2012), p. 1201.
[129] See Baxter (2012), p. 1250; Ellis, Henke, and Kull (2012), pp. 1259-1261; Jeroen, Hans, Bart, and Geert (2015), p. 183; Nollet et al. (2012), p. 1187; Schiele, Veldman, et al. (2011), p. 8.

Economic benefits affect the financial performance of a purchase category and are measured in monetary terms. First, category management can lead to lower purchase prices as the result of supplier optimization, product improvements and process improvements. For example, Ak et al. (2015) state that supply base reduction in category management leads to higher volume discounts which reduces purchase prices[130]. Furthermore, category management can contribute to the reduction of total costs[131]. O´Brien (2015) estimate that organizations with a low category maturity can achieve between 10-20 per cent price reduction of purchased goods or services[132]. For instance, cost performance can be improved through long-term contracting with key suppliers which reduces cost uncertainties and leads to lower purchase prices for the buying company[133]. Next to this purchase category management can lead to lower transaction, administration and negotiation costs due to optimizations in buyer-supplier relationships[134]. Moreover, other economic benefits identified are reduced asset utilization, mitigation of price increases and increased customer satisfaction[135].

Technological or innovation benefits address advantages that improve the innovation performance of a purchase category. According to Jonathan (2015) category management can improve the introduction rate of new products or services as the result of improved buyer-supplier collaboration[136]. Moreover, category management has the potential to reduce the time to market with suppliers through early integration into the new product development processes[137]. Another benefit of category management is that purchaser build up technical expertise and knowledge with respect to their purchase categories[138]. This in turn can enhance the innovative performance as purchasers have state of the art knowledge on the respective supplier market, manufacturing technologies and innovations. Other technological benefits are for example access to a supplier's innovative ideas through the involvement in new product designs and services as well as an increased level of standardization which allows modular product designs[139].

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[130] See Ak et al. (2015), p. 205.
[131] See O'Brien (2015), p. 68.
[132] See O'Brien (2015), p. 68.
[133] See Ak et al. (2015), p. 207.
[134] See Ak et al. (2015), p. 205.
[135] See Jonathan (2015), p. 69; O'Brien (2015), p. 31.
[136] See Jonathan (2015), p. 68.
[137] See Ak et al. (2015), p. 216.
[138] See Grajczyk (2015), p. 2.
[139] See Ak et al. (2015), p. 216; Eßig and Wagner (2003), p. 290.

Operational benefits affect the operational performance of purchase categories. According to Grajczyk (2015) category management leads to an increased transparency and knowledge of the supply market[140]. Furthermore, category management can reduce logistical cost, transportation costs and the complexity in transportation routes[141]. This in turn can reduce the lead time and therefore increase the speed of delivery to the company's facilities[142]. Another operational benefit of category management is the transparency related to the spend of a company[143]. The use of category codes allows companies to analyse a category of spend for several performance improvements based on lever analysis including for example the levers product optimization, cost savings potentials, process improvements or the extension of the supplier base[144]. O´Brien (2015) furthermore argue that category management can lead to a reduction in supply chain risk through an increased focus in the collaboration between category management and supplier relationship management[145]. Next to this, other operational benefits are the improvement of the efficiency of purchasing processes, improvements in the coordination between buyers and suppliers and an enhanced quality level[146].

Interaction benefits arise from the interaction between the buyer and supplier within a certain purchase category. For example, supply base optimisation and standardization of products in category management often leads to a reduced number of suppliers in the supply base[147]. As the result the number of interactions with various different suppliers decreases while the number of interactions with core suppliers' increases. Hence, this allows an increased cross-functional collaboration between the buying company with suppliers from a particular purchase category[148]. Furthermore, an interactional benefit of category management is an increased negotiation power as the result of volume bundling[149]. Finally, based on a social exchange-theory perspective category management can lead to preferential capacity and resource allocation as the result of preferred customer status[150].

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[140] See Grajczyk (2015), p. 67.
[141] See Bozarth (1998), p. 244.
[142] See Bozarth (1998), p. 244.
[143] See Jonathan (2015), p. 69.
[144] See Hesping and Schiele (2016a), p. 105.
[145] See O'Brien (2015), p. 69.
[146] See Ak et al. (2015), p. 2; Grajczyk (2015), p. 3; O'Brien (2015), p. 68.
[147] See Bozarth (1998), p. 244.
[148] See Jonathan (2015), p. 70,
[149] See Grajczyk (2015), p. 3; Rüdrich et al. (2016), p. 14.
[150] See Bozarth (1998), p. 244.

Table 6 summarizes the benefits of category management identified from academic literature. The paper proceeds with a discussion of the research methods of this study.

Benefits of purchase category management		**Reference to literature**
Interaction Benefits	Increased negotiation power	See Grajczyk (2015), p. 3; Rüdrich et al. (2016), p. 14
	Increased cross-functional collaboration	See Jonathan (2015), p. 70
	Fewer suppliers	See Bozarth (1998), p. 244
	Preferential capacity and resources allocation	See Bozarth (1998), p. 244
Economic Benefits	Reduction of purchase prices	See Ak et al. (2015), p. 216; Kauppi, Brandon-Jones, Ronchi, and van Raaij (2013), p. 844; O'Brien (2015), p. 31
	Volume bundling	See Bozarth (1998), p. 244; Grajczyk (2015), p. 3
	Reduction of total cost	See Ak et al. (2015), p. 216; O'Brien (2015), p. 68
	Reducing asset utilization	See Ak et al. (2015), p. 216
	Mitigating price increases	See O'Brien (2015), p. 31
	Customer satisfaction	See Jonathan (2015), p. 69
Technological/Innovation Benefits	Reduction of time to market with suppliers	See Ak et al. (2015), p. 216
	Standardization	See Eßig and Wagner (2003), p. 290
	Technological Expertise of category managers	See Grajczyk (2015), p. 2
	Improving introduction rates of new products/services	See Ak et al. (2015), p. 216; Jonathan (2015), p. 68
	Improving the involvement of suppliers in designing new products/services	See Ak et al. (2015), p. 216
Operational	Increased transparency and knowledge of supply market	See Grajczyk (2015), p. 67
Benefits	Reduction of logistical cost and transportation routes complexity	See Bozarth (1998), p. 244; (Grajczyk, 2015), p. 237
	Improved coordination and quality	Ak et al. (2015), p. 2
	Reduced lead time	See Bozarth (1998), p. 244
	Transparency of spend	See Jonathan (2015), p. 69
	Improving effectiveness and efficiency of purchasing processes	See Grajczyk (2015), p. 3; O'Brien (2015), p. 68
	Reducing supply chain risk	See O'Brien (2015), p. 69

Table 6 Benefits of purchase category management

4. Research methods

4.1 Research design: Conducting six exploratory case studies with semi-structured interviews to explore category strategy development in the real-world context

In order to investigate purchase category strategy development in practice different research design techniques applicable such as consortium benchmarking, focus groups, the world-café method and semi-structured interviews. For example, consortium benchmarking can be used to visit best practice firms in order to identify best practices of category strategy development that enhance the existing body of research[151]. Alternatively, a focus group design is applicable to interview a small group of respondents from different companies in order to explore opinions and experiences of category strategy development and generate qualitative data to answer the research questions[152]. Next to this, the world-café method is suitable to address the research questions under this study to generate knowledge from a larger group of respondents and professionals of category strategy development in a short period of time[153]. The research techniques consortium benchmarking, focus groups and the world-café method represent group research designs where data is generated from or in collaboration with a group of respondents. Finally, semi-structured interviews are applicable to explore category strategy development in practice based on perceptions of single individuals[154]. Whereas group research design has certain advantages this work has explored category strategy development in practice based on semi-structured qualitative interviews to allow for an in-depth discussion with individual respondents from different companies.

The interviews have been conducted with six managers from Western European organisations are conducted resulting in six case studies. For the interviews a category strategy development maturity profile and a qualitative questionnaire are developed based on an extensive literature review on strategic management and purchase category strategy development[155]. On the one hand the qualitative questionnaire contains open questions from the category strategy development maturity profile. The answers provided by the respondents are used to conduct a posterior maturity assessment and identify best practices of category strategy development. On the other hand, the qualitative questionnaire contains open questions that explore the application of strategy tools for category strategy development in practice

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[151] See Hoffmann, Schiele, and Krabbendam (2013), p. 203; Schiele and Krummaker (2011), p. 1137.
[152] See Ritchie, Lewis, Nicholls, and Ormston (2013), p. 37.
[153] See Ritchie et al. (2013), p. 83.
[154] See Campbell, Quincy, Osserman, and Pedersen (2013), p. 297.
[155] See Appendix C, p. C1 – C4.

as well as resulting performance benefits. Next to this, during the interviews the respondents are asked to provide further material on the concepts under investigation. The materials are analysed based on an in-depth document analysis.

Semi-structured qualitative interviews and document analysis represent appropriate research methods for the research at hand as the study seeks to add meaning to the existing body of research by exploration of purchase category strategy development in practice. A semi-structured interview on the one hand enables the researcher to analyse individual perceptions based on a standardized questionnaire and on the other hand allows to ask further questions and provide an in-depth analysis[156]. Furthermore, document analysis is applied in combination with qualitative interviews in order to draw upon multiple sources of evidence for the study and reduce the potential impact of potential biases[157]. Thereby document analysis is especially applicable in combination with a qualitative case study design. This is supported by Glenn (2009) who has stated that "[…] *document analysis is particularly applicable to qualitative case studies – intensive studies producing rich description of a single phenomenon, event, organisation or program*."[158]. The findings from semi-structured qualitative interviews and document analysis are summarized in six different case studies.

A case study can be defined as "[…] *an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-world […]"*[159]. In other words, a case study is a research method that allows an in-depth and detailed examination of complex social research phenomena in their contextual conditions. Denscombe (2014) state that case studies can for example be used to study phenomena like relationships and processes within a specific research setting[160]. The case studies applied in this paper are inductive, as findings and observations will be used to create propositions, broader generalizations and theories[161]. As a consequence, the case study approach is appropriate to add, confirm or reinforce findings to the existing body of research[162]. As the research questions in this paper are of exploratory nature

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[156] See Campbell et al. (2013), p. 297.
[157] See Glenn (2009), p. 28.
[158] Glenn (2009), p. 29.
[159] Yin (2013), pp. 48-49.
[160] See Denscombe (2014), p. 55.
[161] See Eisenhardt (1989b), p. 535; Eisenhardt and Graebner (2007), p. 25.
[162] See Babbie (2010), p. 309 Eisenhardt and Graebner (2007), p. 25.

an exploratory case study design has been chosen. An exploratory case study design is suitable where the outcome of the case studies is unknown[163]. The chosen research design presents an appropriate method for exploring the research questions under this study as it allows an in-depth investigation category strategy development in practice.

4.2 Data collection: Semi-structured interviews with protocols to confirm, reinforce or add findings to the existing body of research on category management

The semi-structured interviews have been carried out in October and November 2017. In advance of every interview an interview guideline has been sent to the interviewee explaining the purpose of the study and the interview structure. Furthermore, both the interviewer and interviewee signed a form specifying the terms of confidentiality. The interviews have been either conducted in person at the site of the interviewee or via video conference. The interviews lasted between 120 - 200 minutes. At the beginning of every interview the interviewee has been introduced to the concepts of the study. Afterwards the interview has been conducted based on a semi-structured questionnaire containing three sections with open questions. *Section A* contains 48 open questions from the category strategy development maturity profile. *Section B* contains 2 open questions to explore what strategy tools have been used for category strategy development. Finally, *Section C* explores benefits of purchase category management based on 5 open questions. Furthermore, interviewees are asked to provide additional material for document analysis including company information, organizational charts, process descriptions or tools which have been included in the analysis.

For the interview transcription field notes that were written during the interviews have been completed to produce a written text that has been used for further content analysis[164]. Therefore, a mixed-method approach has been applied based on Halcomb and Davidson (2006)[165] relying on non-verbatim transcription and field notes-taking during and after the interview and posterior synchronisation with the interviewees. For synchronisation with the interviewees the field notes and results of the purchase category strategy development maturity assessments have been sent to and discussed with the respondents. The subsequent synchronisation has allowed to reach agreement and allowed the interviewee to correct answers and

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[163] See Saunders (2011), p. 171.
[164] See Oliver, Serovich, and Mason (2005), p. 544.
[165] See Halcomb and Davidson (2006), p. 41.

eliminate misunderstandings in order to enhance reliability and validity of data[166]. The transcripts of field notes for the semi-structured interviews are summarized in Appendices D-F.

4.3 Sample selection and respondent characteristics: Interviewing purchasers from different Western European organizations

The selection of samples for this study has been based on three different selection criteria. The first selection criterion has limited the geographical area of respondents to Western Europe in order to allow for comparability of cases and avoid cultural bias. The second selection criterion has determined that the respondent organization has incorporated a category classification scheme as a precondition for strategy development at the purchase category level. The third selection criterion has addressed the tenure of the interviewees. The respondents had to be in their job position within the purchasing department for more than one year to ensure that they are familiar with the category management practices.

The respondent characteristics of the six organizations that participated in the study have differed significantly. The organizations have been from various different industries including the hospital industry, aviation industry, printing industry, power generation industry and automotive industry. The respondents interviewed have had different job positions including a project manager, a group purchasing manager, a purchasing manager and global category managers. The tenure in their concurrent position ranged between three and nine years.

Firm	Case	Industry	Interview partners
Company A	Case 1	Hospital	A1
Company B	Case 2	Hospital	B1
Company C	Case 3	Aviation	C1
Company D	Case 4	Power generation	D1
Company E	Case 5	Printing	E1
Company F	Case 6	Automotive	F1

Table 7 Cases, Respondents and Interview partners

[166] See Yin (2013), p. 84.

4.4 Research quality: Assessing construct validity, internal validity, external validity and reliability in order to achieve highest research quality standards

During the research process the researcher strived to achieve the highest quality standards with regard to the research quality of the empirical studies. Consequently, in the following the quality of the empirical social research conducted is assessed based on construct validity, internal validity, external validity and reliability. *Construct validity* ensures that the correct measures for the concepts are studied[167]. In order to ensure construct validity three different tactics have been applied. First multiple sources of evidence are used which allow for evidence from six different companies under observation. Furthermore, the researcher has send interview templates in advance. Next to this a case study draft has been sent to and reviewed by the interviewees. *Internal validity* assesses the validity of causal relationships[168.] In other words internal validity concerns whether certain conditions will lead to other conditions. However, using a descriptive or exploratory case study approach the observation of causal statements is not intended. Therefore, internal validity will be discarded for the study at hand. *External validity* addresses in how far findings from the study can be generalized[169]. In order to allow generalization of findings a semi-structured questionnaire has been developed based on an extensive literature review. Theory will be compared to findings from the case studies in order to allow to generalize the results. Furthermore, as multiple case-studies have been conducted the researcher may is able to replicate results to enhance generalizability. *Reliability* of the study is ensured through the use of a semi-structured questionnaire containing open questions. A semi-structured interview ensures that the data collection process can be repeated allowing for the same or similar research results.

4.5 Data Analysis: Using grounded theory building and a purchase category strategy maturity profile to analyse interview transcripts

The qualitative interviews and provided documents have been analysed using grounded theory building which includes three phases of coding: open coding, axial coding and selective coding[170]. Grounded theory building is an inductive method that allows an in-depth interpretation of qualitative data to add meaning to the concepts introduced under this study[171]. Open coding has been applied to analyse the transcripts line by line in order to identify the concepts

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[167] See Yin (2013), p. 84.
[168] See Yin (2013), p. 86.
[169] See Yin (2013), p. 87.
[170] See Flick (2009), p. 307.
[171] See Martin and Turner (1986), p. 141.

in the dataset[172]. Open coding allows to identify patterns in the data and develop categories. Axial coding has been applied to reduce and cluster the categories identified in the process of open coding into subcategories[173]. Finally, selective coding has been applied for the integration of the findings from the interview transcripts into the theoretical models disclosed in this paper[174].

Moreover, the transcripts from the qualitative interviews have been integrated into the purchase category strategy development maturity profile to conduct a maturity assessment. For all of the 48 open questions or items the maturity level has been assessed based on a qualitative maturity scale containing four different stages. The maturity scale has been developed in advance of the interviews. Based on the answer provided and the maturity scale a maturity score ranging from 0 (lowest maturity level) to 20 (highest maturity level) is assigned. Thereby the range 0-4 indicates the first stage of maturity, 5-9 indicates the second stage of maturity, 10-14 indicates the third stage of maturity and 15-20 indicates the fourth stage of maturity. The scores per company, stage, dimension and item have been transformed into percentage values and analysed by application of arithmetic means.

The results from the analysis are summarized in six case studies that are presented in the next chapter.

[172] See Heath and Cowley (2004), p. 146; Strauss and Corbin (1998), p. 101.
[173] See Strauss and Corbin (1998), p. 123.
[174] See Strauss and Corbin (1998), p. 143.

5. In-Case Analysis

5.1 Case 1: Category Strategy Development at Company A

5.1.1 Company A has achieved a mature maturity level with high ratings on all four stages for purchase category strategy development

Company A has achieved a mature maturity level with an overall maturity score of 77%[175]. The average scores per stage have been 81% for *strategy planning*, 76% for *strategy organisation*, 77% for *strategy implementation* and 76% for *strategy controlling* which represents an even distribution. Mature dimensions of the maturity profile have *been pooling planning* (SP2), *structural alignment* (SI2) and *people alignment* (SI1). For *pooling planning* the highest score has been realized on the item *mandates* since negotiation mandates have be clearly assigned via a global supplier data base. High scores on *structural alignment* and *people alignment* have been achieved since the company implemented regular strategy meetings to review the progress of strategy implementation. Next to this, the strategy has been detailed in an action list shared with cross-functional partners. The lowest rated dimension has been *resource alignment* (SI3) due to limited budgets for strategy implementation.

5.1.2 Best practices identified have been formalized strategy documents, gap-analysis and strategy review meetings

Three best practices of strategy development have been identified at *Company A* including formalized strategy documents, gap-analysis and strategy review meetings[176]. First, the company has analysed its categories by application of a method called gap-analysis which has been used to identify the gap between the current category performance against the desired future performance based on several criteria of strategic relevance. As part the document analysis a detailed description of gap-analysis is provided in the next chapter. Next to this, a formal strategy document with revision indices has been applied which documented category strategies in terms of goals and objectives as well as detailed actions with responsibilities and target dates. The strategy document has been shared via web-based cloud sharing services to all relevant stakeholders in the organization. Third, the strategy document has been reviewed and updated during regularly scheduled internal strategy meetings with management and cross-functional partners in order to evaluate the progress of implementation and to define counter-measures in case of deviation.

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[175] See Appendix D, p. D2-D9.
[176] See Appendix D, p. D2-D9.

5.1.3 Strategy tools applied have been standardized market research questionnaires, stakeholder analysis and gap-analysis

For category strategy development the category manager at *Company A* has used different strategy tools in order to identify the requirements for a category strategy such as a market research questionnaire, stakeholder analysis and gap-analysis[177]. First, in order to standardize their market research process *Company A* has implemented a market research questionnaire that contains a set of questions that must be addressed by category managers for strategy definition. The questionnaire has been built on further strategy tools and for example addressed strengths, weaknesses, opportunities and threats as well as political, economic, sociological and technological factors. Second, *Company A* has implemented stakeholder analysis as an integral part of the strategy development process. A stakeholder map has been created for every category defining the relevant stakeholders and the core category team, which participated in the strategy development process. Finally, gap-analysis, which has already been identified as best practice, has been used to identify the gap between the current category performance in comparison to the desired future. To close the performance gap strategic actions have been defined in a category strategy document.

5.1.4 Major benefits have been standardization, involvement of suppliers in NPD and preferential resource allocation

Furthermore, many performance benefits have been identified such as standardization, a higher level of integration of suppliers into NPD initiatives and preferential resources allocation[178]. First, the category portfolio for controllers has been standardized in collaboration with a strategic supplier to reduce the number of controllers from twelve to five to achieve savings of ten percent. Second, category managers could increase the level of involvement of suppliers in NPD for the category printed circuit boards. In collaboration with the category team several actions have been defined in order to involve suppliers already in the idea generation phase to profit from the suppliers' core competencies. Finally, the supplier for printed circuit boards has granted preferential resource allocation in the past indicating a preferred customer status. In more detail, the supplier has invested additional resources in order to help *Company A* to meet target dates and milestones of delayed projects. According to the category manager this service has normally not been offered to other customers. Other benefits are summarized in Table 11 in Appendix B.

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[177] See Appendix E, p. E2-E4.
[178] See Appendix F, p. F2-F6.

5.2 Case 2: Category Strategy Development at Company B

5.2.1 Company B has achieved a basic maturity level with low ratings for strategic plan conception at category level and taking corrective actions

Company B has achieved an overall maturity score of 48% indicating a basic level of maturity. Across the four stages of category strategy development *Company B* has scored on average 53% for *strategy planning*, 52% for *strategy organisation*, 46% for *strategy implementation* and 41% for *strategy controlling*[179]. The lowest rated dimensions across these stages have been *strategic plan conception at category level* (SP2) and *taking corrective actions* (SC3). The low maturity for strategic plan conception at category level has resulted from low ratings on the items *category strategy process* and *category strategy roadmap* since *Company B* has not implemented a strategy development process, has not documented category strategies and has not implemented any category strategy roadmap that summarizes strategic actions aimed to improve category performance. Furthermore, the low maturity for taking corrective actions has resulted from missing consideration of formal root-cause analysis and strategy revision in case of deviations from targeted performance goals. In contrast, the highest rated dimension has been *strategic plan integration* (SO5) since category management has participated in management meetings of several production sites.

5.2.2 Best practices identified have been competitor analysis, supplier strategy documents and the implementation of global KPIs

Best practices that have been identified during the maturity assessment at *Company B* have been competitor analysis, supplier strategy documents and the implementation of global KPIs.[180] First, *Company B* has employed procurement professionals that are responsible for conducting competitor analysis. For categories of high strategic relevance, the supply chain has been analysed and compared with those of competitors. Based on the analysis actions have been defined to achieve preferred access to supply markets over competition. Second, the company has implemented a formalized supplier strategy document. The document has contained a strategy roadmap with detailed actions for supplier development activities. However, targets at supplier level have been defined in isolation from the category strategy. Third, *Company B* has implemented global key performance indicators that measured category and supplier performance in terms of cost development, quality, logistics and innovation performance to allow for group wide performance reviewing.

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[179] See Appendix D, p. D9-D13.
[180] See Appendix D, p. D9-D13.

5.2.3 Strategy tools applied by Company B have been spend analysis and supply market research

Company B has applied a low number of strategy tools for its strategic planning activities[181]. The main strategy tools that have been applied were spend analysis and supply market research. On the one hand spend analysis has been implemented via an IT-Software solution that has allowed the company to generate automated spend analysis reports for every category. Several reports have been pre-configured to analyse the spend distribution across suppliers, different relationship classifications or different regions. Spend analysis reports have been regularly exploited to identify potentials to improve the category performance. Furthermore, the company has employed procurement analysts that have been responsible for conducting external market research. For market research different templates have been available that summarize and visualize information gathered from the external environment. However, market research templates have not been harmonized across the organization and have been rather used on an individual basis. In general, the project manager has criticized that existing strategy tools in purchasing have not been practicable and raised a call for more pragmatic and measurable approaches to category management.

5.2.4 Major benefits identified have been volume bundling, access to supplier innovations and increased collaboration

The major benefits of category strategy development at *Company B* have been volume bundling, access to innovative suppliers and increased cross-functional collaboration[182]. First, volume bundling has been achieved for the purchase category transport packaging. The company has synchronized the demands of all production facilities for transport packaging to a global supplier to achieve cost savings on corporate basis. Second, the project manager has indicated that the organization has experienced higher access to supplier innovations and input from suppliers in the new product development processes as the result of closer integration and interaction with suppliers for all purchase categories. Finally, increased cross-functional collaboration has been identified as a benefit of purchase category strategy development. To be more detailed, *Company B* has experienced an increased degree of collaboration within the purchasing organization and experienced better teamwork in the customer organization. Further benefits that have been identified at *Company B* are summarized in Table 11 in Appendix B.

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[181] See Appendix E, p. E5-E6.
[182] See Appendix F, p. F7-F10.

5.3 Case 3: Category Strategy Development at Company C

5.3.1 Company C has achieved a basic maturity level with relatively high ratings on strategy planning and low ratings on resource alignment

Company C has achieved an overall maturity score of 45% that shows that the company has achieved a basic level of category strategy development maturity[183]. The average scores across the four stages have been 54% for *strategy planning*, 46% for *strategy organisation*, 35% for *strategy implementation* and 45% for *strategy controlling*[184]. The score for strategy planning has been connected with high ratings on the three dimensions *pooling planning* (SP2) *demand planning* (SP1) and *innovation planning* (SP4). The ratings for the former two dimensions have resulted from the implementation of mature demand planning systems allowing for groupwide spend analysis and pooling planning. The ratings for innovation planning resulted from the fact that technology roadmaps have been discussed with strategic suppliers such as large OEMs to collaborate and identify joint cost savings potentials. In contrast, the low score for strategy implementation is the result of low ratings on the dimension *resource alignment* (SI3) to implement category strategies. The low rating has been associated with missing capacities for strategy implementation.

5.3.2 Best practices identified have been responsibility assignment matrices, international pooling planning and a web-based auction platform

Best practices identified at *Company C* have been the use of RACI-charts, international pooling planning and use of a web-based auction platform. First, *Company C* has applied RACI-charts that have described the participation of various roles and responsibilities of the purchasing team in purchase category strategy development. As acronym RACI has described four main types of responsibilities that are typically used: responsible, accountable, consulted and informed. Second, *Company C* has applied international pooling as part of category strategies. The group purchasing manager has acknowledged that international pooling is one of his key responsibilities to synchronize the demands of the different businesses belonging to the group in order to achieve cost saving targets. Finally, the group purchasing manager has had access to a web-based online auction platform. The online-auction platform has been used to invite suppliers that are belonging to a purchase category for bids and achieve the best possible pricing.

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[183] See Appendix D, p. D13-D18.
[184] See Appendix D, p. D13-D18.

5.3.3 Strategy tools applied at Company C have been cost breakdowns and formal category risk assessments

Strategy tools applied at *Company C* have been cost breakdowns and formal purchase category risk assessments[185]. First, cost breakdown analysis has been used to identify potentials for cost reduction for certain products within a category. Therefore, cost breakdowns have been used to itemize the cost of products and services into several different cost drivers. Cost breakdowns have been standardized templates that itemize costs such as material cost, labour cost, overhead costs and process costs related to different products and services. Based on the analysis major cost drivers for a category have been identified offering starting points for cost improvements. Second, *Company C* has carried out formal category risk assessments for overall purchase categories. Risk assessments among others have addressed different criteria such as business risk, cooperation, innovation, supply chain management and supplier evaluations. Based on risk assessment strategic actions have been derived to address and mitigate potential risks for the overall purchase category.

5.3.4 Major benefits have been reduced capital commitment, the optimization of the supplier portfolio and an increased transparency

Benefits of category management at *Company C* have been reduced capital commitment, the optimization of the supplier portfolio and an increased transparency[186]. First, the group purchasing manager could reduce capital commitment for his purchase categories through negotiation of longer payment terms and the implementation of logistics models such as consignment stocks and vendor management inventory in order to decrease capital tie up. Second, an optimization of the supply base has been achieved. On the one hand, for every category actions for supplier development have been defined to increase the performance of existent suppliers. On the other hand, the supply market has been analysed to identify additonal attractive suppliers that could add value to the existing supplier portfolio. Finally, the group purchasing manager listed increased transparency as a major benefits. Category management has helped the company to get increased transparency of supply markets. Increased transparency in turn has allowed purchasers to make quick decisions. Further benefits of purchase category strategy development that have been identified at *Company C* are summarized in Table 11 in Appendix B.

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[185] See Appendix E, p. E6-E7.
[186] See Appendix F, p. F10-F13.

5.4 Case 4: Category Strategy Development at Company D

5.4.1 Company D has achieved a proficient maturity level with high ratings on strategy organisation and low ratings on strategy implementation

Company D has achieved a proficient maturity level with an overall maturity score of 57%. The average maturity scores on the four stages for category strategy development have been 61% for *strategy planning*, 62% for *strategy organisation*, 48% for *strategy implementation* and 58% for *strategy controlling*[187]. Across all stages the highest rated dimensions have been *alignment of structures and mandates* (SO1), *pooling planning* (SP2) and *demand planning* (SP1). Regarding structure and mandates purchasing at *Company D* has been an integrative part of the worldwide procurement network managing activities for all of the 8 production sites. Furthermore, a demand planning system has been integrated that has been regularly updated based on forecast planning meetings organized by company management. The lowest rated dimension has been *resource alignment* (SI3) explaining the low score for strategy implementation. Purchase category strategies at *Company D* have mainly been developed for the largest areas of organizational spend because budgets, resources and capacities for implementation have been limited.

5.4.2 Best practices identified have been portfolio analysis, category team meetings and the definition of a sub-category roadmap

Company D has implemented different best practices such as portfolio analysis, category team meetings and sub-category roadmaps. First, purchasing portfolio analysis has been an integral part of the category strategy development procedure[188]. An in-depth analysis of the purchasing portfolio approach adopted by *Company D* is provided in the next chapter based on document analysis. Next to this, the company has scheduled regular category expert team meetings. The team meetings have been organized in order to share insights on supply market developments and trends, discuss the progress of purchase category strategy implementation and ensure strategy controlling. Finally, *Company D* has defined detailed sub-category roadmaps based on the results from portfolio analysis. The sub-category roadmaps have summarized qualitative and quantitative targets based various different norm strategies. Furthermore, responsibilities, target dates and the status of activities have been defined and regularly updated to ensure timely implementation.

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[187] See Appendix D, p. D18-D24.
[188] See Appendix D, p. D18-D24.

5.4.3 Strategy tools applied at Company D have been spend analysis, supply market research and portfolio analysis

Strategy tools applied at *Company D* have been spend analysis, supply market research and portfolio analysis[189]. First, spend analysis has been conducted based on the ERP-system that provided data on historical spend data per year and region and has provided an annual forecast of demands for the next year. Supply market research has been conducted in an unstructured fashion and has been in the responsibility of category purchasers. Finally, purchasing portfolio analysis has been used as an integral part for strategic planning. For an in-depth analysis of the sub-category two portfolio models have been exploited and integrated into an Excel-Tool that has been used in order to categorize material groups and suppliers according to their strategic relevance. The results have been automatically synthesized in a third portfolio matrix that has proposed norm strategies for managing the sub-category. As part of document analysis the next chapter provides a more detailed description of the tool.

5.4.4 Major benefits identified have been the reduction of supply risk, intensification of relationships and an increased supply market focus

Major benefits of category strategy development at *Company D* have been the reduction of supply risk, the intensification of supplier relationships and increased focus on managing supply markets[190]. First, the analysis of the category cabinets at *Company D* has revealed that the supply risk has been relatively high due to a dependency on one single supplier who in the recent history had several capacity constraints. Therefore, a major strategic action for this category has been the extension of the supply base in order to reduce the risk of bottleneck situations. Second, category management has contributed to the intensification of the relationship with strategic suppliers. After a production stop caused by a quality issue of heating components the strategic supplier of that category has agreed to immediately send two dedicated engineers that worked together with engineers of *Company D* to solve the problem. The service of the supplier has not been charged. Finally, according to the category purchaser a major benefit of category strategy development has been an increased supply market focus. As the result of category strategy development, the focus of purchasing has become more strategic due to a shift from managing single suppliers to managing supply markets. Further benefits identified are summarized in Table 11 in Appendix B.

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[189] See Appendix E, p. E7-E9.

[190] See Appendix F, p. F13-F16.

5.5 Case 5: Category Strategy Development at Company E

5.5.1 Company E has achieved an immature maturity level with higher ratings strategy planning and low ratings on strategy controlling

Company E has achieved an overall maturity score of 21% which indicates an immature maturity level of category strategy development. The average scores across the four stages have been 43% for *strategy planning*, 21% for *strategy organisation*, 13% for *strategy implementation* and 10% for *strategy controlling*[191]. The maturity level for strategy planning results from higher ratings on the dimensions *demand planning* (SP1), *innovation planning* (SP4) and *pooling planning* (SP2). Among others *Company E* has implemented a procedure for technology scouting in order to identify innovative technologies from the supply market that allow to integrate the diverse product portfolio of the company. Furthermore, an IT-system for pooling and demand planning has been exploited that has provided spend reports and forecasts. The low maturity levels for strategy controlling has been the result of a low average score on the dimension *controlling process and structure* (SC2). For strategy controlling *Company E* has neither implemented a controlling process nor a purchasing controlling function responsible to monitor the performance results.

5.5.2 Despite the low level of maturity, technology scouting has been identified as best practice method at Company E

Although *Company E* has achieved a relatively low maturity level, technology scouting has been identified as best practice method[192]. For technology scouting regular technology meetings with engineering have been established where new technologies have been presented and discussed. As part of this procedure purchasing managers at *Company E* have had the task to screen supply markets for new technology trends that can be integrated across different product portfolios of the business. Potential attractive technologies have been discussed during the regular meetings. A recent example has been the implementation of RFID-technology for different products in order integrate different product portfolios. The technology has been discussed by a purchasing manager during one of the meetings and management has subsequently decided to implement RFID chips into products that are loaded into a machine which enabled the machine to read all relevant data for the further production process from integrated RFID chips.

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[191] See Appendix D, p. D25-D30.
[192] See Appendix D, p. D25-D30.

5.5.3 Company E has not applied any strategy tools during its purchase category strategy development processes

At *Company E* no strategy tools could be identified that have been applied during strategy development[193]. The purchasing manager at *Company E* has not made use of any formal procedure or documentation for strategy development. Instead strategy building has been an informal procedure based on experience and intuition of the purchasing manager. Also, any documentation of strategic actions has been rather limited. In special cases presentations have been prepared to update management on ongoing actions. However, presentations have had no standardized character. But the interviewee has claimed that existing tools have not been tailored towards the company´s needs. The purchasing manager has stated that the majority of purchased materials and services have been bought from monopolistic supply markets and existing tools provide no beneficial recommendations.

5.5.4 Major benefits of category strategy development have been transparency of spend, adherence to safety policies and standardization

Three major benefits of category management at *Company E* have been transparency of spend, higher commitment and standardization[194]. First, *Company E* has implemented an online procurement system in order to integrate all businesses of the group and increase data quality, transparency of spend and reduce maverick buying. Second, in alignment with the company strategy overall category strategies have increased adherence to safety policies. According to the purchasing manager significant efforts have been invested in order to ensure that suppliers across all purchase categories meet the safety targets defined by management. Therefore, suppliers have been forced to sign safety policies and code of conducts. Furthermore, safety trainings have been provided. As a result, category management has been able to reduce the number of infringements and decrease incident rates. Finally, standardization has been identified as major benefit of category management. According to the purchasing manager *Company E* has invested significant efforts in a project that has aimed for standardization of raw materials for the category plastics. In a large project engineering has assessed whether certain raw materials can be exchanged through more standardized resins or plastics. As a result, for certain products alternative raw materials could have been used leading to price savings. Further benefits are summarized in Table 11 in Appendix B.

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[193] See Appendix E, p. E10.

[194] See Appendix F, p. F17-F19.

5.6 Case 6: Category Strategy Development at Company F

5.6.1 Company F has achieved a mature maturity level with high ratings on the dimensions structural alignment due to high scores on strategy meetings

Company F has achieved an overall maturity score of 75% indicating a mature level for category strategy development. The average scores for the four stages of strategy development have been 79% for *strategy planning*, 77% for *strategy organisation*, 70% for *strategy implementation* and 75% for *strategy controlling*[195]. Thereby the highest rated dimensions have been *structural alignment* (SI2), *structures and mandates* (SO1) and *pooling planning* (SP2). The high maturity level for structural alignment among others results from the organisation of weekly operational meetings to measure the progressions of strategy implementation. Furthermore, the high maturity level for structure and mandates is the result of the existence of a handbook specifying roles and responsibilities within purchasing. In contrast the lowest rated dimension has been *resource alignment* (SO5) as the category manager has indicated that his department has been understaffed and personnel capacity for implementation of category strategies has been limited.

5.6.2 Best practices have been the use of strategy roadmaps, a strategy approval process and high market research standards

Company F has applied several best practices such as strategy roadmaps, a strategy approval process as well as high market research standards[196]. First, the company has implemented a standardized procedure for the development of category strategies which have been formalized in strategy roadmap. Strategy formulation has been in the responsibility of category managers in collaboration with operational purchasers. Second, a strategy approval process has been implemented. As part of the process strategy roadmaps have been distributed to management that has been responsible for the final approval of strategies. Finally, *Company E* has defined a set of market research standards that could be exploited for external analysis. For example, the category manager has had access to resources such as statistical reports and market reports based on websites such as statistica.com or Reuters Reports. Furthermore, in order to identify future market trends of IT-markets the category manager has had additional budgets for tailor-made consultancy reports provided by reputable consultancy firms such as McKinsey Company.

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[195] See Appendix D, p. D30-D37.
[196] See Appendix D, p. D30-D37.

5.6.3 Strategy tools used have been spend analysis, SWOT-analysis and GANTT-charts to visualize strategy roadmaps

The major strategy tools that have been identified at *Company F* have been spend analysis, SWOT-analysis and GANTT-charts[197]. First, spend analysis has been conducted as part of the strategy development process. Category planning has focused on the exploitation of IT-Tools such as the global spend analysis system that enabled category managers to generate key performance indicator reports to identify the current performance of their purchase category. Second, SWOT-analysis has been part of the strategy document in order to analyse the strengths and weaknesses of the existing supplier portfolio and identify threats and opportunities from the supply market. According to the category manager the analysis has been conducted in collaboration with operative purchasers from the team. Finally, *Company E* has developed detailed strategy roadmaps that documented strategic actions per category and visualized targets in the form of GANTT-charts. In more detail, GANTT-charts have been used to visualize the chronological order of strategic actions.

5.6.4 Benefits have been volume bundling, long-term contracting and preferential resource allocation through pooling with competitors

Benefits of purchase category strategy development have arisen from the identification of global volume bundling potentials, long-term contracting and preferential resource allocations through pooling with competitors[198]. First, volume bundling has been achieved through global demand synchronisation for software licenses of an office management software. Despite the supplier's monopoly position in the market volume bundling has contributed to cost savings of circa five percent. Second, category strategies have contributed to long term contracting with strategic suppliers for IT-services which in turn has decreased negotiation costs and enhanced collaboration with those suppliers. Finally, the category manager of *Company F* has achieved preferential resource allocation from a cloud storage supplier through pooling with competitors. Due to a scarcity of affordable cloud storage solutions in the supply market *Company F* has adopted pooling with competitors in collaboration with its competitor to be more attractive for the cloud storage supplier and achieve preferential resource allocation over other competitors. Further benefits are summarized in Table 11 in Appendix B.

Table 8 - 9 provide a detailed summary of findings from the in-case analysis. The next chapter provides a cross-case comparison of maturity levels, strategy tools and benefits.

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[197] See Appendix E, p. E11.

[198] See Appendix F, p. F20-F23.

Criterion	***Company A***	***Company B***	***Company C***
Industry	Hospital	Hospital	Aviation
Respondents	Global Category Manager	Project Manager	Group Purchasing Manager
Formal strategy process in place	Yes	No	No
Overall Maturity Score	77%	48%	45%
Strategy Planning Score	81%	53%	54%
Strategy Organisation Score	76%	52%	46%
Strategy Implementation Score	77%	46%	35%
Strategy Controlling Score	76%	41%	45%
Major best practices	• Strategy document • GAP-analysis • Strategy review meetings	• Competitor Analysis • Supplier Strategy Document • Global KPIs	• Responsibility assignment matrixes • International pooling planning • Web-based auction platform
Major strategy tools	• Market research questionnaires • Stakeholder analysis • GAP-analysis	• Spend analysis • Supply market research	• Cost breakdowns • Supplier risk assessments
Major benefits	• Standardization • Involvement. of suppl. in NPD • Pref. resource allocation	• Volume bundling • Access to innovative suppliers • Increased collaboration	• Reduced capital commitment • Optimized supplier portfolio • Increased transparency

Table 8 Summary of results from In-Case-Analysis Company A-C

Criterion	***Company D***	***Company E***	***Company F***
Industry	Power Generation	Printing Industry	Automotive Industry
Respondents	Category Purchaser	Purchasing Manger	Category Manager
Formal process in place	No	No	Yes
Overall Maturity Score	57%	21%	75%
Strategy Planning Score	61%	43%	79%
Strategy Organisation Score	62%	21%	77%
Strategy Implementation Score	48%	13%	70%
Strategy Controlling Score	58%	10%	75%
Major best practices	• Portfolio Analysis • Category Team-meetings • Sub-Category Roadmap	• Technology Scouting	• Strategy Roadmaps • Strategy Approval Process • Market research standards
Major strategy tools	• Spend Analysis • Supply market research • Portfolio Analysis	• Not applied	• Spend analysis • SWOT • GANTT-diagrams
Major benefits	• Reduction of supply risk • Intensification relationships • Supply market focus	• Higher commitment • Transparency of spend • Standardization	• Volume bundling • Long-term contracting • Preferred resource allocation

Table 9 Summary of results from In-Case-Analysis Company E-F

6. Cross Case-Analysis

6.1 Comparison of maturity levels: Comparing the level of professionalism per company, stage, dimension and item

6.1.1 Company: The maturity level across the six different companies has differed so that all four maturity stages have been represented

The maturity assessments have revealed that the overall level of professionalism has differed significantly between the companies under observation. As a result, all four maturity stages have been represented in the samples[199].

First, two companies have achieved a *mature level* of professionalism (4th stage) for category strategy development (A1, F1). Both companies differed from the other companies insofar as they have applied a formal process for the development of category strategies. As a result, category strategy development activities have been harmonized and documented. Furthermore, in both companies cross-functional partners have been involved in the process of deriving purchase category strategies ensuring cross-functional alignment.

Second, one company has reached a *proficient level* of professionalism (3rd stage) for category strategy development (D1). For capacity reasons the company has developed sub-category strategies for categories with the largest spend and potentials for improvement. Therefore, a procedure has been implemented building on purchasing portfolio analysis that has standardized category strategy development across the company. The procedure has regulated that results have been documented in sub-category strategy roadmaps.

Third, two of the companies have achieved a *basic level* of professionalism (2nd stage) for category strategy development (B1, C1). Although both companies have assigned purchasers for the development of purchase category strategies no process or procedure has been implemented that regulated strategy development or ensured documentation of results. Instead strategies have been for example summarized in power-point presentations or have been informally defined by the purchaser.

Finally, one company has achieved an *immature level* of professionalism (1st stage) for category strategy development (E1). The maturity assessment has revealed that category purchasing has been underdeveloped. The company has neither implemented any process for strategy development nor significant best practices or strategy tools could have been identified during the interview.

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[199] See Appendix G, p. G1-G7.

6.1.2 Stage: The level of professionalism for strategy planning & organisation has been higher than for strategy implementation & controlling

The level of professionalism across all cases on average has been higher for strategy planning and organisation in comparison to strategy implementation and strategy controlling. The average maturity score for strategy planning has been 62%, for strategy organization has been 55%, for strategy implementation has been 48% and for strategy controlling has been 49%[200]. The scores are indicating that the level of professionalism for the former two stages has been higher compared to the latter two stages. Combining the scores with the framework presented in this paper (See Table 4) strategy planning and strategy organization are on the third stage of maturity whereas strategy implementation and strategy controlling are on the second stage of maturity. This has been in line with the observations under this study. For many dimensions or activities related to strategy planning and strategy organisation the companies under observation have implemented processes and have documented results. However, for strategy implementation and strategy controlling processes have been implemented to a lesser degree and documentation of results has been limited.

6.1.3 Dimension: The highest average maturity score has been achieved on ´pooling planning´ and the lowest score on ´resource alignment´

The average scores for the fifteen dimensions measured have differed significantly. The three dimensions *pooling planning* (SP2) with a score of 69%, *demand planning* (SP2) with a score of 66% and *alignment of structure and mandates* (SO1) with a score of 61% have achieved the highest maturity ratings. First, pooling planning has achieved the highest average score as the majority of companies have regularly analysed their category spend for pooling potentials and sufficient IT-support for group wide pooling have been implemented. For example, in terms of IT tools different software solutions have been implemented that enabled group wide pooling of demands. Second, demand planning across all cases has been proficient as purchasing personnel at category level has been integrated in product and project planning and existing demand planning systems have been utilised for strategy development. Finally, alignment of structure and mandates has scored high as all companies to some extend have implemented a procedure for categorization of purchase spend, have had mandates for 80% of the purchasing volume, interfaces have been agreed cross-functionally and category management has been an active part of the group wide-procurement network.

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[200] See Appendix G, p. G1-G7.

In contrast the three dimensions *resource alignment* (SI3) with a score of 32%, *taking corrective actions* (SC3) with a score of 41% and *strategic plan conception at category level* (SO2) with a score of 46% have achieved the lowest maturity ratings across all cases[201]. First, resource alignment has achieved the lowest score. This has indicated that for the majority of companies there has been only a limited amount of budgeting available for the implementation of category strategies. Only those categories with the highest potential for cost savings have received sufficient budgets. Second, taking corrective actions has achieved the second lowest maturity rating as companies under observation only partially have initiated correction measures after target- / actual comparison of results. Furthermore, strategy revision has been largely unaddressed by many companies as a major task of strategy controlling. Finally, strategic plan conception at category level has achieved the third lowest score. The reason for the low rating has been that four of the six companies under observation have not implemented a process for category strategy development and targets and objectives have not been sufficiently documented. Instead, in some of these companies targets and objectives have rather been communicated informally without the possibility for monitoring results effectively.

6.1.4 Item: While the item IT support has appeared to be highly rated the item competitor analysis has achieved the lowest rating

The fifteen dimensions of the framework have been measured based on 48 items which have received different average rankings across all six cases.

On the one hand, the three highest rated items across all cases have been *IT Support* with 74 %, *Mandates* for pooling planning with 74%, and *Category Organisation and Roles* with 68%. First, *IT Support* has achieved the highest rating as all companies have exploited a uniform IT Tool for group wide pooling. Second, *negotiation mandates and responsibilities* have been regulated and defined across all purchase categories. Finally, *Category Organisation and Roles* has received the third highest maturity score indicating that on average for all companies a category organisation has been established and in charge of all category management activities.

On the other hand, the three lowest average maturity scores have been achieved on the items *Competitor Analysis* with 23%, *Budgets* with 33% and *Resources* with 32%. First, *Competitor analysis* has achieved the lowest average ratings with all companies being at the first

[201] See Appendix G, p. G1-G7.

stage of maturity. Based on the rating scheme this has indicated that the companies of observation only conduct occasional competitor analysis of selected categories. In fact, this has been in line with the findings from the case studies. Three companies have neglected competitor analysis and did not carry out a comparison of strategies to competitors. Two companies only in part compare strategies with those of competitors, however did not document any of these activities. Only one company has conducted competitor analysis through procurement professionals who have documented results. However, the analysis has only been conducted for selected categories and is not carried out regularly. Second, on average purchasers across the majority of companies have stated that there is a lack of sufficient budgets for the implementation of purchase categories. Budgets have only been assigned to categories with large savings potentials. Finally, in terms of resources the majority purchasers have claimed that capacities for the implementation of a category strategy has been limited.

6.1.5 Synthesis: The maturity profile has been successfully applied to identify strengths and weakness at six different companies

The purchase category strategy development maturity profile could be successfully applied and verified during the six case studies and offered a practicable tool for the comparison of maturity levels for category strategy development. By that the maturity model represents the first maturity profile that has been developed for application at the level of purchase categories in order to assess the level of professionalism of purchase category strategy development. Overall, all items for measuring maturity have been successfully identified during the qualitative interviews with six managers from Western European companies. This provides an indication that purchasers at all six companies have engaged in activities for strategy planning, strategy organisation, strategy implementation and strategy controlling.

Thereby several strengths and weaknesses of category strategy development across the six companies could be identified as the result of the maturity assessments providing purchasers with guidance on how to increase their level of sophistication. For the samples selected under this study strengths have been in particular a strong maturity for the stages strategy planning and strategy organisation as the result of the application of various procedures and processes to derive a purchase category strategy such as mature demand and pooling planning systems. A low maturity for competitor analysis and resource alignment have indicated weaknesses at all companies that could be addressed in the future to increase the level of sophistication for category strategy development. The paper proceeds with a comparison of strategy tools that have been identified across all cases.

6.2. Strategy tools for strategy development: Analysing strategy tools for strategy development across the six companies under observation

6.2.1 The majority of strategy tools identified under this study have been unknown by practitioners

The case studies have revealed that the respondents had limited awareness of strategy tools identified under this study. As part of the case study research respondents have been asked to apply a classification of every strategy tools identified in literature according to a tripartite classification scheme: the knowledge artifact is *unknown* (U), the knowledge artifact is *known* (K) and the knowledge artifact is *applied* (A). Table 10 is an overview of the answers that have been provided. The analysis of answers has revealed that the majority of strategy tools has been *unknown* by the respondents. For example, whereas portfolio models in general have been known by the majority of purchasers many have not been familiar with high number of variations of these models. In other words, the classical purchasing portfolio matrix has been known while other models such as the power-dependence matrix or the purchasing chessboard have been unknown. Furthermore, it has appeared that the respondents have not known any of the strategy tools belonging to the two groups of sourcing levers and system architecture models. Thus, both groups of strategy tools have not been applied during category strategy development.

	The Purchasing Portfolio Matrix	Power-dependence matrix	Buyer-suppl. relationship matrix	Skills profile matrix	Buyer–suppl. Power matrix	The Purchasing chessboard	Sourcing lever diamond	Seven levers	Seven sourcing levers	Three key levers	Five value levers	15M Architecture	Power in Procurement System	Five Forces	Balanced Scorecard	PESTLE	SWOT Analysis	Stakeholder analysis
Company	Portfolio models						Sourcing Levers					SA models		Other tools				
Company A	K	U	U	U	U	U	U	U	U	U	U	U	U	K	K	A	A	A
Company B	K	U	U	U	U	U	U	U	U	U	U	U	U	U	U	K	K	K
Company C	U	U	U	U	U	U	U	U	U	U	U	U	U	K	K	U	K	K
Company D	A	U	A	U	U	U	U	U	U	U	U	U	U	K	U	U	K	K
Company E	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	K	U
Company F	K	U	U	U	U	U	U	U	U	U	U	U	U	K	K	K	A	K

Classification: **U** Unknown **K** Known **A** Applied

Table 10 Strategy tools applied by companies under observation

6.2.2 Strategy tools applied have been purchasing portfolio analysis, PESTLE, SWOT-analysis and stakeholder analysis

A small number of strategy tools identified during the literature review have been applied by the companies under observation such as the purchasing portfolio matrix, PESTLE, SWOT-analysis and stakeholder analysis. First, purchasing portfolio analysis has represented a core knowledge artifact that has been applied by *Company D* for category strategy development and assessment of the strategic relevance of the category and suppliers within the supply base. Second PESTEL and SWOT-analysis and have been known by the majority of respondents and applied by two companies for the analysis of external environments (A1, F1). Third, stakeholder analysis has been applied by *Company A* as part of the category strategy development. The knowledge artefact has been used to create a stakeholder map that summarized relevant stakeholders that are partaking in strategy development. Furthermore, the core category team for strategy development has been defined.

6.2.3 Additional strategy tools have been GAP-analysis, KPI- reports, supply market research questionnaires and Gantt-charts

Moreover, there have been identified additional strategy tools for strategy development that have been applied by purchasers such as GAP-analysis, automated key performance indicator reports, supply market research questionnaires and Gantt-charts. First, GAP-analysis has been used by *Company A* to analyse the current performance against the desired future state based on several dimensions. Second, key performance indicator reports have been applied by *Company F* in order to monitor the performance of purchase categories based on a predefined set of measurements. Third, supply market research questionnaires have been applied by *Company A* in order to conduct external analysis. The questionnaires have included a number of questions that had to be answered by category managers of *Company A* as part of strategy development. Among others these questions also have addressed strengths, weaknesses, opportunities and threats as well as political, economic, sociological and legal factors impacting the purchase category. Finally, GANTT-charts have been applied by *Company F* in order to plan and visualize a diverse set of specific strategic actions that have been part of the category strategy in order to improve the category performance. The paper proceeds with a discussion of gap-analysis and purchasing portfolio analysis as part of document analysis.

6.2.4 Formalized strategy documents: Using strategy documents and sub-category roadmaps to describe purchase category strategies

Confidential Information

6.2.5 Gap analysis: Identifying the gap between the current category performance in comparison to the desired future state

Confidential Information

Figure 5 GAP-analysis as conducted by Company A

6.2.6 Stakeholder analysis: Identifying the stakeholders included in purchase category strategy development

Confidential Information

Figure 6 Illustration of stakeholder analysis at Company A

6.2.7 Market research questionnaires: Using standardized questionnaires environmental analysis

Confidential Information

Figure 7 Extract from market research questionnaire at Company A

6.2.8 Portfolio analysis: Classifying categories and the supplier portfolio according to their strategic relevance and applying norm strategies

Confidential Information

Figure 8 Portfolio analysis as adopted by Company D

6.3. Comparison of Benefits: Comparing Economic, Technology, Operational and Interaction Benefits identified during the case studies

6.3.1 Economic Benefits: Volume bundling and reduction of prices have been identified at different cases and increased sales performance once

Whereas volume bundling and reduction of purchase prices have been identified across different cases, increased sales performance has only been stated once[202].

First, all of the respondents have identified volume bundling as benefit of purchase category strategy development (A1, B1, C1, D1, E1, F1). Volume bundling has been achieved by different activities such as reduction of suppliers for a purchase category (A1, D1), global synchronization and consolidation of demand (B1, C1, F1), consolidation by the use of long-term framework contracts (D1) and the introduction of an online procurement system (E1). For instance, *Company D* has consolidated the demand for the purchase category pipes to a single wholesaler in order to reduce the number of suppliers and achieve higher price discounts for the products purchased.

Second, five of the respondents have identified price reductions as benefit of category strategy development (A1, C1, D1, E1, F1). The price reductions have been achieved through various different activities such as linear performance pricing analysis (A1), auctions (C1, D1) or standardization (E1). For example, *Company A* has applied linear performance pricing to conduct a price-performance comparison of 150 different detectors. As a result, overvalued detectors have been identified which could be renegotiated. Next to this, *Company C* has exploited a web-based auction platform to invite suppliers from a purchase category for bids to achieve lower prices.

Finally, only one of the respondents has identified increased sales performance as economic benefit of purchase category management (A1). The category manager at *Company A* has stated that category management can lead to an increased sales performance in case of product optimizations. For instance, in collaboration with a strategic supplier the portfolio of controllers has been consolidated and optimized. In order to reduce the number of controller various functions have been integrated into a single controller. The product optimization of the category portfolio not only has decreased the number of controllers but also has led to an increased customer demand as the result of additional functions that have been provided.

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[202] See Appendix B, p B1 - B4.

6.3.2 Technology Benefits: Standardization, product optimization and involvement of suppliers in NPD are benefits across all cases

Furthermore, several technology and innovation benefits of purchase category strategy management have been identified such as standardization, product optimization and technological expertise of purchasing staff[203].

First, standardization has been identified as a benefit of strategy development by two companies (A1, E1) and has been achieved by means of two measures including the review of specifications for new variants that reduce the variant diversity and the standardization of raw materials. For example, *Company A* in collaboration with its strategic supplier has reviewed its portfolio of controllers. Specifications have been reviewed and new variants have been introduced that cover the functions of other controllers. As a result, the portfolio could be reduced from twelve to five different controllers. Furthermore, *Company E* has initiated a large project in order to standardize the large variety of resins and polymers that have been used across the group to reduce supply chain risk and costs. Therefore, various alternative raw materials have been tested.

Second, two companies have listed product optimization as a major benefit (A1, E1). Product optimization has been used to reduce the number of variants and integrate innovative technologies from technology scouting activities. For instance, Company A has reduced the number of variants for its controller portfolio. In a joint cooperation with research and development, product management and the supplier for the category the functions of several controllers have been integrated into a smaller portfolio. Company E has optimized its product portfolio by technology scouting of RFID technology for different products. The technology could be successfully integrated to enhance the product performance.

Finally, technological expertise of purchasing staff has been named by two companies (A1, C1). According to the respondent's category management has allowed them to specialize and extend their knowledge about supply markets. This has for example involved knowledge about major market participants, technological trends, key customers, machinery, manufacturing technologies and cost drivers. For example, at *Company A* value management has been specialized in certain categories and manufacturing techniques and could therefore contribute to optimize the manufacturing processes for a purchase category.

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[203] See Appendix B, p B1 - B4.

6.3.3 Operational Benefits: Improved quality and logistics performance have been identified across different cases and adherence to policies only once

While increased quality and logistics performance has been identified across different cases, adherence to policies has only been identified once[204].

First, two respondents have identified an increased quality performance as the result of category management (A1, B1). Improved quality performance has been the result of less defects, decreased failure rates for incoming goods and work in progress as well as lower scrap rates. For example, at *Company A* quality goals have been defined for different purchase categories and have been part of the category strategy. The goals have been communicated to the suppliers within the purchase category and regularly tracked during business reviews. In case of deviations the suppliers have been forced to send 8D reports and define countermeasures to ensure that quality targets are met in the future.

Second, improved logistics performance has been achieved by three respondents (A1, C1, D1). Improved logistics performance among others has been achieved through implementation of logistics targets and models such as Kanban and vendor managed inventory with consignation. For example, *Company A* has implemented logistics targets into the purchase category strategy that have been communicated to suppliers. Next to this, *Company D* has implemented a Kanban system with suppliers for the category pipes and valves, which has led to an increase delivery performance and reduced stock levels. Similarly, *Company C* has implemented vendor managed inventory with consignation in order to reduce capital commitment.

Finally, increased adherence to safety policies has been identified as a benefit by one of the respondents (E1). In order to execute the business strategy, the purchasing manager at *Company E* has defined actions in order to ensure the adherence to the company´s safety policies for certain categories. In example, the purchasing manager at *Company E* has been responsible for sourcing categories that have included materials or substances that have been classified as hazardous. The suppliers for these categories have received safety trainings and had to sign contracts to ensure that their deliveries are in line with the company´s safety policies. According to the purchasing manager this has led to an increased adherence to safety policies, and a reduction in the number of infringements.

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[204] See Appendix B, p B1 - B4.

6.3.4 Interaction Benefits: Preferential resource allocation has been identified at three cases and increased commitment and supplier integration once

On the one hand preferential resource allocation as the result of purchase category management has been identified by three respondents and on the other hand increased commitment and increased supply market focus has only been identified by one respondent[205].

First, three respondents have identified preferential resource allocation as benefit of purchase category management (A1, D1, F1) which has shown in the form of the provision of extra capacities during a delayed NPD-project, the short-term provision of dedicated engineers to solve a quality issue that caused a production stop and preferential access to cloud storage over other customers. For example, after a production stop caused by a quality problem for heating components the strategic supplier for the category heating components has agreed to send two engineers on a short-term basis and free of charge in order to collaborate with the engineers of *Company D* to solve the bottleneck situation. Moreover, *Company F* has achieved preferential access to cloud storage capacity as the result of pooling with competitors. Exploiting pooling with competitors to bundle demand both companies have renegotiated prices and have been granted preferential access to cloud storage over other customers.

Second, increased commitment has only been identified by one respondent (E1). According to the purchasing manager of *Company E* strategizing has led to an increased commitment of the internal team and suppliers. For example, the purchasing manager has mentioned that the definition of performance targets for safety performance has increased cross-functional collaboration and the focus towards achieving these goals. Since the performance targets have also been communicated to suppliers and contractually agreed on the suppliers have been committed to the targets as well. Commitment in turn has contributed to the achievement of performance targets.

Finally, increased integration has been mentioned by one respondent. The project manager of *Company B* has indicated that the company experiences increased integration with suppliers as the result of purchase category strategy management. Increased integration has been shown by three different factors: a higher willingness to share innovation, a higher willingness to engage in product or process optimization or simply the willingness of integration in the ERP-system via EDI-connection. After having outlined the benefits across different cases the next chapter is discussing the findings from the case studies.

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[205] See Appendix B, p B1 - B4.

7. Discussion

7.1 Linking findings from category strategy development maturity assessments to literature: Validating a theory based strategic management process

This paper proposes a purchase category strategy development maturity profile that has been validated during semi-structured interviews conducted at six organizations in Western Europe. In the development of the maturity profile particular attention has been paid to the integration of a theory-based four stage strategic management process model containing four stages for strategy development: *strategy planning*, *strategy organisation*, *strategy implementation* and *strategy controlling*. The four stages structure the maturity model and are broken down into 15 dimensions, 48 items and 192 maturity stages that have been formulated based on previous maturity models and a practitioner workshop in order to measure the level of professionalism for purchase category strategy development. The application of the maturity model in practice has provided several important findings that are further discussed.

First, the case studies have shown that all dimensions related to the maturity profile could be successfully identified in practice. An important implication of this finding is that strategy planning, organisation, implementation and controlling can be associated with purchase category strategy development in practice. Furthermore, the case studies could validate the maturity profile and have provided support for the framework developed. Nevertheless, as the study at hand only represents a small sample size of six companies more research is necessary in order to confirm the maturity profile developed under this study. In line with previous research future studies could link the maturity assessment with performance measures in order to investigate in how far a higher level of maturity leads to the development of superior purchase category strategies that lead to increased category performance[206].

Second, the case studies have shown that several best practices of category strategy development have been applied by the companies under observation. These best practices include the use of formalized strategy documents, sub-category strategy roadmaps, supplier strategy roadmaps, market research questionnaires, competitor analysis, gap-analysis, portfolio analysis, a strategy approval process, technology scouting, a web-based auction platform, responsibility assignment matrices, the implementation of global performance indicators and strategy review meetings. Drawing on these findings, this paper proposes to integrate best

[206] Jeroen et al. (2015), p. 199; Kai, Evi, Finn, and Roger (2013), pp. 717-721; Schiele (2007), pp. 284-291; Úbeda et al. (2015), p. 184.

practices in the maturity model in order to extend the framework and provide a more comprehensive tool for category strategy development.

Third, the case studies have shown that the maturity level across the six different companies under investigation has differed significantly. This finding indicates that the level of professionalism for purchase category strategy development has differed between companies. The paper assumes that the different maturity levels can be explained by the concept of purchase category management absorptive capacity. Building on previous research, category management absorptive capacity assumes that category management functions learn more from their environments if they have higher levels of in-house competences[207]. In other words, category management functions with high levels of absorptive capacity are assumed to achieve higher levels of category strategy development maturity.

Fourth, the case studies have shown that the maturity level on average significantly differed between different maturity stages. On average the level of professionalism for strategy planning and strategy organisation has been higher than for strategy implementation and strategy controlling. This represents an interesting finding and implicates that for the six companies under observation a higher-level of in-house competences have been available for the former two stages of the maturity profile. At the same time this finding implicates that organizations have a lower level of in-house competences for the stages strategy implementation and controlling. The maturity model developed under this study not only aims at obtaining insights into the current maturity level but also can provide support to increase the performance for purchase category strategy implementation and controlling.

Finally, the case studies have shown that on average the lowest maturity level across the six companies under investigation has been achieved on the item competitor analysis. This finding shows that competitor analysis only has received limited attention in practice. According to Chen (1996) "*A primary objective of competitor analysis is to understand and predict the rivalry, or interactive market behaviour, between firms in their quest for a competitive position in an industry*"[208]. If category management functions fail to recognize the value of competitor analysis to predict the interactive market behaviour of competitors in supply markets they risk to lose a competitive position in an industry.

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[207] See Schiele (2007), p. 281.
[208] Chen (1996), pp. 100-101.

7.2 Linking strategy tools to literature: Adding strategy tools such as gap-analysis and market research questionnaires to the existing body of literature

Many of the strategy tools identified could be related to literature such as purchasing portfolio analysis, stakeholder analysis and SWOT-analysis. *Purchasing portfolio analysis* has been applied in Case 4 to derive a sub-category strategy based on two different portfolios: the sub-category portfolio and the supplier portfolio. The former can be linked to the purchasing portfolio matrix as described by Kraljic (1983) whereas the latter bases its fundamental logic on the supplier classification model developed by Bensaou (1999)[209]. *Stakeholder analysis* has been applied in Case 1 as an instrument to identify the interests of stakeholders for a purchase category strategy. In line with the suggestions of Brugha and Varvasovszky (2000) the instrument has been used to ask questions about the interest, position and influence of stakeholders to derive requirements for strategy development[210]. Finally, *SWOT-analysis* has been applied in Case 1 and 6 by category managers in order to identify internal strengths and weakness and external opportunities and threats regarding a purchase category. According to Marilyn and Judy (2010) the 2x2 grid represents a starting point for strategic planning and can be applied by managers from various disciplines[211].

In addition, many of the strategy tools that have been identified during the case studies could not be linked to category management literature such as GAP-analysis, cost breakdowns and supply market research questionnaires. GAP-analysis has been applied in Case 1 as a tool to identify the performance gap between the desired future state and the current performance based on several dimensions of strategic relevance for the company. Future research could build on the GAP-analysis framework in order to provide managers with a comprehensive and measurable tool for category strategy development. In addition, cost breakdowns have been used in Case 3 to explore the most significant cost drivers for a purchase category. Although previous research has addressed target costing approaches at material and supplier level no literature could be identified applying cost breakdowns to identify cost drivers for a group of materials[212]. Finally, supply market research questionnaires have been applied in Case 1 and represented a structured approach for external analysis. Altogether, the three strategy tools could be added to the existing body of research offering additional support during purchase category strategy development in practice.

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[209] See Bensaou (1999), p. 38; Kraljic (1983), p. 111.
[210] See Brugha and Varvasovszky (2000), p. 239.
[211] See Marilyn and Judy (2010), p. 216.
[212] See Ellram (2000), p. 40.

7.3 Linking benefits to literature: Increased sales performance and increased adherence to policies could not be linked to literature

Similarly, the majority of benefits that have been identified during the six case studies could be successfully linked to literature including preferential capacity and resource allocation, volume bundling, standardization, technological expertise of purchasing staff, improved transparency of spend and improved effectiveness and efficiency of purchasing processes[213]. For example, *volume bundling* has been identified as major benefit of purchase category strategy development in all cases. Volume bundling has been achieved by application of various activities as described by Hesping and Schiele (2016a) such as such as "purchasing group/consortia" (F1), "reducing suppliers/sources" (D1), "single sourcing" (A1) and "standardising products/reducing variants" (E1) confirming these factors.[214] Moreover, preferential resource allocation has been identified as benefit of category strategy development in three cases. Preferential resource allocation indicates the achievement of preferred customer status[215] and therefore the paper proposes to test the link between purchase category strategy development and achievement of preferred customer status.

The study could also identify benefits that could not have been linked to literature including, increased sales performance, increased adherence to policies, closer buyer-supplier interactions, and higher willingness for EDI-integration into the buying company's ERP-system. In Case 1 higher sales performance has been identified as benefit of purchase category strategy development. In order to achieve increased sales performance, the company has engaged in product optimization activities which indicates a high impact of category strategy development on the bottom line. Future empirical research could address the strategy-performance link at purchase category level with respect to sales performance. Furthermore, in Case 5 an increased adherence to safety policies could be identified as the result of the implementation of company safety targets in the category strategy. Adherence to policies is a benefit that has yet remained undiscovered in previous category management literature. Table 11 in provides a structured overview benefits identified and their links to literature.[216]

The next chapter concludes by answering the research questions, elaborating on practical and theoretical contributions as well as limitations and possibilities for future research.

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[213] See Appendix B, p B1 - B4.
[214] See Hesping and Schiele (2016a), p. 114.
[215] See Pulles et al. (2016), p. 129.
[216] See Appendix B, p B1 - B4.

8. Conclusion

8.1 Offering a practical perspective to purchase category strategy development by exploration of a maturity profile, strategy tools and benefits

More and more buying firms implement the concept of category management in order to manage the growing diversity of their supply markets. Among others the growing diversity of supply markets originates from recent business practices such as supply base optimization and the core competence movement. As a result, organizations increasingly outsourced activities outside their core business. Recent studies suggest that the share of total cost of goods sold in producing organizations has increased up to 80 percent[217]. Hence purchasers are forced to manage an increasing diversity of organizational spend from an even higher variety of supply markets.

Purchase category management helps to manage the diversity of supply markets through the development of differentiated strategies for different areas of organizational spend. Therefore, many organizations started to implement a category management function and categorized their purchase spend into groups of materials and services with similar function that constitute a supply market. Due to their similar functions these materials and services are substitutable and can be potentially consolidated. For key categories a purchase category manager is assigned that is responsible to manage these diverse areas of organizational spend. The purchase category manager has the central task to develop a long-term strategy that determines how the organization is generating superior competitive advantage from the management of supply markets, purchase categories and the supplier portfolio.

In order develop differentiated purchase category strategies category managers can apply the strategic management process at category level. The strategic management process has been defined as a series of process steps managers need to consider in order to manage strategies at all hierarchical levels of their organization. The goal of strategic management processes is to provide managers with a guideline for the analysis, formulation, implementation and evaluation of strategies. This paper has introduced the taxonomy of strategic management processes which assumes that the strategic management process is applicable at all levels of an organization: firm level, functional level, category level and supplier level. The outcome of the strategic management process at every hierarchical level are strategies which need to be aligned in order to effectively secure the competitive advantage of a firm.

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[217] See Ak et al. (2015), p. 215; Dubois and Pedersen (2002), p. 355.

However, past literature has failed to integrate the strategic management process at the hierarchical level of purchase categories. The literature review has revealed that only two authors have previously discussed process models for the development of strategies at category level[218]. From a strategic management perspective both models are incomplete as major steps have been missing. Furthermore, both models have been developed for practical application and lack any scientific and empirical substance as both authors failed to link their process models to previous literature. Therefore, category managers have no consistent guideline on how to derive a purchase category strategy within their organization.

Consequently, this paper has addressed three central research questions in order to close this gap. First the paper has explored what process stages of strategic management should be considered in order to derive a purchase category strategy. Furthermore, the paper has been interested in the identification of best practices for strategy development. Second, the paper investigated what groups of strategy tools have been addressed in category management literature that support purchase category strategy development. The third research question looked into four categories of performance benefits that result from strategy development at category level. In addition, the master thesis explored to what extend results from six explorative case studies conducted at companies from Western Europe confirm or add findings to the existing body of research.

The paper could provide an answer to all three research questions. To answer the first research question the paper has derived four stages of strategic management that managers should consider to develop a category strategy in their organization: strategy planning, organization, implementation and controlling. Next to this, the second question has been answered by identifying four groups of strategy tools that are applicable in purchase category strategy development. In order to answer the third question several performance benefits of purchase category strategy development have been identified in literature and grouped in four distinct groups: economic, interaction, technology and operational benefits. In addition, the master thesis could enhance the existing body of research by confirming, adding and reinforcing literature with findings from six explorative case studies conducted at Western European organizations.

Thereby the paper has provided various theoretical and practical contributions that are further discussed.

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[218] See O'Brien (2015), pp. 81-83; Rendon (2005), pp. 9-10.

8.2 Theoretical contributions: Confirming, reinforcing and adding knowledge to the existing body of category management literature

On the one, the study has provided several *theoretical contributions*.

First, the paper has provided a state of the art literature review on strategic management and purchase category management by providing definitions for central concepts such as strategic management, the strategic management process, strategy, purchase category management and purchase categories. Thereby the study has introduced the taxonomy of strategic management processes and represents the first study that has integrated a theory-based four-stage strategic management process model at the purchase category level to derive a category strategy development maturity framework that can be used to assess the level of professionalism of a company's category strategy development activities.

Next to this, the paper could confirm the application of existing strategy tools in literature. For example, different strategy tools could be identified during the case studies and successfully linked to literature such as the purchasing portfolio matrix and stakeholder analysis. Furthermore, new strategy tools could be added to the body of research like GAP-analysis and market research questionnaires.

Finally, the paper could confirm and link various different benefits of purchase category strategy development from literature to the six cases in order to extend the existing body of research. Moreover, additional benefits have been identified that could not be identified during literature such as increased sales performance and increased commitment.

8.3 Practical contributions and recommendations: Providing a framework to identify and overcome weaknesses in category strategy development

On the other hand, several *practical contributions* provide value for practitioners.

First, based on an extensive literature review on strategic management and purchase category management the paper has derived a category strategy development maturity framework. The maturity profile on the one hand provides a framework for category managers to assess the maturity of their organizations category strategy development activities and on the other hand provides guidance on how to increase their level of professionalism for purchase category strategy development in order to develop superior purchase category strategies that lead to increased performance levels.

Second, the research has identified several best practices of purchase category strategy development like the use of formalized strategy documents, sub-category strategy roadmaps, supplier strategy roadmaps, market research questionnaires, competitor analysis, a strategy approval process, technology scouting, a web-based auction platform, global key performance indicators and strategy review meetings. The best practices identified offer a strategic benchmark for purchasing organisations on how companies across different industries exploit category strategies to achieve superior performance from managing supply markets.

Third, the study has identified different strategy tools from purchase category management literature that can support strategy development in practice. Therefore, the study at hand provides a toolbox of strategy tools and insight in how far these tools have been adopted at six companies in practice. Strategy tools that have been applied have been purchasing portfolio analysis, stakeholder analysis, benchmarking, SWOT-analysis and PESTEL, GAP-analysis, automated key performance indicator reports, supply market research questionnaires and Gantt-charts. The application of this tools can support strategizing activities.

Finally, the research has identified several benefits of purchase category strategy development that have been partially confirmed by the six companies under investigation. This in turn is an indication that purchase category strategy development in practice can lead to several economic, technological, operational and interactional performance benefits. Although the study has not empirically observed the maturity performance link this is an indication that mature purchase category strategies can contribute to the achievement of several benefits that can in turn lead to sustainable competitive advantage of a firm.

A managerial implication of this study is that managers from various different organization can apply the category strategy development maturity profile in order to identify their level of professionalism as well as weaknesses in their category strategy development processes. The different maturity stages provide guidance on how to increase the level of sophistication. Consequently, a *practical recommendation* for the management of the six companies under observation is to address areas with low maturity ratings in order to overcome weaknesses in purchase category strategy development and achieve higher levels of performance from the development of superior purchase category strategies. The maturity assessment conducted at every company provide a detailed overview of various areas of improvement in order to increase the sophistication of purchase category strategy development to develop purchase category strategies that lead to sustainable competitive advantage.

8.4. Limitations and future research: The need for a large-scale study to validate the maturity profile and its impact on performance

Nevertheless, the study at hand has also been subject to several *limitations.* First, the study has included a small sample size and therefore findings cannot be generalized. Second, the samples have been chosen based on three selection criteria: geographical scope, existence of a category classification scheme and tenure of employees in order to allow for comparability of cases. Hence the scope of the research is limited to Western European organisations incorporating a category classification scheme where the respondents have been in their position for more than one year. Third, literature provides severe criticism to maturity frameworks since it has been criticised that there is no best way to act. This study for example has explored the maturity model in five different product industries. The maturity dimensions defined might not be applicable for service firms. Fourth, the maturity assessment under this study has been explorative and not been linked to any performance measurement. Therefore, no evidence is provided that the usage of certain strategy tools or a higher maturity level lead to an increased performance. The final point of limitation regards the qualitative research design. The paper exploits semi-structured interviews and a case study design which is exposed to certain limitations such as interpretation bias.

Future research is necessary to address the limitations of this study and provide a more in-depth observation of category strategy development maturity, strategy tools and resulting benefits. To address the limitations a large-scale cross-industry study is necessary to validate the maturity profile of this study and explore in how far the maturity dimensions described in this paper are applicable in other industries such as the service industry. A large-scale study would allow for generalizability of findings. In addition, future research could relate the maturity profile to various different performance measures such as cost savings, new product introduction rates or turnover in order to observe in how far a higher level of purchase category strategy development maturity can contribute to performance. Moreover, forthcoming studies could observe the impact of the application of strategy tools on the category strategy-performance-link. Based on the six case studies the master thesis concludes with a call for research on more practicable and diverse strategy tools that support managers in the category strategy development process. A point of reference has already been provided by this study which has identified gap-analysis as a knowledge artifact not yet explored in purchasing category management literature.

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Index of appendices

Appendix A– Purchase Category Strategy Development Maturity Profile

Source: Own elaboration based on Schiele (2007) - This document is incomplete without oral explanation.

	Process Stage	Questions for Analysis	% observed	Stage 1 (0%-25%)	Stage 2 (26%-50%)	Stage 3 (51%-75%)	Stage 4 (76%-100%)
		Strategy Planning					
SP1		Demand Planning					
1	Process	To what extend is category management involved in project/product planning? Are planning results documented and accessible for strategy development?		Product or project planning is sporadically known to purchasing personnel at the category level.	Dedicated purchasing personnel at category level are informed about product or project planning. Purchasing has access to demand planning systems.	Purchasing personnel at category level is integrated into product and project planning and utilises existing demand planning systems. Purchasing inclusion points are defined in the process documentation.	Early involvement of purchasing personnel at category level in product and project planning is always ensured. Planning results are an integrative component of the category strategy.
2	Assessment of Demand	Where are future demands of materials or services for a purchase category derived from?		Demands are partly derived from sales or order income prognosis/forecasts.	Demands are derived from sales or order income prognosis/forecasts and planned for significant commodity areas.	Demands are derived systematically and in structured fashion from sales or order income prognosis/forecasts. Procurement market facts are remedially considered.	Demands are always derived systematically and in structured fashion from sales or order income prognosis/forecasts. Procurement market facts like price changes are fully considered when planning sales. System is continuously updated.
SP2		Pooling Planning					
3	Planning	Do you analyse categories for groupwide pooling potential when planning your strategy? Does this regularly happen to all categories?		Occasional analysis of selected categories.	All categories are analysed based on category code data.	Complete purchasing volume is permanently analysed in regard to pooling opportunities. Results are documented.	Future demands are analysed regularly and systematically in respect of their pooling opportunities. Cross-functional partners are involved.
4	Mandates	How are negotiation mandates and responsibilities defined, i.e. are people clearly assigned to purchase categories? Are there group-wide procedures established?		Regulation of negotiation mandates and responsibilities is planned.	Negotiation mandates and responsibilities are partially regulated for single commodities.	Negotiation mandates and responsibilities are regulated. Process applied for all commodities.	Negotiation mandates are delegated and responsibilities are clearly defined on a global basis. Mandates are actively applied.
5	IT support	Which IT tools support you when managing poolable demand?		Insufficient application of IT tools for pooling (e.g. Excel or similar IT-Tools).	Application of a business unit wide IT tool for pooling.	Application of a uniform IT tool for group-wide pooling.	Application of an integrative intranet-based IT tool for corporate pooling. Intranet based preferred parts and preferred supplier's database used cross-functionally.

	Process Stage	Questions for Analysis	% observed	Stage 1 (0%-25%)	Stage 2 (26%-50%)	Stage 3 (51%-75%)	Stage 4 (76%-100%)
SP3		Environment Scan					
6	External Analysis	How do you identify purchase category strategy requirements from your external environments? What methods for analysis do you use?		Occasional external analysis of selected categories.	The external environment of all categories is analysed by the responsible purchasing personnel.	A procedure for external analysis is defined, documented and applied.	A process is defined for external analysis and cross-functionally integrated and requirements are met.
7	Competitor Analysis	Do you benchmark your category strategies against those of your competitors? How do achieve competitive advantage over competitors?		Occasional competitor analysis of selected categories.	The competitive environment of all categories is analysed by the responsible purchasing personnel.	A procedure for competitor analysis is defined, documented and applied.	A process id defined and cross-functionally integrated and requirements are met.
8	Internal Analysis	How do you identify purchase category strategy requirements from your internal environments? What methods for analysis do you use?		Occasional internal analysis of selected categories.	The internal environment of all categories is analysed by the responsible purchasing personnel.	A process for internal analysis is defined, documented and applied.	The process for internal analysis is cross-functionally integrated and requirements are met.
9	Cross-functional integration	How are partner functions involved in drawing conclusions out of the analysis results?		Results out of the environmental analysis remains mostly at purchasing.	Less active exchange with other process partners (e.g. engineering, sales).	Regular information exchange process with partners (e.g. engineering, sales).	Exchange of environment analysis results occur continuously and is protected against the non-authorised use by stakeholders.
SP4		Innovation Planning					
10	Technology Identification	How do you keep track of technology trends within your purchase category strategy?		Category management reactively follows procedures of process partners (e.g. Engineering, Sales)	Category management presents remedially information about technology trends to their process partners. Technology monitoring is part of purchaser's responsibilities, but applied in a sporadic or passive form.	Category management acts proactively following established processes.	Category management supports systematically product or technology development. Information about technology trends used by cross-functional partners. Tools for innovation generation are available (value engineering, innovation workshops etc.)
11	Innovation process	Is there a formal process of innovation and technology monitoring or scouting established?		Process is planned.	Rough process in category purchasing is available. Sporadic application.	Detailed process with clear category purchasing responsibilities is implemented and applied.	Detailed process available, with an early supplier inclusion process is implemented and applied. The process is supported by IT based tools.
12	Technology Roadmaps	Are category managers acquainted with internal technology roadmaps for their category? Is there a methodology of correlating internal technology roadmaps with those of the suppliers from a purchase category?		Own product and technology roadmaps exist and are partially known to category purchasers.	Own product and technology roadmaps are known, those of strategic suppliers are partially known. Responsibilities for roadmap-analysis defined.	Process of matching own product and technology roadmaps with the roadmaps of significant suppliers.	Implementation of harmonised product and technology roadmaps with selected suppliers, cross-functionally agreed. Suppliers regularly present their technology roadmaps.

	Process Stage	Questions for Analysis	% observed	Stage 1 (0%-25%)	Stage 2 (26%-50%)	Stage 3 (51%-75%)	Stage 4 (76%-100%)
SO		Strategy Organization					
SO1		Structure and Mandates					
13	Category Structure	Do you classify spend according to an-inhouse classification scheme?		Only a few purchased materials and services are classified into categories.	All purchased materials and services are categorized by responsible purchasing personnel.	There is a process in place for categorizing purchased materials and services continuously.	Purchased materials and services are continuously categorized and category structures are cross-functionally integrated.
14	Category Organisation and Roles	Is a category management organisation established? Are responsibilities for strategy development defined?		Category responsible people are named. Purchasing organisation is insufficiently established.	Category organisation is formally in place.	Category organisation is established and is in charge of all category management activities. Category management policy is described and communicated.	Category organisation is continuously further developed based on business strategy, purchasing strategy, benchmarks, interviews or process reviews.
15	Mandates	Is category management responsible for all procured goods and services? Do you have regulations for sanctions for non-compliance?		Many categories are not managed in responsibility of category management	Category management initiates programs and measures for mandating procurement fields. Penetration > 50%.	Category management has the mandates for complete purchasing volume defined mandatorily and communicated. Penetration > 80%.	Regulations for sanctions in case of non-compliance are introduced. Penetration ca.100%.
16	Cross-functional integration	Are interfaces towards partner functions defined? Are they cross-functionally agreed and responsibilities defined?		Interfaces of category management are known and tasks are partially described.	Interfaces are cross-functionally agreed for isolated function. Respective tasks and responsibilities at the partner functions are known.	Tasks and responsibilities are coordinated with all interfaces according to company wide defined processes, and are described in a guideline.	Category management drives continuous improvement and the definition of interfaces and guidelines are described.
17	Integration into Group	How is category management integrated in the purchasing network of the group / in case of a single location organisation: collaborating with other firms?		Category management acts locally without exchange with other purchasing departments.	Category management remedially exchanges information with other purchasing departments.	Category management is an active part of the group-wide procurement network.	Category management is integrative part of the worldwide procurement network of the group.
SO2		Strategic Plan Conception at Category Level					
18	Category strategy process	Do you have a management process in place for the definition of purchase category strategies?		Purchase category strategies are defined individually.	A planning process is existing for all substantial purchase categories.	The purchase category strategy development process is defined. Strategy development plans are derived from strategic planning activities and are implemented.	Category strategy development process is implemented and regularly updated. Development plans are harmonised across the organisation and shared cross-functionally. Communication of all results is ensured.
19	Purchase category strategy roadmap	How do you formulate targets and objectives at purchase category level?		Targets and objectives are not formally assessed.	Targets and objectives are formulated by responsible purchasing personnel.	There is a process in place for continuous reformulation of targets and objectives by responsible purchasing personnel.	Targets and objectives are continuously reformulated and aligned with the company's business and purchasing strategy, cross-functional partners and international stakeholders

	Process Stage	Questions for Analysis	% observed	Stage 1 (0%-25%)	Stage 2 (26%-50%)	Stage 3 (51%-75%)	Stage 4 (76%-100%)
20	Target Results Definition	Are the targets for the purchasing category derived from the purchasing strategy and business plan of the group? Are category managers involved in defining targets together with executive management?		Purchasing category targets are derived isolated out of business planning targets.	Purchasing category targets are derived from the business planning targets under involvement of purchasing. Targets are not cross-functionally agreed.	Category management is comprehensively involved in the target setting. Category management targets are partially cross-functional accepted.	Category management is significantly involved in the target setting of the business unit. Input out of procurement markets are considered in the planning process. Impact of category purchasing targets on business results are integrated in the budget and rolling forecast.
21	Supply base alignment	Do you have a procedure in place in order to align the supply base structure in accordance to your purchase category strategy?		Supply base structure in some cases is adapted in line with category strategy.	Supply base structure for all categories is adapted in line with category strategy.	Category purchasers installed a procedure to regularly review whether the supply base structure is aligned with the category strategy.	A procedure is in place to regularly align the supply base structure with the category strategy in collaboration with cross-functional stakeholders.
SO3		Strategic Plan Conception at Supplier Level					
22	Supplier Management Process	Has a formal supplier management process been implemented?		Supplier management is not or only partially described.	Purchasing personnel is responsible for supplier selection, evaluation, development and phase-out based.	A supplier management process is applied and decisions are traceable documented.	A supplier management process is applied. Supplier management is documented. Cross-functional partners are integrated into the supplier management process.
23	Supplier strategy roadmap	Are supplier strategies formulated and documented? How do you align supplier strategies with purchase category strategies?		Supplier strategy is documented insufficiently. No alignment.	Supplier strategies are documented for major suppliers. No alignment.	Supplier strategies are documented according to a process for strategic suppliers and aligned with category strategies.	The organisation is fully aligned to support the supplier strategy development process, which is continuously and systematically improved.
SO4		Strategic Plan Alignment with other Functions					
24	Involvement Marketing	Is category management acquainted with marketing strategies, relevant markets and key customers? Do you align marketing strategies with purchase category strategies?		Marketing strategies are partially known in category management. Alignment depends on single persons.	Existing and future marketing strategies are known in category management. Alignment depends on single persons.	Category strategies influences marketing strategies or sales prognosis by provision of procurement market know how following a regular process.	Category strategies are integrative part in the development of marketing strategies and sales prognosis.
25	Involvement Quality	Do category strategies consider differentiated quality targets for purchase categories?		Integration of quality targets depends on single persons. Integration occurs incidentally, criteria for integration are not existing. Quality management is subject to quality department.	Category management supports the quality department in quality related issues resp. supplier issues (e.g. claim and extra expenses cases). Interfaces established.	Category management is integrated into processes that ensure that quality targets are met. Targets are integrated into the category strategy.	Cross-functional integration into quality management processes. Target are defined with cross-functional partners and integrated into the category strategy.
26	Involvement Logistics	Are there and if so, what are the joint targets between category management and material handling / logistics?		Logistics targets are known to category management and sometimes part of supplier negotiations.	Logistics targets are partially known to category managers and are considered in supplier negotiations.	In the regular process, logistics agreements are concluded together with logistics department at substantial suppliers.	Logistics targets are defined jointly with logistics, continuously updated and implemented.

	Process Stage	Questions for Analysis	% observed	Stage 1 (0%-25%)	Stage 2 (26%-50%)	Stage 3 (51%-75%)	Stage 4 (76%-100%)
27	Involvement Operative Procurement	Are purchase category strategies known by operative procurement? Is a consistent information exchange ensured between both departments?		Strategies are not known to operative procurement and vice versa.	Strategies are known to operative procurement. Information exchange between the departments is ensured.	Strategic and operative purchasing systematically exchange important targets (approach, agreements). Agreements with suppliers are known to operative purchasing and are implemented.	Category strategies are implemented by operative procurement and are complied. Topics of operative procurement are agreed with suppliers by strategic purchasing.
28	Involvement Risk Management	Is risk management an integral part of the category strategy?		Less involvement of category management resp. no risk management process in place.	Responsibilities within category management are clearly described and communicated to the employees.	Involvement and tasks of category management at the risk management process are described. Implementation follows widely the process description.	Risk management is an integrative part of the category management process. Cross-functional involvement ensured and documented.
SO5		Strategic Integration					
29	Management meetings	Are category strategies presented and approved during regular management meetings? Are cross-functional stakeholders involved in the approval process?		No approval process for purchase category strategies in place.	Purchasing management is responsible for the approval of purchase category strategies.	A process is implemented regulating the approval of purchase categories which is documented.	An approval process is implemented and cross-functional stakeholders are involved in the approval process of purchase category strategies to ensure full alignment.
30	Make-or-Buy Decisions	Is category management involved in all make-or-buy decisions? Does category management personnel take part at core competency definition and strategic decisions?		Category managers are not informed about procurement related aspects in make-or-buy projects.	Category managers are involved in in major make-or-buy decisions and core competency definition within a purchase category.	A process regulates the involvement of category managers in make or-buy decision. Category managers define core competencies of a purchase category.	A process regulates the involvement of category managers in make or buy-decisions. Category management tasks are cross-functionally accepted. Potentials for optimisation of the depth of own value added are indicated along the product life-cycle.
SI		Strategy Implementation					
SI1		People Alignment					
31	Strategy Communication	How are category strategies communicated to stakeholders? Are formal strategy plans available?		Purchase category strategies are only defined and known by the responsible category manager. Strategies are not formally available.	The category manager is responsible for the communication of the purchase category strategy in the organization.	There is a formal process in place defining the distribution and communication of purchase strategies within purchasing. Strategies are documented.	Strategy communication is assured cross-functionally through a process defining which stakeholders have to be informed and regularly updated. Purchase category strategies and strategic action plans are made available to relevant stakeholders globally
32	Strategic Action Plans	Are strategic action plans developed based on the category strategy determining who is responsible for certain activities until when and how?		Purchase category strategies are not broken down into strategic action plans.	The purchase category manager has broken down targets into a strategic action plan and is responsible for implementation.	There is a process in place for the definition of strategic action plans based on the category strategy. Strategic action plans are documented and persons are assigned to activities.	There is a procedure in place for the definition and monitoring of strategic action plans. Strategic actions are defined cross-functionally to responsible personnel and actions are regularly tracked and controlled.

	Process Stage	Questions for Analysis	% observed	Stage 1 (0%-25%)	Stage 2 (26%-50%)	Stage 3 (51%-75%)	Stage 4 (76%-100%)
33	Technical Competencies	Is there technical competence available for category strategy development e.g. advanced sourcing engineer?		Partial existence of technical competence, further development is planned.	Technical competence in category management is existing for all substantial commodity areas.	Technical competence in category management is existing for all substantial commodity areas. Project management competence in purchasing is sufficiently developed for efficient collaboration with project teams.	Competencies for all substantial commodity areas are existing and will be continuously developed, remedial and temporary introduction of special knowledge (e.g. consultants).
34	Target Agreements	Are targets defined on employee-level? To what extent? Do targets contain qualitative and quantitative elements?		Target agreements on the non-managerial level is not existing.	Occasional finalisation of target agreements on the non-managerial level. Target agreements include qualitative and quantitative targets.	Target agreements finalised with the complete staff. Continuous support and review.	Target agreements are coordinated and defined with cross-functional partners if necessary, reviewed during the fiscal year.
SI2		Structural Alignment					
35	Functions	Are key functions responsible for the implementation of category strategies described in a generic way?		Individual category management functions are described in general.	Substantial category management functions are standardised described, documented and adapted to firm strategy.	Category management functions are described in detail and agreed with cross-functional partners. Descriptions of category management functions are standardised at all sites.	Developments/tendencies of job profiles are observed and forwarded for review on group level.
36	Strategy Meetings	Are strategy meetings established for reviewing the progress of strategy implementation?		The progress of strategic activities is not being monitored.	The category manager is responsible for the monitoring of strategic actions to assure implementation.	Strategic actions are monitored during regular category management strategy meetings where the progress of strategy implementation will be discussed. Both, activities and progress are documented.	There are regular cross-functional strategy meetings in place that monitor the progress of strategy implementation. The activities and progress are discussed and documented.
SI3		Resource Alignment					
37	Budgets	Does category management have access to sufficient budgeting for the implementation of category strategies?		There is no budgeting for category strategy implementation projects available.	There is limited budgeting available. Budgets are only assigned to those categories with the highest potential for cost savings.	Category management has limited budgets available. Budgets are assigned to those categories with the highest potential for overall performance increases.	There are sufficient budgets available for the implementation of category strategies. Budgets are made available for all category strategies increasing the companies cross-functional performance.
38	Resources	Is enough purchasing personnel allocated to the implementation of purchase category strategies?		There are no personnel available for the implementation of category strategies.	Category management personnel is assigned to purchase categories and responsible for implementation.	There are sufficient personnel available for the implementation of purchase category strategies including additional key functions as value management, advanced procurement engineers etc.	Personnel is allocated cross-functionally to the implementation of purchase category strategies. In case of bottleneck external staff is hired to perform single tasks.

	Process Stage	Questions for Analysis	% observed	Stage 1 (0%-25%)	Stage 2 (26%-50%)	Stage 3 (51%-75%)	Stage 4 (76%-100%)
SC		Strategy Controlling					
SC1		Performance reviewing					
39	Measurement Figures	Are measuring parameters defined to review purchase category strategies?		Only limited target follow-up based on existing performance figures possible.	Substantial performance figures (e.g. balanced scorecard) are implemented.	Group-wide mandatory performance figures are completed by own ones for particular areas.	Performance figures for all scorecard targets are continuously and cross-functionally defined.
40	Responsibility	Are roles and responsibilities for performance reviewing clear and described?		Tasks and responsibilities are insufficiently described.	Tasks and responsibilities are sufficiently described.	Tasks and responsibilities are described according to requirement profiles and are applied.	Tasks and responsibilities are included in a controlling guideline. Implementation mandate for agreed standards in purchasing controlling is established.
41	Category Codes	Do you have category codes in place that allows to review the performance?		Commodity code classification only for selected commodity areas.	Correct and complete commodity code classification for “direct material” is ensured.	Commodity code is defined as a mandatory data field for order release. Continuous revision of wrong commodity code classifications.	Correct and complete commodity code classification is ensured for the total purchase volume.
42	IT support	Are you able to perform spend analysis? On what level of automation?		Purchasing volume is available only for the local ERP-Systems.	Purchasing volume is generated by calculating it according to a group-wide accepted method and can be retrieved to specific purchasing needs.	Regular provision of purchase volume in a central database (e.g. purchasing information system).	Availability of all purchasing volume data in a central database on a monthly basis and active support of standardised supplier number matching process.
SC2		Implementation of control mechanisms					
43	Target Breakdown	How are category strategy targets broken down?		There is no structured target breakdown in place.	Single financial results and performance figures are defined and remedially reviewed.	Substantial financial results and performance figures are defined and are reviewed regularly.	Targets are broken down and structured based on scorecard targets (e.g. processes, finance, customer/market, employee/knowledge/innovation) and reviewed regularly on the basis of rolling forecasts.
44	Organisational Structure	Is the function of planning and steering available and established? Are the planning and steering tasks in category management clearly defined and documented?		Planning and controlling function for category management is not existing.	Planning and controlling function for category management controlling is existing.	Planning and controlling tasks of category management are described and implemented as an own function with defined processes.	Planning and controlling tasks of category management are applied as described and are integrated into the operative controlling processes of the business unit.
45	Measurement Controlling Process	Is there a structured procedure for controlling measures/actions/activities?		Result relevant measures are hardly tracked.	Measures are tracked regularly.	Measures are regularly tracked by the degree of implementation systematic or similar. IT support.	All measures are systematically tracked based on their impact on business results. Supervision of measurement implementation by business unit management.

	Process Stage	Questions for Analysis	% observed	Stage 1 (0%-25%)	Stage 2 (26%-50%)	Stage 3 (51%-75%)	Stage 4 (76%-100%)
SC3		Taking corrective actions					
46	Target Controlling Process	How are deviations from plan handled?		Target-/Actual-comparisons are unregularly applied.	Target-/Actual-comparisons are regularly applied. Necessary correction measures initiated partially.	Target-/Actual-comparisons are applied on the basis of regular strategy review meetings with purchasing management. Correction measures are consequently implemented.	Target-/Actual comparisons are applied on the basis of regular strategy review meetings with cross functional stakeholders. Correction measures are consequently implemented.
47	Root-Cause Analysis	Is root-cause analysis conducted to identify causes for deviations from the strategy?		Root-cause analysis is not applied.	Root-cause analysis is unregularly applied by the responsible category manager to identify causes for deviation.	A process ensures that root-cause analysis is immediately applied by category managers in case of deviations and causes are documented.	A process regulates that root-cause analysis is applied. Cross-functional partners are involved in the analysis and causes are documented.
48	Strategy Revision	Are strategies revised in case of deviations to ensure whether they are still appropriate?		Strategies are not revised in case of deviations.	Category managers revises strategies in case of significant deviations from the plan.	A process ensures that deviations are addressed and strategies are revised in case of environmental changes.	A process ensures that deviations are addressed and strategy are revised. Cross-functional partners are involved in strategy revision and approval process for changes is existent.

Appendix B – Benefits and Links to Literature

Table 11 Benefits of Category Strategy Development and their links to theory

Element in Theory	Element in Practice	Case/ Interviewee		Reference to category management literature
Economic Benefits				
Reduction of purchase prices	The prices for the category detectors could be reduced through application of linear performance pricing analysis that identified overvalued prices based on a price-performance analysis.	*1*	*A1*	See Ak et al. (2015), p. 216; Kauppi et al. (2013), p. 844; O'Brien (2015), p. 31
	The portfolio from the category controllers could be standardized in collaboration with the strategic supplier from twelve to five controllers with the similar function to achieve savings of approximately ten percent.	*1*	*A1*	See Ak et al. (2015), p. 216; Kauppi et al. (2013), p. 844; O'Brien (2015), p. 31
	The company has exploited a web-based auction platform that in the past has led to significant cost savings for different purchase categories.	*3*	*C1*	See Ak et al. (2015), p. 216; Kauppi et al. (2013), p. 844; O'Brien (2015), p. 31
	The category manager has achieved price savings for ventilators through long-term framework contracts with fixed-call off quantities.	*4*	*D1*	See Ak et al. (2015), p. 216; Kauppi et al. (2013), p. 844; O'Brien (2015), p. 31
	For the category pressure gauges the prices could be reduced and the payment terms could be increased through an auction where three suppliers have participated.	4	D1	See Ak et al. (2015), p. 216; Kauppi et al. (2013), p. 844; O'Brien (2015), p. 31
	Through standardization of raw materials for the category plastics the material price could be reduced.	5	E1	See Ak et al. (2015), p. 216; Kauppi et al. (2013), p. 844; O'Brien (2015), p. 31
	Global demand synchronization of licenses has led to a price reduction for an office management software.	6	F1	See Ak et al. (2015), p. 216; Kauppi et al. (2013), p. 844; O'Brien (2015), p. 31
Volume Bundling	The product portfolio of the category controllers could be consolidated to a strategic supplier of the purchase category to bundle volume and achieve price reductions.	*1*	*A1*	See Bozarth (1998), p. 244; Grajczyk (2015), p. 3
	The company synchronized global demands for transport packaging to a global supplier to achieve cost savings on corporate basis.	*2*	*B1*	See Bozarth (1998), p. 244; Grajczyk (2015), p. 3
	In advance of web-based auctions global demand analysis has been conducted in order to bundle global demand for purchase categories.	*3*	*C1*	See Bozarth (1998), p. 244; Grajczyk (2015), p. 3
	The category manager has consolidated the purchase volume for pipes and valves to a wholesaler and has received higher price discounts.	4	D1	See Bozarth (1998), p. 244; Grajczyk (2015), p. 3
	The category manager has achieved price savings for ventilators through long-term framework contracts with fixed-call off quantities.	4	D1	See Bozarth (1998), p. 244; Grajczyk (2015), p. 3
	For all categories volume bundling across the group of businesses has been enabled through	5	E1	See Bozarth (1998), p. 244; Grajczyk (2015), p. 3

Element in Theory	Element in Practice	Case/ Interviewee		Reference to category management literature
	the introduction of an online procurement system.			
	For the category software licenses a price reduction could be achieved through demand synchronization and bundling of global operations.	6	F1	See Bozarth (1998), p. 244; Grajczyk (2015), p. 3
Reduction of total cost	The company experienced cost reduction as the result of optimization of production processes.	*2*	*B1*	See Ak et al. (2015), p. 216; O'Brien (2015), p. 68
	As part of the strategy the company has negotiated longer payment terms and implemented logistic models to reduce capital commitment and capital tie-up.	*3*	*C1*	See Ak et al. (2015), p. 216; O'Brien (2015), p. 68
	The reduction of negotiation costs as the result of long-term contracting.	*6*	*F1*	See Ak et al. (2015), p. 216; O'Brien (2015), p. 68
Mitigating price increases	The company notices several economic benefits such as cost savings, cost reduction and cost avoidance.	*1*	*A1*	See O'Brien (2015), p. 31
Increase of sales performance	For the category controllers the sales performance could be improved as the result of optimization of the category portfolio.	*1*	*A1*	-
Technology and Innovation Benefits				
Standardization	The portfolio from the category controllers could be standardized in collaboration with the strategic supplier from twelve to five controllers with the similar function to achieve savings of approximately ten percent.	*1*	*A1*	See Eßig and Wagner (2003), p. 290
	Raw materials (e.g. resins, polymers) used for production of products have been consolidated across the group of global businesses.	*5*	*E1*	See Eßig and Wagner (2003), p. 290
Technological Expertise of purchasing staff	Value management has analysed the supplier portfolio for the category controllers for manufacturing techniques used and could propose a more cost-efficient manufacturing process.	*1*	*A1*	See Grajczyk (2015), p. 2
	The company has increased knowledge and transparency towards markets, market trends and technological trends as the result of external analysis.	*3*	*C1*	See Grajczyk (2015), p. 2
Improving the involvement of suppliers in designing new products/services	For the category printed circuit boards actions have been defined together with the category team to integrate strategic suppliers earlier into new product development.	*1*	*A1*	See Ak et al. (2015), p. 216
Access to supplier innovation	The organization has experienced higher access to supplier innovations and input from suppliers in the new product development processes.	*2*	*B2*	-
Product optimization Product optimization	The portfolio of controllers could be optimized in collaboration with R&D, project management and the strategic supplier for the purchase category.	*1*	*A1*	-
	The company could optimize its own product portfolio by technology scouting of RFID technology for different products.	*5*	*E1*	-

Element in Theory	Element in Practice	Case/ Interviewee		Reference to category management literature
Operational Benefits				
Increased transparency and knowledge of supply market	From supply market research activities, the company notices increased transparency of different actors within a supply market.	*3*	*C1*	See Grajczyk (2015), p. 67
Reduction of logistical cost and transportation routes complexity	As part of the strategy the company has negotiated longer payment terms and implemented logistic models to reduce capital commitment and capital tie-up.	*3*	*C1*	See Bozarth (1998), p. 244; (Grajczyk, 2015), p. 237
	The stock levels and capital commitment could be reduced through a close collaboration with suppliers and the implementation of a Kanban-system where the supplier regularly refilled boxes.	*4*	*D1*	See Bozarth (1998), p. 244; (Grajczyk, 2015), p. 237
Improved coordination and quality	The logistics and quality performance of all categories could be improvement as quantitative targets have been defined for the supplier portfolio.	*1*	*A1*	See Ak et al. (2015), p. 2
	The organization experienced improved utilization of machines and lower scrap rates.	*2*	*B1*	See Ak et al. (2015), p. 2
	The company experienced higher supplier quality with less defects.	*2*	*B1*	See Ak et al. (2015), p. 2
	As part of the strategy the company has negotiated longer payment terms and implemented logistic models to reduce capital commitment and capital tie-up.	*3*	*C1*	See Ak et al. (2015), p. 2
Reduced lead time	As the result of stakeholder interviews and a joint workshop with the suppliers the lead time could be reduced from 30 to 7 days for the category calibration gases.	*1*	*A1*	See Bozarth (1998), p. 244
Transparency of spend	The implementation of an online procurement system has increased data quality and transparency of spend for category managers.	*5*	*E1*	See Jonathan (2015), p. 69
Improving effectiveness and efficiency of purchasing processes	As the result of category management, the company has experienced a higher degree of delivery reliability.	*2*	*B1*	See Grajczyk (2015), p. 3; O'Brien (2015), p. 68
	The suppliers know the company´s processes, our people and our products.	*4*	*D1*	See Grajczyk (2015), p. 3; O'Brien (2015), p. 68
	The implementation of an online procurement system has increased the efficiency of purchasing processes across all categories and decreased the level of maverick buying activities.	*5*	*E1*	See Grajczyk (2015), p. 3; O'Brien (2015), p. 68
Reducing supply chain risk	Due to a dependency on a supplier with regular capacity constraints for the category cabinets the company extended the supply base in order to reduce the risk of bottleneck situations.	*4*	*D1*	See O'Brien (2015), p. 69
Supply base optimization	The company has noticed supply base optimization as benefit from supplier development activities and supply market research to identify potential attractive suppliers.	*3*	*C1*	-
Increased speed for decision-making	The company has experienced quicker decision making as the result of the existence of a strategy indicating a clear path for the future.	*3*	*C1*	-

Element in Theory	Element in Practice	Case/ Interviewee		Reference to category management literature
Supply market focus	The focus shifts from supplier management to managing supply markets.	*4*	*D1*	-
Adherence to safety policies and contracts	Operational performance of suppliers has increased showed in a reduction of the number of infringements, a reduction of total incident rates and an increase in the contract coverage for certain categories.	*5*	*E1*	-
Interaction Benefits				
Increased cross-functional collaboration	The company experiences an increased degree of collaboration within the purchasing organization and experiences better teamwork in the customer organization.	*2*	*B1*	See Jonathan (2015), p. 70
Fewer suppliers	The number of suppliers for the category PCBA´s could be reduced to two strategic suppliers.	*1*	*A1*	See Bozarth (1998), p. 244
Preferential capacity and resources allocation	In new development projects for the category PCBA´s the supplier allocates additional resources and supports to reach target dates and milestones of these projects.	*1*	*A1*	See Bozarth (1998), p. 244
	For the category heating components, the supplier agreed to send two engineers free of charge to quickly solve a quality problem.	*4*	*D1*	See Bozarth (1998), p. 244
	The company has achieved preferential access to cloud storage capacity as the result of consortium purchases with a competitor.	*6*	*H1*	See Bozarth (1998), p. 244
Build up key-accounts	The supplier relationship has been improved and the supplier built up a key account management function for the buyer.	*1*	*A1*	-
Increased level of communication	Category strategy development leads to an increased level of communication with stakeholders.	*1*	*A1*	-
Increased integration	The company experiences increased integration with suppliers showed by willingness to share innovation, willingness to engage in product or process optimization or simply integration in the ERP-system via EDI-connection.	*2*	*B1*	-
Reduced dependency	For the category plastics the dependency on certain suppliers could be reduced through standardization of raw materials.	*5*	*E1*	-
Increased commitment	Category strategy development increases the degree of teamwork and the commitment of individuals to targets defined.	*5*	*E1*	-

Appendix C – Semi-Structured Questionnaire

Confidential Information

Appendix D– Maturity Assessments Category Strategy Development

Confidential Information

Appendix E – Field Notes and Document Analysis Strategy tools

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Appendix F – Transcripts Benefits and Respondent Characteristics

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Appendix G– Analysis of Maturity Assessments

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