

Delphi Study Survey Report

1. Introduction

This survey is about recognizing patterns in the way Small and Medium Enterprises¹ (SMEs) organize their procurement activities. The scope of the survey is limited to the key commodities of the SME. A key commodity is defined as the purchased product or service group which is essential for realizing the value proposition for the customers of the SME.

Prior outcome of our research indicated the existence of four procurement oriented patterns in SMEs. The table below shows four examples of these patterns.

Procurement Oriented Pattern Code	Focal company	Value proposition of the focal company	Purchased key commodity
P1	ICT turn-key designer	ICT Design and assembly of offices on a high quality level at a reasonable price. Operational excellence: standardization in commodities, low transaction costs internally and externally	Standard ICT software and hardware
P2	Horse shoes manufacturer	Standard horse shoes assortment at reasonable prices in a competitive environment	Standard quality iron, reliable delivery
P3	IT innovation driven company	Developing innovative software made applicable for practical usage in devices at a reasonable price	Delivering applicable solutions on the bases of regular soft- and hardware, to enable the companies' innovative software function in practice
P4	designer and manufacturer of trailers	Designing and manufacturing trailers tailor made for specific requirements of customers	Designing and manufacturing axles which align to the specific trailer wishes of the customer of the focal company.

This Delphi study is part of a research program which aims at developing supporting instruments for SMEs to strengthen their purchasing² oriented activities in relation to their customer value proposition. The first steps in the research program include the identification of procurement oriented patterns (POP) as a basis for developing supporting instruments. A POP is defined as an organized collection of activities which effectuates the value proposition to customers, the procurement activities and the connection between these activities, all belonging to an identifiable pattern.(Hagelaar et al (2014))

¹ Small and medium-sized enterprises (SMEs) are enterprises which employ between 10 and 250 persons and which have an annual turnover not exceeding 50 million euro, and/or an annual balance sheet total not exceeding 43 million euro.

² In this paper purchasing and procurement are used as synonyms.

In summary the respondents were asked the following :

- a. Do you recognize these patterns in reality or literature?
- b. Which pattern strengths and weaknesses do you see?
- c. Are the patterns described adequately?
- d. Do you miss certain patterns?

2. Delphi study methodology and process

This research was designed for evaluating a conceptual model for empirically found procurement activity patterns in SME's. Delphi Studies³ can be applied for theory evaluation and development.

The following evaluation criteria are derived from theory testing practices: completeness, correctness, conciseness and clarity. Completeness evaluation focuses on finding missing relevant factors in a conceptual model. Correctness evaluation is done by trying to identify elements which were wrongly included in the conceptual model. Conciseness by evaluating whether the model contained unnecessary or useless elements. And finally clarity evaluation refers to clear and precise definitions for constructs & variables, relations between them and theory boundaries.

The procurement activity patterns which resulted from descriptive research are not considered a theory. It was tested whether the patterns described reality in an adequate way according to the experience of the panel members.

The outcome of the Delphi study represents the outcome of a guided group think process of selected experts. The panel is not considered as a statistical sample of a population. So the outcomes do not represent the opinion of a larger population. (reference).

Finding quality experts is a prerequisite for running a good Delphi Study. To compose the expert long list we have decided for an international scope, since the initial literature study in the research program showed that local Dutch expertise is limited.

We have partly used best practice guidelines for finding relevant experts, see Okoli & Pawlowski (2004) and Delbecq et al. (1975) . This long list was created by naming own contacts and listing organizations and literature as sources for finding experts. We have decided to use a mixed panel with academics and consultants who have seen or studied multiple SME's which have enabled them to evaluate whether purchase patterns and the conceptual model developed in the research program represent reality in a proper way. We have intended to rank the experts according to their years of experience with SME's. For academics the length of their SME experience is concluded from the dates of their publications. However due to the difficulty to have experts participating in the study this intended ranking did not pay off in the composition of the expert panel.

³ Chitu Okoli, Suzanne D. Pawlowski, The Delphi method as a research tool: an example, design considerations and applications, *Information & Management*, Volume 42, Issue 1, December 2004, Pages 15-29, ISSN 0378-7206, <http://dx.doi.org/10.1016/j.im.2003.11.002>.

Furthermore we have allowed to include Phd scholars in case peer academics advised to include them as experts in the study.

We have set the lower limit for the panel size on 10 and the upper limit on 18 experts (Okoli & Pawlowski ,2004 , p.20). We succeeded in getting 10 experts in panel. We have opted for a mixed single panel with academics and practitioners to allow for fruitful group think based on multiple perspectives. We have planned for maximum three Delphi iterations. The second iteration was meant to confront the panel members with the responses from the first round and to collect new insights based on these. The third round intended to arrive at conclusions from the study. This could be a clear consensus or clear differences in opinions on the respective matters. Due to the fact that 3 of the 10 experts wanted to withdraw from the panel during round 2 and because the experienced complexity of the survey would possibly limit the usefulness of a third round, we have decided to limit this Delphi Study to 2 rounds. With the end in sight all 10 experts finalized round 2 of the study.

The individual contribution of each expert to the Delphi Study was anonymous to other participants, but not anonymous to the research team. The data set refers to the individuals by naming them "X1" thru "X10".

Delphi study responses were analyzed and processes by the research team consisting of 4 persons. The questionnaires contained questions to let the experts explain their answers. When explanations needed clarifications we have contacted the experts between the iterations, to enable proper feedback to the panel.

3. Summary of survey contents

a. Pattern recognition

The 2 surveys of Delphi Study contained visualizations⁴ of four purchase oriented patterns which were presented. (see appendix 1 and 2) The texts in the green columns represented the proposed patterns. Behind the first pattern a legend was presented explaining the used terminology. Each pattern description starts with information on the SME's type of value proposition and the parties who are involved in designing the value proposition. This is followed by characteristics of the processes for procuring key commodities. Moreover information is given on who has the lead in procurement activities in the focal company; on the stability of the supplier base and on the purchase conditions and the frequency of (re)negotiations of these.

The respondents were asked whether they recognize the pattern as a pattern which they have observed in reality or read about in literature.

b. Perceived strengths or weaknesses.

Respondents were asked which strengths or weaknesses they see in the proposed pattern in contributing to the value proposition of the focal company.

c. Adequacy of the pattern descriptions.

⁴ The visualization is based on an idea found on The Periodic Table of Visualization Methods. See http://www.visual-literacy.org/periodic_table/periodic_table.html , Cell Parameter ruler (Pr).

The surveys contained a table explaining the variables and values for the pattern descriptions. (see appendix 1 and 2). Respondents were asked whether they think that the variables and / or values should be worded differently or deleted. Moreover it was asked whether they miss variables and /or values. In Round 1 of the Delphi Study respondents suggested to include additional variables. This led to the inclusion of additional questions in Round 2 of the Delphi Study. Covering the following variables which could change procurement activities in practice:

- introduction and use of (advanced) information systems
- purchase intelligence
- the type of purchased key product or key service (re-sale or use as raw material).

d. Missing patterns

The first round of the Delphi study had a question on missing patterns. In the second round additional questions were introduced asking whether respondents have observed typical variants of the presented patterns or have read about it in literature. This included a question to mention a variant description providing the type of business, value proposition, key purchased commodity and a label for the pattern variant.

4. Results and Findings

Appendix 1 and appendix 2 contain the detailed surveys and answers of the two Delphi Study rounds. In the remainder of this chapter you will find a summary of the results and findings.

a. Pattern recognition

Summary of survey results (round 2):

<i>I recognize pattern P1,P2,P3,P4 as a pattern which I have observed in reality or read in literature.</i> (round 2 survey Questions 6, 11, 16 and 21)						
	strongly disagree	disagree	neither agree nor disagree	agree	strongly agree	
pattern 1	0	1	5	3	1	
pattern 2	0	2	3	4	1	
pattern 3	0	3	2	5	0	
pattern 4	0	2	2	5	1	

Findings:

For each pattern there are respondents who disagree or neither agree nor disagree with the statement. On the other hand for each pattern there are respondents who agree or strongly agree with the statement. It seems that respondents have interpreted the question differently. Some seem

to have agreed with the statement when they have encountered such a situation a single time. Others have agreed when they have recognized it as a recurring pattern. One could hypothesize that a pattern does not exist in practice when none of the respondents agree or strongly agree. But this is not the case. So the data does indicate that patterns 1,2,3 and 4 exist in practice.

On the other hand the occurrence of disagree plus N.agree/N. Disagree, (respectively 6x, 5x, 5x and 4x) raises the question whether this indicates the non-existence of the patterns. When considering this one should pay attention to the following: .

- Some respondents have reported that they found the Delphi Study quite complex.
- When somebody answers "Disagree" or "Neither agree Nor disagree" this does not mean that the respondent states that the pattern does not exist. The respondent just answers the question whether he or she recognizes the pattern. Which is a different thing than denying that it exists.

So the occurrence of disagree plus N.agree/N. Disagree, (respectively 6x, 5x, 5x and 4x), could also indicate that some experts have expertise on some type of SMEs/POPs and not on other types. See for example the answers on question 7 in Round 2, where respondent X9 states "This pattern is identified in literature and is observed in many SME's" whereas X10 says "Not applicable / recognizable for me."

b. Adequacy of the pattern descriptions.

Summary of survey results (round 2, question 1):

Question 1 : The introduction and use of (advanced) information systems, fundamentally changes procurement activities in practice. Not only the activities are carried out in a different way or at an improved level but also the type of activities are fundamentally different.
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7 Out of 10 respondents agree that the use of information systems impacts procurement activity patterns. Motivations for this included the following remarks:

"provides visibility and control"

"imposes discipline in the organization, that is often weak or non-existent with more manual approaches"
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"IT is an enabler and innovator"

Findings:

So there seems to be good reasons to include this variable in the procurement activity pattern model. However as one respondent argued : "But will SME' s have the money and capabilities to implement such systems?"

Summary of survey results (round 2, question 2):

Question 2 : Purchase Intelligence fundamentally changes procurement activities in practice. Not only the activities are carried out in a different way or at an improved level but also the type of activities are fundamentally different.
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6 respondents agree or strongly agree with this statement. However purchase intelligence is no
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clear concept and is not interpreted equally among the respondents as can be concluded from the sub question where respondents are asked to define the term purchase intelligence. Moreover this concept seems to have an overlap with the concept "use of information systems" as a respondent indicated. One respondent states that purchase intelligence might be no theme for SMEs.

Findings:

This leads to the suggestion not to include the concept "purchase intelligence" in the pattern model.

Summary of survey results (round 2, question 3):

Question 3 : The type of purchased key product or key service (re-sale or use as raw material) fundamentally changes procurement activities in practice.
Not only the activities are carried out in a different way or at an improved level but also the type of activities are fundamentally different.

6 respondents agree with this statement. One respondent remarks that differences can also be seen between products and services procurement. He states that products are easier to understand and that services are more abstract and harder to determine, which makes that other (procurement) techniques have to be used.

Another respondent states that "the cost impact and technical complexity determine the importance and role of the purchasing function".

Findings:

These responses may discover the need to typify the key commodities in the further research of SME procurement activity patterns.

Summary of survey result

Summary of survey results (round 2, question 4):

Question 4 : In the tables where the patterns are described I think the that following variables and / or values should be worded differently or deleted.

The Procurement activity pattern model gets support by all respondents. In round 1 many respondents gave input to the model, which were all processed and led to many changes / refinements.

In Round 2 for one respondent the phrase "buying frequency" in the pattern model is ambiguous ("buying = sourcing or call off").

Findings :

After interpreting the results of the second round the following legend table was drawn. The table describes the proposed resulting model. Changes, compared to the one used in the second DS round, are written in **Bold**.)

Variable	Values	Explanation
Value proposition	Customer Intimacy	The three possible strategies to create customer value and competitive advantages, based on Treacy and Wiersema (1993).
	Operational Excellence	
	Product Leadership	

Variable	Values	Explanation
Value proposition design	By the focal company alone	This shows which parties have to contribute to the design of the value proposition. So this relates only to those elements of the products / services which are key in creating the customer value and competitive advantage.
	By focal company and supplier	
	By the focal company and customer	
	By focal company, customer, and supplier	
Additional third parties involved in value proposition design	Supplying design knowledge	Third parties could be: consultants, facilitators, competitors, academia, research institutions, industry bodies, government bodies, purchase and supply chain institutes, other suppliers. Most of these can be labeled as knowledge partners. Competitors can be in a passive role when the focal company copies a design.
	Supplying project management services	
	Facilitating networking between the focal company and other parties	
	Acting in multiple of the previous roles	
	Other	
	No third parties involved	
Purchased product commodity type	Commercially available products	This relates to the level of specificity of supplier's added value.
	Tailor made products based on Commercially available components	
	Tailor made specific products	
	none	
Purchased service commodity type	Commercially available services	This relates also to the level of specificity of supplier's added value.
	tailor made services based on Commercially available service components	
	tailor made specific services	
	none	
Purchase order process characteristics. Preparation. (This refers to preparation activities prior to the actual ordering of products / services)	Repeating process with no specific features.	For example an activity where the focal company registers itself at a website of a supplier to prepare itself for ordering products via this website later.
	Repeating process based on a checklist with specific activities.	Preparing for doing business with this supplier involves activities that are selected from a prepared list on paper or another medium like a computer.
	Unique process. Value proposition requirements are fulfilled by applying supplier know how.	For example the situation where a supplier advises the focal company which standard components would fulfill the customer requirements.
	Unique process. Value proposition requirements are fulfilled by applying supplier & focal company know how.	In this situation supplier and focal company have to mutually adjust their preparation activities for a specific customer order.
Purchase order process characteristics. Execution. (This refers to executing the supply chain where the actual ordering of the products/services takes place)	Repeating process with no specific features.	Standardized ordering process without the need for additional human interaction.

Variable	Values	Explanation
	Repeating process based on a checklist with specific purchase items.	The checklist can be a prepared list on paper or other medium like a computer. Standardized ordering process without the need for additional human interaction.
	Unique process which is based on supplier know how and specific product design requirements.	Example: Once the product or service specification is known, the related purchase ordering process requires unique activities. Supplier know how on these activities is key to be successful.
	Unique process which is based on supplier & focal company know how and specific product design requirements.	Example: Once the product or service specification is known, the related purchase ordering process requires unique activities. Supplier and focal company know how on these activities are key to be successful.
Who leads purchase activities for the key commodity? (for this item you will find two rows in the figure : preparation and execution)	Dedicated purchase employee	This refers to an employee who formally has purchase as its main task and has professional purchasing skills, mostly acquired by formal purchase education.
	Other employee with related external contacts, skills or interest	Employee with skills refers for example to an engineer who designed the product based on customer requirements. His related skill, is the precise knowledge of the product specifications which is also needed in the procurement process. Interest could also be a “family interest ” so the other employee can be a relative/partner of the owner.
	SME owner	For example a SME owner who leads frequent price renegotiations with the supplier to ensure profitability of the focal company.
	Any employee who has time could be in the lead	Available time seems to be the only consideration to assign a purchase activity to an employee.
Purchase conditions	Never negotiated	The focal company just accepts the price and other conditions as set by the supplier(s). This might be caused by neglecting negotiations or by any other cause such as the competitive nature of the supplier market which drives favorable conditions.
	Once negotiated and Never re-negotiated	
	Sometimes renegotiated	
	Frequent renegotiations	
Supplier base stability for key commodity	A dynamic supplier market forces the focal company to switch from key supplier regularly	Supplier switches in this case are for example driven by the fact that suppliers appear and disappear regularly. For example because new technologies replace outdated technologies in the value proposition.
	The focal company keeps a single supplier	For example : The company has a long lasting relationship with a single supplier even though competitors could replace this supplier.
	the focal company keeps a few suppliers with no or low switching costs	For example : The company keeps more than 1 similar supplier to ensure high product availability levels.
	regular intended supplier switches to get better deals	The focal company is actively monitoring better procurement alternatives and switches from suppliers regularly to have better purchasing conditions.
Buying frequency for key commodity	High frequency	
	More than once & low frequency	
	One time buy	

Variable	Values	Explanation
Use of information systems	(values to be developed)	
Purchased key product or key service (re-sale or use as raw material)	Is used for re-sale	The purchased key product or service is delivered to the customer of the focal company and is not used as raw material.
	Used as raw material	The purchased key commodity is used as raw material in product or service and it is delivered to the customer of the focal company.
	<i>(comment : No value was introduced for products or services that are for internal usage only and thus no part of the delivery to the customer of the focal company. These are excluded since it is assumed that these are no key commodities. Thus these are outside the scope of this Delphi study)</i>	

c. Strengths and weaknesses

Summary of survey results (round 2, Questions 8, 13, 18, 23):

Question Questions 8, 13, 18, 23 : Which strengths or weaknesses do you see in these patterns in contributing to the value proposition of the focal company.
Respondents mention a wide variety of strengths and weaknesses.

Findings:

Respondents have mentioned a wide variety of strengths and weaknesses of the 4 patterns. This makes that it is not possible to summarize common views on the strength and weaknesses.

d. Missing patterns and pattern variants.

Summary of survey results (round 2, Questions 9, 14, 19, 24):

Question Questions 9, 14, 19, 24 : In SME's I have observed typical variants of this pattern or read about it in literature.
<p>The overview below includes the 4 patterns which were identified by the research teams (P1, P2, P3 and P 4) and the patterns mentioned by individual experts. (The code "P1X2" means Variant to Pattern 1 which was suggested by expert X2.)</p> <p>Sometimes respondents mentioned examples of certain patterns or variants but did not describe the pattern in detail, when answering questions 10, 15, 20 and 25. This causes some incompleteness in the table below, compared to the responses for questions 9,14,19 and 24.</p>

		Procurement Oriented Patterns									
		Quest. 10	Question 15				Q.20	Question 25			
Variable	Values	P1	P1X2	P2	P2X2	P2X4	P2X7	P3	P4	P4X2	P4X4

Value proposition	Customer Intimacy								x	x	x
	Operational Excellence	x		x		x	x				
	Product Leadership		x		x			x			
Value proposition design	By the focal company alone	x		x	x						
	By focal company and supplier		x			x	x	x	x	x	
	By the focal company and customer										
	By focal company, customer, and supplier										x
Additional third parties involved in value proposition design	Supplying design knowledge					x					
	Supplying project management services										
	Facilitating networking between the focal company and other parties		x								
	Acting in multiple of the previous roles				x						
	Other						x				
	No third parties involved	x									x
Purchased product commodity type	Commercially available products	x	x	x	x	x	x	x			
	Tailor made products based on Commercially available components										
	Tailor made specific products								x	x	x
	none										
Purchased service commodity type	Commercially available services						x				
	tailor made services based on Commercially available service components				x			x			
	tailor made specific services		x						x	x	
	none	x		x		x					x
Purchase order process characteristics. Preparation.											
							x				
(This refers to preparation activities prior to the actual ordering of products / services)	Repeating process with no specific features.										
	Repeating process based on a checklist with specific activities.	x		x	x	x					
	Unique process. Value proposition requirements are fulfilled by applying supplier know how.		x					x			x

	Unique process. Value proposition requirements are fulfilled by applying supplier & focal company know how.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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	The focal company keeps a single supplier		x	x	x		x		x	x	x
	the focal company keeps a few suppliers with no or low switching costs	x				x		x			
	regular intended supplier switches to get better deals										
Buying frequency for key commodity	High frequency	x		x	x	x	x	x			x
	More than once & low frequency								x	x	
	One time buy		x								

Findings:

Customer value proposition (CVP) and Customer value proposition design
<p>Pattern 4 is a customer intimacy (CI) patterns. The suggested pattern variant to this is also a CI pattern. Only one of the CI patterns includes involvement of the supplier and the customer in the Customer value proposition design activities.</p> <p>The research team proposed OE patterns both without supplier involvement in CVP design. The expert panel proposed an OE pattern which included supplier involvement in CVP design.</p> <p>For OE two patterns may exist : with and without supplier involvement in CVP Design.</p> <p>All CI patterns show use of supplier know how in CVP design and purchase order process preparation.</p>
Potential research questions for SME future research (PRQs):
<ol style="list-style-type: none"> 1. Can SMEs lower procurement transaction costs by involving customers in CVP design? 2. Which patterns exists in SME third party involvement for CVP design ?

Customer Value Proposition and purchased key commodity
<p>All OE and PL patterns make use of commercially available purchased products components.</p> <p>All CI patterns make use of tailor made specific products.</p> <p>All PL patterns include tailor made specific services or tailor made services based on commercially available service components.</p> <p>3 of the 4 OE patterns do not include purchased services as part of the CVP.</p>
PRQs:
<ol style="list-style-type: none"> 3. It is best practice that OE SMEs and PL SMEs use commercially available purchased product components as key component in their CVP. 4. It is best practice that PL SMEs include tailor made services in their CVP.

CVP and Purchase order process characteristics
<p>All CI patterns use supplier know how to prepare their purchase ordering process.</p> <p>All OE patterns apply repeating purchase order processes. As well for setting up the process as for execution. In most of these patterns checklists with specific activities items are used are used</p>
PRQs:
<ol style="list-style-type: none"> 5. In CI patterns SMEs should look for involvement of suppliers in purchase order process preparation to lower costs. 6. OE SMEs (should) maximize the use of repeating activities for purchase order process preparation and execution.

CVP & Lead in procurement activities
<p>In 5 out of the 6 CI and PL patterns initial procurement activities are led by "another employee with related external contacts, skills or interest"</p>
PRQs
<ol style="list-style-type: none"> 7. The lead in execution of procurement activities does not depend on the type of CVP. 8. Educational purchase institutes should not only target purchasers in SME for purchase education. They also should target other employees.

CVP and frequency of purchase conditions negotiations
All CI patterns have frequent purchase conditions negotiations. All PL patterns have "sometimes" as frequency for this.
PRQs:
9. The frequency of purchase conditions negotiations does not depend on the type of CVP.

CVP and supplier stability for the key purchased commodity
All CI patterns have a single supplier for the key commodity. All PL and OE patterns have a single supplier or few suppliers for the key commodity.
PRQs:
10. For SMEs no patterns exist with regular forced switches from suppliers for key commodities. 11. For SMEs no patterns exist with regular intended switches from suppliers for key commodities to get better deals.

CVP and buying frequency
All OE patterns have a high buying frequency. Two out of three CI patterns have a "greater than 1 but low frequency" Two out of three PL patterns have a high buying frequency.
PRQs:
12. For CI and PL patterns the buying frequency does not depend on the type of CVP. 13. For OE patterns the buying frequency is usually high.

Summary of survey results (round 2, Questions 25 26):

Question Questions 26 : In the list of the four procurement oriented patterns (POPs), I am missing one or more quite different patterns which I have seen in reality or literature.
Respondents answered "No" to this question.

Findings

Apart from the pattern variants mentioned by the respondents in the previous questions, no quite different patterns are missed by them. The suggested pattern variants in Round 2 were not presented anymore to the experts, since it was decided not to have a third round.

CHAPTER 3 CONCLUSIONS

Pattern recognition

About 50 % of the respondents recognized the four presented patterns from own experience and/or read literature. Respondents also suggested pattern variants. It is concluded that this Delphi study strengthens the view that these patterns exist in SMEs. Further research may include further empirical testing of these patterns and their variants.

Perceived strengths or weaknesses.

Respondents mentioned a wide variety of strengths and weaknesses of the patterns. No clear conclusions can be drawn from this data.

Adequacy of the pattern descriptions.

One of the outcomes of this Delphi study is an improved conceptual framework for describing procurement activity patterns. This framework can be used for collecting SME data in future research, for example by modifying the existing survey questions which are used in the WIM research program to describe SME procurement activities.

The improved model includes more variables and values than the initial model. Thus future research may lead to more detailed patterns descriptions.

Missing patterns and pattern variants

Apart from the suggested pattern variants, respondents do not miss patterns which are quite different from the four patterns suggested by the research team.

Methodological remarks

The Delphi study method did not allow for fast feedback on panel member contributions and fast group think processes. For the future it is advised to consider other methods in similar cases, for example the World Cafe method.

WIM DELPHI STUDY 1, SURVEY RESULTS, ROUND 1

11 march 2015

Dear members of the expert panel,

Thanks for your interesting answers and remarks in Round 1 of the Delphi Study. Below you will find the results of the survey.

10 respondents joined this survey.

As of question 3 we have indicated who gave the answers by coding all respondents from X1 - X10.

We have added the pictures with the patterns in a separate document. By opening this in a separate window it might be easy for you to handle during the reading of the survey results.

Question 1.

In the tables where the patterns are described I think the that following variables and / or values should be worded differently or deleted.

Question 2.

In the tables where the patterns are defined I am missing the following variables and values.

Summarized answers:

- a. Delete certain values for certain variables because they would not exist is SME practice.
- b. Use the size of SME's as segmentation criterion, rather than the customer value propositions Operational Excellence (OE), Customer Intimacy (CI) and Product Leadership (PL).
- c. Use *Status quo* as additional value next to OE, CI and PL.
- d. Use *Pricing/financial/payment model* as additional value next to OE, CI and PL.
- e. There are several possible third parties who can be actors in value proposition design. Third parties could be: consultants, facilitators, competitors, academia, research institutions, industry bodies, government bodies, purchase and supply chain institutes, other suppliers. Most of these can be labeled as knowledge partners. Competitors can be in a passive role when the focal company copies a design.
- f. Add *sometimes renegotiated* as value on the dimension *purchase conditions*.
- g. Add *buying frequency* and the *value relative to turn over* as factors influencing the buying approach, including the negotiation approach.
- h. One the crucial elements of the procurement/buying activity would be how much they (SMEs here) might spend, at least comparing to product and service perspectives. Although there is not an easy way to probe this; asking the importance level -perceived by SME owner- of the need and brand level of the product/service provider might help significantly.
- i. On *Supplier base stability for key commodity* a remark was made that this will vary across any organizations' supply chain, which may hinder the definition of this aspect.
- j. Replace the term *standard product or service* by *commercially available product or service*.
- k. Delete *none* as option to choose for *purchased commodity type*.
- l. Rephrase *Purchased knowledge or purchased service commodity type* to *Purchased service commodity type*.
- m. On *Purchase order process characteristics* several suggestions were made to include values implying the *level of information systems support* and *Purchase intelligence* - Usage of operational and external data to improve the process: big data, gut feeling, etc.

- n. Given the nature of the process and the fundamental change that takes place when you use a sophisticated software product to underpin it which in turn then demands behavioral change from within the buying organization to make it deliver as expected I think this is much more a new (maybe advanced) pattern that deserves separate identification / analysis.
- o. Another suggestion was to include the value : *Informal unwritten procedures for Purchase order process characteristics*.
- p. Replace *professional purchase employee* by *dedicated purchase employee*.
- q. Add the amount of time the purchaser has other duties besides purchasing.
- r. Include *Make or buy strategies* as dimension.
- s. Include *Cross functional /teamwork capabilities* as dimension.
- t. The survey might be explicit about if the purchases are either for internal usage (end-user) or to re-sell (sales inventory) or to manufacture a new product (raw material inventory). Based on that, patterns will have significant changes.
- u. Per pattern I'm missing the a general identification of the pattern, which reflects its nature. Subsequently I can properly decide whether the values for the following variables are correctly chosen.
- v. Per pattern I'm missing an example of the product or service purchased for a certain industry.
- w. This study is aimed at creating new supporting instruments for SME's. It is therefore interesting to assess the instruments currently used by SME's. For example: what procurement channels are being used now?

3. I recognize pattern 1 as a pattern which I have observed in reality or read in literature. (State one answer only)				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
0	3	2	3	2
		X10: Not applicable for our practice.	X1: It is a pattern for some but certainly not all SME's and may only represent part of their whole business operation from a purchasing perspective	
			X2: I have read it but not recognized in real life..	X8: With operational excellence comes high standardization and low costs, also in the purchasing process (Kraljic routine products)
				X3: Looks like raw material procurement case.

4. Pattern 1 clearly describes a pattern which I have observed in reality or literature.				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
0	3	2	4	1

X10: Not applicable for our practice.	X1: Same comment – question is worded poorly so making difference from Q3 is difficult	
	X2: Out of 12 customers I found one who pretend to be in that pattern but in reality the organization is stronger than the process and they mainly follow the market.	X8: See question 3
	X3: Could be an upper medium-sized company in manufacturing sector.	

5. Which strengths or weaknesses do you see in this pattern in contributing to the value proposition of the focal company.

X1	
Strengths:	Flexibility re supply options, ultimate decision maker involved
Weaknesses:	Assumes (wrongly in my view) that purchasing professionals can add no value to business
Strengths:	Own design,
Weaknesses:	Poor professionalism Procurement,
Strengths:	Lead is divided between preparation and execution. Four eyes principle is applicable.
Weaknesses:	Purchase order process is documented and executed as a routine.
	Value proposition design can't be by the focal company alone. Supply chain is not taken into account.
	Services are not taken into account. A lot of key commodities could be out of scope, e.g.
	machine and building maintenance, investments.
Strengths:	
Weaknesses:	Perhaps doesn't take into account the wider business environment (e.g. extra-firm organization / Triple-Helix organizations)
Strengths:	
Weaknesses:	It combines values that do not logically relate.
X7:	
Strengths:	Operational Excellence
Weaknesses:	Purchased order process or service commodity type none
X8:	
Strengths:	Standard product and standard process
Weaknesses:	Difference in product / service commodity type
X9:	
Strengths:	I think all of your models are fairly strong and worth empirically testing.
Weaknesses:	

6. I recognize pattern 2 as a pattern which I have observed in reality or read in literature. (State one answer only)

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
2	1	2	4	1
	X8: Strange that the SME owner is now in control (both for preparation and execution). What is the logic behind that?	X10: Not applicable for our practice.	X1: Again it is a trait that I have observed where the SME owner thinks they are best person to carry out almost all key activities inc. procurement ones	X9: The SME owner in many cases does the purchasing him/herself, or tightly controls the function.
			X2: SME often has a strong leader with personal relationships in the chain.	
			X3: Transactional/Trivial purchases like drinking water	
			X6: Only the very small SME's	

7. Pattern 2 clearly describes a pattern which I have observed in reality or literature.				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1	2	3	3	1
		X8: Strange that the SME owner is now in control (both for preparation and execution). What is the logic behind that?	X2: The frequent renegotiations are often "forgotten". The market becomes lazy	X9: See above
		X10: Not applicable for our practice.	X3: Could be a SOHO, small-sized company.	
			X6: Only the very small SME's	

Not answered with explanation : X1 Same comment as above – question needs better differentiation

8. Which strengths or weaknesses do you see in this pattern in contributing to the value proposition of the focal company.	
X1	Strengths: Flexibility re supply options, ultimate decision maker involved Weaknesses: Assumes (wrongly in my view) that purchasing professionals can add no value to business
X2	Strengths: Full interest of leaders in company. Weaknesses: Personnel is not able to improve.
X4 :	Strengths: Knowledge in one hand (SME Owner), looks to be a small enterprise. Weaknesses: Knowledge in one hand. If something bad happens to this person, the whole enterprise could be jeopardized. Processes are not documented, therefore there is no routine. Value proposition design can't be by the focal company alone. Supply chain is not taken into account. Services are not taken into account. A lot of key commodities could be out of scope, e.g. machine and building maintenance, investments.
X5:	Strengths: Weaknesses: Perhaps doesn't take into account the wider business environment (e.g. extra-firm organization / Triple-Helix organizations)
X6:	Strengths: Owner's commitment Weaknesses: Vulnerability
X7:	Strengths: Supplier base stability for key commodity single supplier Weaknesses: Who leads procurement preparation and Execution SME owner

X8:

Strengths:

Weaknesses: SME owner in the lead; focal company keeps single supplier

(Question 9 was missing in the survey. This was an error in the numbering of the survey questions. We apologize for that)

**10. I recognize pattern 3 as a pattern which I have observed in reality or read in literature.
(State one answer only)**

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
0	2	6	2	0
		X1: Here you are collecting a mix of 'traits' that certainly you could find organizations , depending on their business product or service, who will display some of pattern 3, maybe all for a single commercial offering but less likely across all the business.		
		X2: Could not find one out of experience.		
		X4: In the cases I have experienced, the execution of the purchase order process is at least regulated by a process checklist with purchasing features.		
		X9: Purchasing is usually closely controlled by the owner.		
		X10: Not applicable for our practice.		

11. Pattern 3 clearly describes a pattern which I have observed in reality or literature.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
0	2	7	1	0

X6: Innovation, collaboration are words I'm looking for.	X1. As before
	X4: It describes a pattern I have observed, but not clearly. This as commented in answer 10.
	X9: See above
	X10: Not applicable for our practice.

12. Which strengths or weaknesses do you see in this pattern in contributing to the value proposition of the focal company.

X1:	
Strengths:	May fit a specific product or service offering that needs this configuration of activities
Weaknesses:	Unlikely to fit most product / service offering as it is the least flexible.
X2 :	
Strengths:	Standardization
Weaknesses:	Too much focused on development and not improving current business.
X3:	
Strengths:	
Weaknesses:	Can't visualize much "once negotiated, never re-negotiated". It could be more project wise service procurement though, and if so, the first variable might not be "Product Leadership", or might be?
X4	
Strengths:	Key commodities seem to be controlled. Supplier risk is under control.
Weaknesses:	No professional procurement employee involved in the preparation process, although the pattern says that it concerns product leadership. Procurement activities done by anyone? Purchase conditions are not renegotiated regularly. Lack of structure.
X5:	
Strengths:	
Weaknesses:	Perhaps doesn't take into account the wider business environment (e.g. extra-firm organization / Triple-Helix organizations)
X7	
Strengths:	Value proposition by focal company and supplier
Weaknesses:	Who leads procurement activities Execution Any employee who has time could be in the lead
X8:	
Strengths:	working with supplier for value proposition
Weaknesses:	-

13. I recognize pattern 4 as a pattern which I have observed in reality or read in literature. (State one answer only)

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
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0	2	1	6	1
			X1: This pattern exists where there is a specific product / service offering that requires such a profile. Again it may not be present for all the organizations commercial offerings but fit a specific product or service which given single supplier status often has a resale element.	
			X2: In theory yes	
			X3: Could be an office property remodeling project, with scope creeps time to time, so negotiations are continuous.	
			X4: I would strongly agree in case the value proposition was operational excellence and the purchase order process preparation was done by a professional procurement employee. I have seen this in semiconductor industry, a supplier of wear and spare parts for aftermarket. Also the focal company was able to bring in the customer as for the value proposition design.	
			X9: This depends on the good/service being purchased. It can vary between industries.	
			X10: The pattern is recognizable. With the exception of the preparation and execution of procurement activities. Within SME organizations the preparations of the procurement activities are led by an employee with related skills, but the actual decision is made by the owner/general manager	

14. Pattern 4 clearly describes a pattern which I have observed in reality or literature.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
0	4	1	5	0
	X2: Not in real life combi because they		X1: Comments as before	

did not renegotiate...	
X10: As described in the answer to question 13.	X3: Typical medium-sized business
	X4: I don't strongly agree, because it describes a pattern that strongly looks like a pattern I saw in semiconductor branche.

15. Which strengths or weaknesses do you see in this pattern in contributing to the value proposition of the focal company.

X1:	
Strengths:	Very end product specific
Weaknesses:	Very end product specific
X4:	
Strengths:	Enterprise is very structured
Weaknesses:	Single sourcing strategy No strong professional procurement employee available. This doesn't fit in the rest of the pattern.
X5:	
Strengths:	
Weaknesses:	Perhaps doesn't take into account the wider business environment (e.g. extra-firm organization / Triple-Helix organizations)
X7:	
Strengths:	Value Proposition Customer intimacy
Weaknesses:	Purchase conditions frequent renegotiations
X8:	
Strengths:	
Weaknesses:	Value proposition design not with customer?
X10:	
Strengths:	Pattern 4 seems to be particularly applicable to high-quality personalized products and/or services. Therefor this pattern, or the product and/or service, should add a high value to the proposition of the focal company.
Weaknesses:	Only applicable to customers / situations for which it initially was intended.

16. In the list of the four procurement oriented patterns (POPs), I am missing one or more quite different patterns which I have seen in reality or literature.

Yes	No	Unanswered
4	4	2

17. Please describe the missing patterns when you answered Yes to question 16.

		Missing patterns			
		X1	X2	X4	X7
Variable	Values	"X"			
Value proposition	Customer Intimacy	X		x	x
	Operational Excellence				
	Product Leadership		x		
Value proposition design	By the focal company alone				
	By focal company and supplier				x
	By the focal company and customer	X		x	
	By focal company, customer, and supplier		X With cooperation in teams		
Purchased product commodity type	Standard products				
	Tailor made products based on standard components	X			x
	Tailor made specific products		x	x	
	none				
Purchased knowledge or purchased service commodity type	Standard services	X		x	
	tailor made services based on standard components	X	x		x
	tailor made specific services	X			
	none				
Purchase order process characteristics. Preparation. (This refers to preparation activities prior to the actual ordering of products / services)	Repeating process with no specific features.				
	Repeating process based on a checklist with specific activities.	X		x	
	Unique process. Value proposition requirements are fulfilled by applying supplier know how.				x
	Unique process. Value proposition requirements are fulfilled by applying supplier & focal company know how.				
Purchase order process characteristics. Execution. (This refers to executing the supply chain where the actual ordering of the products/services takes place)	Repeating process with no specific features.				
	Repeating process based on a checklist with specific purchase items.	X		x	

		Missing patterns			
		X1	X2	X4	X7
Variable	Values	"X"			
	Unique process which is based on supplier know how and specific product design requirements.				x
	Unique process which is based on supplier & focal company know how and specific product design requirements.				
Who leads purchase activities for the key commodity? Preparation	Professional purchase employee			x	x
	Other employee with related skills or interest	X			
	SME owner				
	Any employee who has time could be in the lead				
Who leads purchase activities for the key commodity? Execution	Professional purchase employee			X Same as preparation in smaller companies between 75 and 125 FTE. No purchase dept. exists.	x
	Other employee with related skills or interest	X			
	SME owner				
	Any employee who has time could be in the lead				
Purchase conditions	never negotiated			x	
	Once negotiated and never re-negotiated				
	frequent renegotiations	X			x
Supplier base stability for key commodity	A dynamic supplier market forces the focal company to switch from key supplier regularly				
	The focal company keeps a single supplier				x
	the focal company keeps a few suppliers with no or low switching costs	X		x	
	regular intended supplier switches to get better deals				
<p>Additional remarks :</p> <p>X4: Reflecting a company that is in the middle of your scope of 10-250 FTE. It is my personal opinion the companies with more than 75 FTE start developing the purchasing function. Companies with over 150 FTE develop a purchasing department and get to a more mature environment for purchasers. It still indicates that the purchasing function is develops later as other functions within a business, e.g. a financial dept., sales dept., logistics dept. etcetera. The need for these kind of functions seem to be much more important for short term stability of the company.</p> <p>X6: Design to build SME's. Products differ, relations with clients and supplier are stable (under the assumption that innovation, solutions and quality are delivered)</p>					

APPENDIX 2

Data - Delphi Study ROUND 2 - Survey questions and answers

Date July 10, 2015

QUESTION 1

The introduction and use of (advanced) information systems, fundamentally changes procurement activities in practice.
Not only the activities are carried out in a different way or at an improved level but also the type of activities are fundamentally different.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
0	3	0	7	0

The respondents who agreed gave the following comments:

- Respondent X1:
Why: They provide visibility and control throughout the organization of most of the key steps in the purchase to pay process as well as contract management and tender execution.
How: It imposes disciplines in the organization ie stakeholder compliance that often is weak or non-existent with more manual approaches.
- X2:
Why: the comparison with expectations and results will improve next steps
How: set a goal and use patterns to support the activities. The guided process is recognizable for participants.
- X3:
Why: Information changes everything in one way or another.
How: This may help to create a useful activity that was not a possibility -from technical stand point- before.
- X6:
Why: Other markets become within reach. How: IT changes traditional supply chains in markets
- X8:
Why: IT is an enabler and innovater.
How: How: E.g. by round trip purchasing, new capabilities (e.g. digital reverse auctioning)
- X9:
Why: Information systems such as SAP can greatly impact purchasing activities. But will SME's have the money and capability to implement such systems?
- X10:
Why: An advanced information system can fundamentally change procurement activities in practice because it helps the users to get structure in the procurement process
How: However, it is very important to make sure that the system isn't only used "because", people should be trained deeply to understand how the system will help the users to understand the purpose.

Those who disagreed mentioned:

- X4: It possibly changes the procurement activities in some cases because elements of the information system may never occurred to the user. However the knowledge will not increase because of a system. In most cases the user will implement the system the way he/she was operating before the system was implemented.
- X5: In some cases, the use of information systems replicates the paper based activities, but just by replacing them with electronic versions that do the same thing. However more evolved information systems e.g. buyer auctions, may change the process as well as the delivery method (so in this case there's interactions and multiple bids as well as change from paper based to IT enabled steps).
- X7: I think has limited influence on the procurement activities

QUESTION 2

Purchase Intelligence fundamentally changes procurement activities in practice. Not only the activities are carried out in a different way or at an improved level but also the type of activities are fundamentally different.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
0	1	3	4	2

The respondent who strongly agree gave the following comments:

- X1:
Why: Knowledge is king!!
How: Understanding who you spend money with is the basis for all savings related initiatives. All purchasing professionals have savings targets and so a fundamental need to develop successful sourcing strategy.
- X2:
Why: More knowledge leads to improved decisions
How: E.g. by improved purchase forecasting.

Those who agreed

- X2:
Why: a clever approach based on common knowledge brings a next step in developing your acts.
How: e-tendering creates an extra level.
- X3:
Why: as stated above
- X6:
Why: Leads to better and other decision making.
How: Availability of more and more accurate data (i.e. supplier performance)
- X9:
Why: As a whole I agree with this for organizations. But for SME's will they be focused on purchase intelligence? Will SME survey recipients even know what purchase intelligence is?

The disagreeing respondent commented:

- X4:
Purchase intelligence will achieve a higher level of judgment in most cases, but will not will not change the type of activities.

How do you define Purchase Intelligence ?

- X2: Use internet technology within procurement activities to meet goals
- X3: From my perspective, not that different than IS in procurement, number 1.
- X4: Purchase Intelligence for me is knowledge and analysis of the commodity or category you're active. This can be done by old fashion benchmarking, advances internet systems and every option in between.
- X5: I'm afraid that I've not come across this term. I assume it's to do with the experience levels of the purchasing staff.
- X6: All the data available you use to steer procurement (strategic to operational)
- X7: With the present knowledge to get the maximum benefit.
- X8: Knowledge on past and actual and future purchasing made possible by ICT-tooling, consisting of existing purchasing practice and external big data information.
- X10: P.I. can be interpreted in data into information which could be translated into actions. It makes sure objectives can be formulated into realistic goals and it is possible to analyze the "targets" with "the reality".

QUESTION 3

The type of purchased key product or key service (re-sale or use as raw material) fundamentally changes procurement activities in practice.
Not only the activities are carried out in a different way or at an improved level but also the type of activities are fundamentally different.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
0	3	1	6	0

Those who agreed stated:

- X2: Why: the direction of the activities is pointed differently.
How: the specification is created in a different stage (KOOP)
- X3: That was my comment: "The survey might be explicit about if the purchases are either for internal usage (end-user) or to re-sell (sales inventory) or to manufacture a new product (raw material inventory). Based on that, patterns will have significant changes."
- X4: Why: Products are better to understand; quality and quantity are quite easy to determine. Services however, are more abstract and harder to determine. Other techniques have to be used for that.
How: Sourcing of products can be global, while services are sourced locally (can be anywhere in the world though). This alone is asking for a whole different approach.
- X7: Why: Different product different way of doing purchase

- X8: Why: Purchasing is a holistic activity, which should include the whole supply chain efficiency, which implies that it should be known whether purchased products/services are resold or used for production or are indirect goods/services.
How: See why.
- X9: Why: Depending on the importance (Cost impact) and technical complexity of the key products/services will determine the importance and role of the purchasing function.

Those who disagreed commented :

- X1: Why: The stages are the same whatever you want to buy.
How: You decide what you want to buy, who you want to buy it from and how much you want to pay
- X5: I don't necessarily see the procurement activities as being different. From an operations management perspective, in each of the cases, the purchaser buys the product or service and it is the output for the customer. The difference may be that the customer is internal to the organization or external, but I don't see that as changing the practice of the purchaser unless they value internal and external customers differently.
- X10: That strongly depends on the way it is implemented!

Two questions on the adequacy of used terminology and pattern model

QUESTION 4

In the tables where the patterns are described I think the that following variables and / or values should be worded differently or deleted.
(please use the third column in the table below for your answer)

- X1: No suggestions to any of below.
- X5: No changes necessary
- X6:

Variable	Values	Your comments / alternative wording suggestions
Value proposition	Customer Intimacy	
	Operational Excellence	
	Product Leadership	
Value proposition design	By the focal company alone	
	By focal company and supplier	
	By the focal company and customer	
	By focal company, customer, and supplier	
Additional third parties involved in value proposition design	Supplying design knowledge	
	Supplying project management services	
	Facilitating networking between the focal company and other parties	
	Acting in multiple of the previous roles	
	Other	
	No third parties involved	
Purchased product commodity type	Commercially available products	<ul style="list-style-type: none"> • X4: I don't understand what is meant by 'none'. Maybe this can be deleted.
	Tailor made products based on Commercially available components	
	Tailor made specific products	
	none	
Purchased service commodity type	Commercially available services	
	tailor made services based on Commercially available service components	
	tailor made specific services	
	none	

Variable	Values	Your comments / alternative wording suggestions
Purchase order process characteristics. Preparation. (This refers to preparation activities prior to the actual ordering of products / services)	Repeating process with no specific features.	
	Repeating process based on a checklist with specific activities.	
	Unique process. Value proposition requirements are fulfilled by applying supplier know how.	
	Unique process. Value proposition requirements are fulfilled by applying supplier & focal company know how.	
Purchase order process characteristics. Execution. (This refers to executing the supply chain where the actual ordering of the products/services takes place)	Repeating process with no specific features.	
	Repeating process based on a checklist with specific purchase items.	
	Unique process which is based on supplier know how and specific product design requirements.	
	Unique process which is based on supplier & focal company know how and specific product design requirements.	
Who leads purchase activities for the key commodity? (for this item you will find two rows in the figure : preparation and execution)	Professional purchase employee	X6: Outsourced?
	Other employee with related external contacts , skills or interest	X8: ? Why adding "external contacts"?
	SME owner	
	Any employee who has time could be in the lead	
Purchase conditions	Never negotiated	
	Once negotiated and Never re-negotiated	
	Sometimes renegotiated	
	Frequent renegotiations	
Supplier base stability for key commodity	A dynamic supplier market forces the focal company to switch from key supplier regularly	
	The focal company keeps a single supplier	

Variable	Values	Your comments / alternative wording suggestions
	the focal company keeps a few suppliers with no or low switching costs	
	regular intended supplier switches to get better deals	
Buying frequency for key commodity	High frequency	X6: Buying = sourcing or call off
	More than once & low frequency	
	One time buy	

QUESTION 5

In the tables where the patterns are defined I am (still) missing the following variables and values.

- X2: none
- X5 : N/A
- X9: Looks good
- X10: No missing variables or values

The next pages contain Questions on Procurement Oriented Patterns

Introduction

We have now added examples of companies / key commodities for each of the four patterns:

Company and key commodity examples per pattern

Pattern	Focal company	Value proposition of the focal company	Purchased key commodity
P1	ICT turn-key designer	ICT Design and assembly of offices on a high quality level at a reasonable price. Operational excellence: standardization in commodities, low transaction costs internally and externally	Standard ICT software and hardware
P2	Horse shoes manufacturer	Standard horse shoes assortment at reasonable prices in a competitive environment	Standard quality iron, reliable delivery
P3	IT innovation driven company	Developing innovative software made applicable for practical usage in devices at a reasonable price	Delivering applicable solutions on the bases of regular soft- and hardware, to enable the companies' innovative software function in practice
P4	designer and manufacturer of trailers	Designing and manufacturing trailers tailor made for specific requirements of customers	Designing and manufacturing axles which align to the specific trailer wishes of the customer of the focal company.

See the appendix A for the pattern overviews.

6. I recognize pattern 1 as a pattern which I have observed in reality or read in literature. (State one answer only)				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
0	1	5	3	1
		X1: Maybe the largest of SME's can replicate this but an example does not spring to mind	X2: Risk was high and switch costs considerable when owner stopped support	X9: I think this is the most common pattern in SME's
		X4: Most of the pattern is recognized and agreed upon. One thing I don't agree with: when talking about design, it is not possible that you talk about 'commercially available products'. This should at least be tailor made products with existing components.		
		X10: Not Applicable/recognizable for me		

7. Pattern 1 clearly describes a pattern which I have observed in reality or literature.				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
0	2	5	2	1
	X4: See my answer above	X1: as Q6	X2: Is almost impossible to do it all alone...	X9: This pattern is identified in literature and is observable in many SME's.
		X10: Not Applicable/recognizable for me		

8. Which strengths or weaknesses do you see in this pattern in contributing to the value proposition of the focal company.

X1	
Strengths:	Ability to manage complexity
Weaknesses:	Managing complexity
X2	
Strengths:	In depth relationship and high involvement, short lead times and joint results.
Weaknesses:	Depending on knowledge of owner. Risk in single source.
X3	
Strengths:	Owner involvement is favorable.
X4	
Strengths:	'no or low switching costs'
Weaknesses:	Frequent renegotiations on high frequency of ordering is labor intensive. A long term agreement would be more sufficient. Obviously there is lack of purchase intelligence.
X5:	
Strengths:	It covers most if not all scenario's
Weaknesses:	
X6:	
Strengths:	
Weaknesses:	It combines values that do not logically relate
X7	
Strengths:	SME owner
Weaknesses:	SME owner
X8	
Strengths:	Clear product and situation SME's are encountering
Weaknesses:	
X9	
Strengths:	Simple, easy to implement
Weaknesses:	Focuses primarily on cost

9. In SME's I have observed typical variants of this pattern or read about it in literature.

Yes	No
2	8

10. Variant description for pattern 1

Example Type of business	Value proposition	Key commodity	Pattern Variant description
X1: Construction	Significant sub contract	Numerous	Specialist services
X2: Automotive	Develop an electronic wheel 2.0	Safety layer	Need of cooperation towards new markets

11. I recognize pattern 2 as a pattern which I have observed in reality or read in literature. (State one answer only)				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
0	2	3	4	1
	X7: If saw different pattern	X10: Not applicable/recognizable for me	X4 : This is a simple pattern that can be used for single parts or components with low supplying risk.	
X1: Think you have over complicated a simple process. Maybe its your example!			X9: Not sure what the question mark means.	
				X2: Basic standardized materials fit to purpose. Tailoring is needed.

12. Pattern 2 clearly describes a pattern which I have observed in reality or literature.				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
0	1	3	6	0
	X7: If saw different pattern	X10: Not applicable/recognizable for me	X1: There are other more complex scenarios that fit this profile. EG. A plastic moulding tool X2:Often quality is secondary to the response of the end customer... horse X4: I have not only observed this pattern, but also executed on an operational level.	

13. Which strengths or weaknesses do you see in this pattern in contributing to the value proposition of the focal company.

X1	Strengths: detailed process Weaknesses: too detailed process
X2	Strengths: constant watch of related expert Weaknesses: product pricing will vary.
X3	Strengths: Single supplier Weaknesses: Single supplier
X4	Strengths: leverage on commercial aspects, easy to compare / benchmark Weaknesses: simplicity might be the trigger to become lazy and lose focus
X5	Strengths: Equally as broad as the previous schema Weaknesses: n/a
X6	Strengths: Capabilities of dealing with changing market circumstances Weaknesses:
X7	Strengths: Other employee with related skills, external contracts or interest Weaknesses: Any employee who has time could be in the lead
X10	Not Applicable/recognizable for me

14.
In SME's I have observed typical variants of this pattern or read about it in literature.

Yes	No
5	5

15.
Variant description for pattern 2

Example Type of business	Value proposition	Key commodity	Pattern Variant description
X1: Toolmaker	Manufacture of engineering tools for production processes	Specialist steels	Expert services
X2: Measuring instruments	unique product	temperature sensor	
X4: Semiconductor	availability of spare and wear parts for both OEM and aftermarket	Key commodity: raw materials	
X7: chemicals	Operational Excellence	solvents	

**16. I recognize pattern 3 as a pattern which I have observed in reality or read in literature.
(State one answer only)**

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
0	3	2	5	0
<p>X4: Some combinations in the pattern seems to be odd. Services prepared by an employee with knowledge and interest is obvious, but ordered by any employee that can be in the lead is strange. Also low switching costs and high frequency don't fit in the pattern, I think...</p> <p>X2: no experience</p> <p>X1: Agree just – the challenge is that in most cases the external purchase element for the SME is small ie supporting hardware and communications services and so the purchasing resources are often small or non existent</p> <p>X8: Innovation companies are typically product innovation driven, with collaborative engineering.</p> <p>X10: I've been in ICT for 14 years</p>				

17. Pattern 3 clearly describes a pattern which I have observed in reality or literature.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
0	3	2	5	0
<p>X4: See above, some combinations seems to be odd.</p> <p>X2: no experience</p> <p>X1: I have been a consultant to such an SME</p> <p>X10: I've been in ICT for 14 years</p>				

18. Which strengths or weaknesses do you see in this pattern in contributing to the value proposition of the focal company.

X1

Strengths: maximizes SME's skills

Weaknesses: minimal purchasing elements:

X3

Strenghts: Pretty balanced

X4

Strengths: prepared by an employee with knowledge and interest in that direction

Weaknesses: ordered by any employee will cause problems in communications and order follow up.

X5

Strengths: Broad in scope

Weaknesses:

X8
Strengths: Combination of delivery of innovative products is combined with tailor made purchasing.
Weaknesses: Not many companies in SME, possibly only in creative industry.
X7
Strengths: value proposition design
X10
Strengths: expertise
Weaknesses: single focused

19.
In SME's I have observed typical variants of this pattern or read about it in literature.

Yes	No	unanswered
2	7	1

20.
Variant description for pattern 3

Example Type of business	Value proposition	Key commodity	Pattern Variant description
X1: Specialist software services	Supply of technical skills such as DBA resources and bespoke programming	IT Hardware	Highly skilled services
X3: Service	Development for Operators	Apps	The best thing with these types of SMEs, they usually have little to purchase, there is no material cost.

21. I recognize pattern 4 as a pattern which I have observed in reality or read in literature. (State one answer only)

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
0	2	2	5	1
	X2: Frequent negotiations are not welcome at customer intimacy X7: SME owner mostly in the lead.	X10: Not applicable/recognizable	X2: Quick scan at Pacton. X4: Recognizable, but the low frequency on ordering in combination with high frequency of re-negotiation is odd.	X1: A typical SME profile who often grow out of SME status through organic growth, acquisition or being bought themselves

22. Pattern 4 clearly describes a pattern which I have observed in reality or literature.				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
0	3	4	2	1
<p>X2: Frequent negotiations are not welcome at customer intimacy</p> <p>X4: Working for a company which claims to be an Engineer to Order (EtO) company in heavy industry, civil and off-shore business, I experienced that the customer is often involved as well for design approval and acceptance.</p> <p>X10: Not applicable/recognizable</p> <p>X1: as 21</p>				

23. Which strengths or weaknesses do you see in this pattern in contributing to the value proposition of the focal company.
<p>X1</p> <p>Strengths: Improves overall competitiveness</p> <p>Weaknesses: Potential lack of supplier leverage</p>
<p>X2</p> <p>Strengths: flexibility in adapting to CRS</p> <p>Weaknesses: costs</p>
<p>X3</p> <p>Strengths:</p> <p>Weaknesses: Ownership needs to be close to procurement activities.</p>
<p>X4</p> <p>Strengths: strong relationship with customer and supplier makes a solid supply chain.</p> <p>Weaknesses: depending on only one supplier and no dedicated purchase employee.</p>
<p>X7</p> <p>Strengths: customer intimacy</p> <p>Weaknesses: frequent renegotiations</p>
<p>X10</p> <p>Not applicable/recognizable</p>

24. In SME's I have observed typical variants of this pattern or read about it in literature.	
Yes	No
3	7

25. Variant description for pattern 4			
Example Type of business	Value proposition	Key commodity	Pattern Variant description
X1: Catering equipment supplier Value proposition: Key commodity:	provides range of catering equipment to restaurants and pubs	various inc glassware, consumable items, capital equipment	Specialist equipment provider
X2:	customer intimacy	enclosure	Develop a low volume collapsible enclosure
X4: EtO, Heavy industry, civil and off shore	Customer intimacy	Parts on drawing (engineered parts)	

26. In the list of the four procurement oriented patterns (POPs), I am missing one or more quite different patterns which I have seen in reality or literature.	
Yes	No
0	10

27. Please describe the missing patterns when you answered Yes to the previous question.

-none-

If you have answered “Yes” to the previous question please describe the variant in the table below along with an example of the business, value proposition and the key commodity involved.
(please copy the below tables when you want to describe several variants)

28. Variant description for pattern 1.

Example

Type of business:

Value proposition:

Key commodity:

Pattern variant description:

APPENDIX A (of round 2 survey)

Pattern 1 (for example ICT turnkey designer)							
Value proposition			Customer Intimacy	Operational Excellence	Product Leadership		
Value proposition design				By the focal company alone	By focal company and supplier	By the focal company and customer	By focal company, customer, and supplier
Additional third parties involved in value proposition design		Supplying design knowledge	Supplying project management services	No third parties involved	Acting in multiple of these roles	Other situations including third party involvement	Facilitating networking between the focal company and other parties
Purchased product commodity type			none	Commercially available products	tailor made products based on Commercially available components	tailor made specific products	
Purchased service commodity type			tailor made services based on commercially available service components	none	tailor made specific services	commercially available services	
Purchase order process characteristics, preparation			repeating process with no specific features	repeating process based on a checklist with specific activities	unique process. Value proposition requirements are fulfilled by applying supplier know how.	unique process. Value proposition requirements are fulfilled by applying supplier & focal company know how.	
Purchase order process characteristics, execution			repeating process with no specific features	repeating process based on a checklist with specific purchase items	Unique process which is based on supplier know how and specific product design requirements	Unique process which is based on supplier & focal company know how and specific product design requirements	
Who leads procurement activities for the key commodity? Preparation.			dedicated purchase employee	SME owner	Any employee who has time could be in the lead	Other employee with related skills,external contacts or interest	
Who leads procurement activities for the key commodity? Execution.			dedicated purchase employee	SME owner	Any employee who has time could be in the lead	Other employee with related skills,external contacts or interest	
Purchase conditions		once negotiated and never re-negotiated	Sometimes re-negotiated	frequent renegotiations	never negotiated		
Supplier base stability for key commodity		dynamic supplier market, forces the focal company to switch from key supplier regularly	The focal company keeps a single supplier	the focal company keeps a few suppliers with no or low switching costs	regular intended supplier switches to get better deals		
Buying frequency for key commodity				High frequency	More than once & low frequency	One time buy	

Pattern 2 (for example Horse shoes)

Value proposition			Customer Intimacy	Operational Excellence	Product Leadership			
Value proposition design				By the focal company alone	By focal company and supplier	By the focal company and customer	By focal company, customer, and supplier	
Additional third parties involved in value proposition design		Supplying design knowledge	Supplying project management services	?	Acting in multiple of these roles	Other situations including third party involvement	No third parties involved	Facilitating networking between the focal company and other parties
Purchased product commodity type			none	Commercially available products	tailor made products based on Commercially available components	tailor made specific products		
Purchased service commodity type			tailor made services based on commercially available service components	none	tailor made specific services	commercially available services		
Purchase order process characteristics, preparation			repeating process with no specific features	repeating process based on a checklist with specific activities	unique process, Value proposition requirements are fulfilled by applying supplier know how.	unique process, Value proposition requirements are fulfilled by applying supplier & focal company know how.		
Purchase order process characteristics, execution				repeating process with no specific features	repeating process based on a checklist with specific purchase items	Unique process which is based on supplier know how and specific product design requirements	Unique process which is based on supplier & focal company know how and specific product design requirements	
Who leads procurement activities for the key commodity? Preparation.			dedicated purchase employee	Other employee with related skills, external contacts or interest	SME owner	Any employee who has time could be in the lead		
Who leads procurement activities for the key commodity? Execution.		dedicated purchase employee	SME owner	Any employee who has time could be in the lead	Other employee with related skills, external contacts or interest			
Purchase conditions		once negotiated and never re-negotiated	Sometimes re-negotiated	frequent renegotiations	never negotiated			
Supplier base stability for key commodity			dynamic supplier market, forces the focal company to switch from key supplier regularly	The focal company keeps a single supplier	the focal company keeps a few suppliers with no or low switching costs	regular intended supplier switches to get better deals		
Buying frequency for key commodity				High frequency	More than once & low frequency	One time buy		

Pattern 3 (e.g. IT innovation driven company)

Value proposition		Customer Intimacy	Operational Excellence	Product Leadership				
Value proposition design			By the focal company alone	By focal company and supplier	By the focal company and customer	By focal company, customer, and supplier		
Additional third parties involved in value proposition design		Supplying design knowledge	Supplying project management services	?	Acting in multiple of these roles	Other situations including third party involvement	No third parties involved	Facilitating networking between the focal company and other parties
Purchased product commodity type			none	Commercially available products	tailor made products based on Commercially available components	tailor made specific products		
Purchased service commodity type				tailor made services based on commercially available service components	tailor made specific services	commercially available services	none	
Purchase order process characteristics: preparation		repeating process with no specific features	repeating process based on a checklist with specific activities	unique process. Value proposition requirements are fulfilled by applying supplier know how.	unique process. Value proposition requirements are fulfilled by applying supplier & focal company know how.			
Purchase order process characteristics: execution				repeating process with no specific features	repeating process based on a checklist with specific purchase items	Unique process which is based on supplier know how and specific product design requirements	Unique process which is based on supplier & focal company know how and specific product design requirements	
Who leads procurement activities for the key commodity? Preparation.			dedicated purchase employee	Other employee with related skills, external contacts or interest	SME owner	Any employee who has time could be in the lead		
Who leads procurement activities for the key commodity? Execution.		dedicated purchase employee	SME owner	Any employee who has time could be in the lead	Other employee with related skills, external contacts or interest			
Purchase conditions			once negotiated and never re-negotiated	Sometimes re-negotiated	frequent renegotiations	never negotiated		
Supplier base stability for key commodity		dynamic supplier market, forces the focal company to switch from key supplier regularly	The focal company keeps a single supplier	the focal company keeps a few suppliers with no or low switching costs	regular intended supplier switches to get better deals			
Buying frequency for key commodity				High frequency	More than once & low frequency	One time buy		

Pattern 4 (for example designer and manufacturer of trailers)

Value proposition				Customer Intimacy	Operational Excellence	Product Leadership		
Value proposition design			By the focal company alone	By focal company and supplier	By the focal company and customer	By focal company, customer, and supplier		
Additional third parties involved in value proposition design		Supplying design knowledge	Supplying project management services	?	Acting in multiple of these roles	Other situations including third party involvement	No third parties involved	Facilitating networking between the focal company and other parties
Purchased product commodity type		Commercially available products	tailor made products based on Commercially available components	tailor made specific products	none			
Purchased service commodity type		tailor made services based on commercially available service components	commercially available services	tailor made specific services	none			
Purchase order process characteristics, preparation		repeating process with no specific features	repeating process based on a checklist with specific activities	unique process. Value proposition requirements are fulfilled by applying supplier & focal company know how.	unique process. Value proposition requirements are fulfilled by applying supplier know how.			
Purchase order process characteristics, execution		repeating process with no specific features	repeating process based on a checklist with specific purchase items	Unique process which is based on supplier know how and specific product design requirements	Unique process which is based on supplier & focal company know how and specific product design requirements			
Who leads procurement activities for the key commodity? Preparation.			dedicated purchase employee	Other employee with related skills, external contacts or interest	SME owner	Any employee who has time could be in the lead		
Who leads procurement activities for the key commodity? Execution.			dedicated purchase employee	Other employee with related skills, external contacts or interest	SME owner	Any employee who has time could be in the lead		
Purchase conditions		once negotiated and never re-negotiated	Sometimes re-negotiated	frequent renegotiations	never negotiated			
Supplier base stability for key commodity			dynamic supplier market, forces the focal company to switch from key supplier regularly	The focal company keeps a single supplier	the focal company keeps a few suppliers with no or low switching costs	regular intended supplier switches to get better deals		
Buying frequency for key commodity			High frequency	More than once & low frequency	One time buy			

