

SUPPLY SELECTION PROCESS MODEL IN THE AUTOMOTIVE INDUSTRY

Kinga Szilvia MORAUSZKI

¹ Szent István University, Faculty of Economics and Social Sciences
Doctoral School of Management and Business Administration

Gödöllő 2100, Páter Károly u. 1, kinga.morauszki@gmail.com

* Correspondence author

Abstract: Choosing the right suppliers is a strategic issue for buyer companies. In most cases, it is possible to compete with suppliers, usually several companies are able to produce the required product or service. The process of supplier selection is described consistently in the literature, and there are many process models in the public domain that are presented in chronological order in this study. As supplier selection as a process has undergone changes in recent years, this study presents an automotive process model set up in an investigation from the definition of criteria to the final decision.

Keywords: buyer, factor, clusters, process model.

Introduction

Satisfaction of customer needs is progressively higher with the passage of time, coupled with a low price (Balázs, 2014). Globalization has shortened the life cycle of products. It is generally accepted that manufacturers intentionally incorporate parts into a given product such that the consumer / buyer / buyer is forced to purchase a new product within a specified time. The buyer tries to do everything, but repairing the old product takes more time and effort than purchasing a new product. Of course, this also applies to automotive suppliers. In order to become a part of a supply company, you need to meet a number of criteria, which become more serious over time, to join the supply chain. This means that in today's world (2019), the fight for the supplier position is strong, difficult to get into, but it also needs to be proven to stay.

There are differences in the assignment of specific activities to a given phase, but the main activities are identifiable (Koppelman, 2004; Lasch and Janker, 2005). In 1989, Harting defined supplier selection as a process, a decision problem that arises when covering a supply need. The goal is to find the most suitable partner to meet the external needs of the company and to reduce the risk by working with this supplier partner. The purpose of selection is to find a company that has the capabilities to meet the requirements of that particular company. When we look at the causes, we may see a difference in why a company chooses a new supplier over an existing supplier, or in another case, chooses to go with an existing supplier company and develops it rather than looking for a new one. The number of suppliers has increased dramatically over the last 15 years. While Suzuki had only 38 suppliers at the end of the 1990s, by 2010 that number was 73. This represented about 20% of the supply chain (Kemenczei, 2010). It is noticeable that companies strive to establish a long-term strategic relationship with their suppliers, so choosing the optimal supplier requires a lot of responsibility and consequently a serious decision, as even a small mistake can negatively drive the organization. Choosing the right supplier as a process addresses both qualitative and quantitative issues. In today's world, there are many suppliers who make thousands of products to their customers, but there are also some that are unable to meet their customers' expectations.

Approaches to the selected process

The awareness that every supplier company is substitutable forces suppliers to produce a product that fully meets the needs of the customer company. From the customer's point of view, this competitive situation may also result in lower purchase prices (Bedzsula et al., 2013). The risk of a company choosing the wrong supplier may also be evident in the use of inferior raw materials and in the failure to meet delivery times (Wagner, 2003). Supplier selection as a process has changed in recent years. The reasons for this should be found in the existing requirements of globally operating companies (Weber et al., 1991). At the same time, many companies have made great efforts in recent years to reduce the increased supplier base, to work more intensively with the remaining suppliers and to target performance more effectively to key competencies (Kannan and Tan, 2002). To achieve this, long-term partnerships with suppliers must be established (Choi and Hartley, 1996). In addition, many companies try to avoid stockpiling or relying heavily on suppliers or logistics companies.

However this is only possible in accordance with the Just In Time² system. This form of transport has begun to spread in recent years (Weber et al., 1991). As a result of these developments, the requirements, criteria and procedures used today in selecting suppliers have changed significantly over the past 40 years. There are many publications in the literature describing the process of supplier selection. Webster and Wind (1972) divide the supplier selection process into five phases: assessing needs, defining goals and specifications, identifying purchasing alternatives, evaluating and selecting alternatives. Monczka et al. (2005) determined the optimal selection process, but this time they defined each process step in more detail. Accordingly, on the basis of their research, we can talk about the next 7 phases.

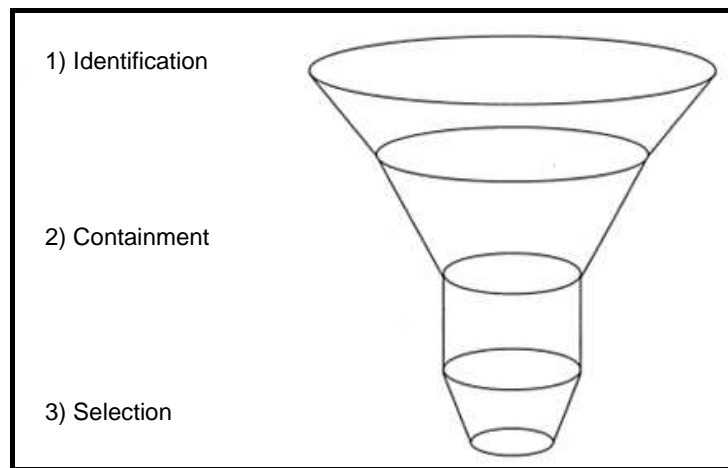


Figure 1. Funnel – model. Adapted from: “Beschaffungsmarketing” by U. Koppelman. Copyright 2004 by Springer Verlag

As a first step, they also provided a needs assessment as a baseline, followed by defining procurement requirements and setting a strategy. The fourth step is to identify potential sources of supply. Supplier delineation appears in the middle of the process before determining supplier selection methods. According to the process description of Monczka et al. (2005), the selection process can be interpreted as a funnel (Figure 1).

According to Glantschnig (1994), the following steps constitute the decision-making framework of supplier management. As a first step in the Funnel Model, potential suppliers are identified, with a small number of supplier partners being identified. As the number of

² **JIT – system** (*Just In Time*): An organization management philosophy that delivers the right amount of products and goods available at a given time and delivery does not allow for earlier or later delivery times, even if it is only 1 hour. There is no warehouse, all external raw materials must arrive at the processing site at the time of commencement of processing (Horváth, 2012).

suppliers decreases, the amount of information increases (Schneider and Müller, 1989). In this case, the landmark can be product, branch or special process capabilities. At this point we may ask the following question. What are the suppliers in the market? Which suppliers can we choose? In step 2 (Supplier delimitation), the supplier is contacted, whereby the supplier must provide information about himself as a company and about his products and services (Monczka et al, 2005). Potential supplier companies are selected that meet price and performance requirements. As it is not possible to evaluate all potential candidates from a procurement perspective, some should be circumscribed. To accomplish this task, the information is obtained from market research. It is important to specify which criteria should be included in the selection factors and which can be specified as K.O criteria as basic requirements during the selection process, as this information should be used to decide whether the potential supplier company has these basic criteria or not. Decisive criteria may include product quality, demand for environmentally friendly products, shipment time, flexibility, price or geographical location (Rainer, 2006).

After pre-selection, the scope of suppliers is narrowed down, so the rest of the process will only have to deal with these companies. The purpose of supplier evaluation is to help companies find the most suitable supplier partner. This requires collecting and systematizing the results of the selection. At this point in the process, it can be established that the suppliers identified during the pre-selection are indeed suitable for this business relationship. Failure to meet the requirements of a potential partner does not necessarily mean exclusion. These suppliers can be developed and trained as part of supplier development. The process is finally concluded by contracting. This funnel model is a process description known to many and is discussed in the literature, but there are process steps that have been developed by other researchers.

According to Monczka et al. (2011), this is a simple process that takes into account each requirement of supplier selection and brings together all the necessary elements of the supplier qualification and selection process. Based on their recommendation, prior to the evaluation, potential suppliers should be assured that they meet pre-requisites such as financial stability, sound business strategy, strong support management, manufacturing and design capabilities. Monczka (2011) has identified the supplier selection process in the following 7 steps.

1. Determine the need for supplier selection
2. Defining key criteria and requirements
3. Define your purchasing strategy

4. Identification of potential sources of supply
5. Supplier delimitation
6. Definition of evaluation and selection method
7. Supplier Selection and Decision Making

Weele (2005) defined the selection process in six steps: specification, supplier selection, contract agreement, ordering, launch and evaluation. In his view, this is more about operational procurement than about strategies. According to Choy and Lee (2003), the key points of an ex-ante evaluation are the areas that affect supplier quality, ie its technical know-how and organization. Companies first seek to establish a short-term and non-cooperative supplier relationship because purchasing products are not easy substitutes for suppliers (Arnold, 2007; Walter-Busch, 1996). However, the process does not stop here because the performance of the suppliers needs to be continuously evaluated. If the supplier company is eligible here, it may enter into a long-term contract with the buyer company. If the applicant is only partially compliant, the purchasing company will assist the supplier company as it is in the interest of both parties to establish a long-term partnership. In the event that the supplying company is not qualified, you will have to look again for a potential partner. Falzmann (2007) divided the process of selecting a potential supplier into six major steps, which includes the following steps.

1. Identifying needs: What to get?
2. Determining success factors: What are the important criteria for selection?
3. Candidate identification: Who can be a potential supplier?
4. Supplier evaluation: Who best meets the criteria?
5. Supplier selection: Which terms and conditions of contract are relevant?
6. Collaborate: How it works and how it can be improved?

The process by which the buyer company has "found" a suitable supplier company that will hopefully be able to continue to meet its needs and requirements in the future has not completed the process as supplier development begins.

Material and methods

In the sample available, 199 companies participated (N = 199). During my research, my primary goal was to create a process model for becoming a supplier of automotive companies in Hungary. Based on the results of the in-depth interviews, I compiled the material of the

questionnaire based on quantitative data collection. The questionnaire I edited was published on an internet interface, for which I used a portal. The link to this portal was sent with a cover letter to the email address of the company. The portal allows you to automatically organize your answers in an Excel spreadsheet after completing the questionnaire. Since I conducted the query through my website, I have sole, exclusive access to the data, thus guaranteeing the requested anonymity from the respondents. During the questionnaire survey I used a 6-point Likert scale (1 - not typical; 6 - always occurs), through which the companies were able to evaluate the problems that occur in the given supplier groups.

Results

During the construction of the process model, several variables were asked, but I decided to include the following 7 variables in this part of the study:

- The quality of the product was the decisive factor when selecting / evaluating the supplier
- The price of the product was the decisive factor when selecting / evaluating the supplier
- The supplier is flexible in ordering changes
- The supplier offers good delivery terms (delivery time, punctuality, reliability)
- The overall impression of the supplier is positive
- Is geographically close
- The supplier warrants its products and services

Since a distinction needs to be made between the existing and the new supplier group, the variables have been presented on this basis. That is, the guarantee of the existing supplier for the products and services and the guarantee of the new supplier companies for the products and services are separate variables. This appears in two separate questions in the questionnaire³. With the above mentioned variables I performed a factor analysis, which serves for data compression, assuming a certain structure. It can be used to group dependent variables into variables that would not be directly observable. The study also answers which factors are significantly correlated with a given variable and which are not. As a first step I determined the Kaiser-Meyer-Olkin (KMO) criterion, which in this case is 0.739 (Table 1). According to the indicator, factor analysis can be performed, so the variables examined are suitable for analysis. However, it is also important to examine the correlation between

³ The questionnaire: Please rate the criteria given on a scale of 1 (not at all important) to 6 (absolutely important) as to what criteria a potential new / existing supplier must meet when selecting.

variables, for which the Bartlett test provides information. Since the significance level is less than 5%, I rejected the null hypothesis, that is, the variables are correlated with each other.

Table 1.

KMO and Bartlett test factor analysis.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,739
Bartlett's Test of Sphericity	Approx. Chi-Square	1701,767
	df	91
	Sig.	0

Note. Own research (2018)

The first partial result of the factor analysis was the non-rotated factor weight matrix, which shows the correlation between the original and the given factor. The analysis has to take into account that variables that have nothing to do with one another will correlate with a given factor. Therefore, I performed a factor rotation (Varimax method), ie rotated the factors to obtain the rotated factor weight matrix (Table 2). This step also simplifies factors that are difficult to interpret.

Table 2.

Matrix of rotated factor weight

Rotated Component Matrix ^a					
	Component				
	1	2	3	4	
The quality of the product was the decisive factor when selecting the new supplier	0,843	0,143	-0,164	-0,175	QSC (Quality-Supply Chain) factor
The new supplier is flexible in ordering changes	0,802	-0,233	-0,021	0,261	
The existing supplier is flexible in ordering changes	0,738	0,237	0,157	0,16	
The quality of the product was the decisive factor when evaluating the existing supplier	0,723	0,387	0,039	-0,202	
The price of the product was the decisive factor when evaluating the new supplier	0,714	-0,006	0,093	0,009	
The new supplier offers good delivery terms (delivery time, punctuality, reliability)	0,691	-0,333	0,235	-0,253	
The existing supplier offers good delivery terms (delivery time, punctuality, reliability)	0,564	-0,125	0,445	0,054	
The overall impression of the existing supplier is positive	0,007	0,883	-0,032	0,182	
The overall impression of the new supplier is positive	0,014	0,726	-0,421	0,276	Geographic location factor
The existing supplier's geographically close	0,197	-0,099	0,889	-0,213	
The new supplier is geographically close	-0,286	-0,431	0,687	-0,126	
The price of the product was the decisive factor when evaluating the existing supplier	0,475	0,087	0,517	-0,141	Warranty factor
The new supplier warrants its products and services	-0,067	0,084	-0,274	0,887	
The existing supplier warrants its products and services	0,051	0,424	-0,064	0,836	

Note. Extraction method: Principal Component Analysis (PCA)

Rotation method: Varimax method with Kaiser normalization

a. The rotation occurred with the convergence of 6 iterations.

Source: Own research (2018)(N=199)

During the analysis, the variables included in the study were methodologically grouped into 4 factors, which I attributed to the fantasy name based on the variables, which mostly reflect their content and meaning. Factor 4 explains 72.811% of the total variance, which is above the minimum requirement of 60% (Appendix 19). The variance ratio means that much of the information in our possession was retained during the study. The factors are as follows:

1) QSC (Quality – Supply Chain) factor: There are 7 variables in this factor, which are as follows: 1) The quality of the product was the decisive factor when choosing a new supplier; 2) New supplier flexible for order changes; 3) Existing supplier flexible for order changes; 4) The quality of the product was the decisive factor when evaluating an existing supplier; 5) The price of the product was the decisive factor when choosing a new supplier; 6) The new supplier offers good delivery terms (delivery time, punctuality, reliability); 7) The existing supplier offers good delivery terms (delivery time, punctuality, reliability). The first two variables have almost the same factor weight, but from the table we can determine that the factor is explained by the first variable. (The quality of the product was the decisive factor when choosing a new supplier - 0.843). It is also noticeable that the next three variables in the series share a similar weight in the factor (0.738 - 0.711), and all of these are subject to the delivery conditions. In the text, the Harvard referencing citation style should be used (Smith, 2017) or (Smith, and Bradley, 2017). In the case of more than three authors, write the surname of the first of them and add the abbreviation et al. (Bradley et al., 2017).

2) Overall impression factor: It is made up of two variables, the overall impression of existing and new suppliers is positive. We are talking about the same criterion, the same factor, but as the research has come to light, companies differentiate between the two groups of suppliers.

3) Geographic location factor: The factor is determined by three variables, but among these, the close geographic location of existing suppliers (0.889) is relevant, followed by the geographic location of the new supplier and price as an element of the factor. (Price is the decisive factor when evaluating an existing supplier - 0.517).

4) Warranty factor: The two variables belonging to the factor are closely related, which is also shown by the factor weights (0.887 - 0.836). By guaranteeing, suppliers provide a kind of guarantee for the quality products they produce. It also gives companies a positive impression

of their suppliers. I used 4 factors obtained during my research for further multivariate analysis. Based on the above results, I decided to analyze the companies based on these factors by cluster analysis, examining how we can currently group companies in Hungary according to what is expected of the supplier companies. I examined 199 individuals on the examined data set using the hierarchical clustering method (Ward method), which suggested the creation of four clusters. Subsequently, I ran the analysis once more, but now performed a non-hierarchical, K-centered cluster analysis. After running the SPSS program, the distances between the cluster centers and the clusters were plotted. The tables in Annex II are illustrated. Prior to the cluster analysis, it was necessary to determine the significance level, which in this case ($p = 0.00$), as can be seen from the above table. Accordingly, I was able to distinguish 4 homogeneous groups, where the program included companies in the entire sample ($N = 199$).

The table 2 shows that about 43.2% of the respondents are cluster 4 and only 15% belong to the first cluster (Table 2). During the name selection process I tried to find “fantasy names” that reflect the characteristics of the companies in the cluster. Accordingly, the four clusters are as follows:

Table 2.

Names and numbers of clusters

Cluster's numbers	Cluster's names	Companie's numbers
1.	International owners	47
2.	Mixed Medium Enterprises	36
3.	Loyal partners	30
4.	German and French companies	86
<i>In all:</i>		199

Note. Source: Own research (2018)(N=199)

Main characteristics of the enterprises classified in each cluster:

1. Cluster – *International owners*

There were 47 companies in this cluster, two-thirds of which are medium-sized companies and one-third of which are large companies. Partially German and American majority-owned companies are active here, mainly in product manufacturing. This cluster comprises 23.6% of the companies surveyed. Considering their supplier base, they tend to surround themselves with international supplier partners, ie the proportion of domestic suppliers is small, they work with less than 20 Hungarian suppliers. Looking at international shipments, they seek to meet customer needs with 21-50 foreign suppliers. In their opinion, during the supplier selection process, their goal is to select the most suitable supplier partner for the next project, product manufacturing. Accordingly, they do not decide on the basis of price. This approach also echoes the selection of new, potential supplier companies, as this is the case when one has to purchase a product that has not yet been purchased. Companies in the cluster expect their suppliers to be 100% certified to IATF 16949: 2016 certification, which is a kind of additional requirement and can be used in conjunction with ISO 9001: 2015. Almost one-third of the companies have a quality assurance department behind the processes, so the choice of suppliers is ultimately made by quality assurance. When selecting members of the supplier base, they decide the supplier's fate on the basis of a supplier evaluation form, while for new potential partners, they treat this as preliminary information and decide on supplier companies in the context of an on-site supplier audit. As 78.7% of the supply partners are audited on the basis of the companies' own requirements, it can be concluded that the companies in the cluster are mainly group-owned. Most of the companies follow the environmentally conscious approach, that is, 89.4% procure environmentally friendly products and raw materials from their supplier partners. In the field of logistics, 80% of shipments arrive in the JIT approach. When investigating problems, companies' suppliers only occasionally have logistical problems and financial difficulties cannot be detected on the supplier side. While poor product quality is a common problem for new supplier partners, it is only occasionally a problem for existing partners.

2. Cluster – *Mixed medium enterprises*

There are 36 companies in this cluster, 75% of which are medium-sized and 25% of small businesses. In terms of ownership, we find German, American and Japanese majority owned companies that specialize in product manufacturing (91.7%). This cluster comprises 18.1% of

the surveyed companies. Looking at the supplier base, these companies also tend to surround themselves with international supplier partners, compared to cluster 1. The proportion of domestic suppliers is slightly higher, ie they work with 21-50 Hungarian suppliers, while on the international side they maintain business relations with 51-90 foreign partners. Looking at international shipments, they seek to meet customer needs with 21-50 foreign suppliers. The goal during the supplier selection process is always to choose the most suitable supplier partner, also keeping in mind the competitiveness of the market. If, based on the performance of the companies in the existing supplier base, they are not able to find the company that is capable of manufacturing the new product, they will turn to the new supplier companies in order to select the most suitable supplier partner. As 72.2% of the supplier partners are audited according to the needs of the companies, this also suggests that the companies are mainly group companies. Cluster companies expect 83.3% of their suppliers to be certified according to IATF 16949: 2016. More than one-third of companies have a quality assurance department behind their processes, so quality assurance is the final choice when choosing suppliers. When selecting members of the supplier base, they decide the supplier's fate on the basis of a supplier evaluation form, while for new potential partners, they treat this as preliminary information and decide on supplier companies in the context of an on-site supplier audit. Also within this cluster were mainly intra-group companies, as 72.2% of the companies are audited on the basis of their own requirements. The first two clusters show very high similarity based on the test data. One notable difference is that 47% of cluster 2 companies require a JIT approach to supplier partners. While examining the difficulties of the emerging problems, I found that the quality of the product is always poor for the supplier partners of the cluster companies, while the logistical problems occur only in a small number.

3. Cluster – *Loyal partners*

This cluster is dominated by small businesses (86.7%). There are only 30 companies in the cluster, so we are talking about the smallest cluster, accounting for only 15.1% of the total sample. 93.33% of the companies found here are product manufacturers and only the remaining 6-7% carry out assembly work. It is common for companies in the cluster to have business relationships with few international supplier partners, but more than two-thirds do domestic supplies with 21-50 Hungarian companies. 73.3% of the companies in the cluster are Hungarian majority owned companies, so I named the cluster Loyal Partners accordingly. The JIT approach was not implemented in deliveries, so this is not the basis for delivery, and I also found that the majority of companies (83.3%) procure products, raw materials from

unqualified supplier partners, for which the environmentally friendly application of technology isn't that important either. When selecting suppliers, the goal is to find the most suitable supplier partner, or turn to new potential supplier companies when it comes to cost reduction or new product purchases and the supplier base companies do not meet this requirement. It is typical for these companies that 63.3% of their suppliers expect their ISO 14001 certification as a basic requirement. Analyzing the logistics issue, it can be concluded that these companies are not typical for JIT delivery. Based on the respondents' responses, the JIT approach was 100% unanimously rejected. However, there are a few logistical problems, and neither the capacity nor the quality of the products, which is probably due to professional competence. Being a small business, the process of selecting suppliers is entirely within the remit of the managing director, which is to decide which supplier partners to work with in order to remain competitive. Having examined the selection and evaluation methods used, I have determined that they do not differentiate between existing and new supplier companies; make final decision based on a uniform supplier evaluation sheet and information from the supplier portal, possibly backed up by ABC analysis.

4. Cluster – *German and French companies*

The last cluster includes 86 companies, making it the largest cluster. All three types of companies are found here, but for the most part, small businesses play a dominant role. Companies work with relatively few supplier partners, as evidenced by the selection goals, as 94.2% of the supplier base companies are looking for the most suitable partners. Turning to new suppliers means purchasing a new product (95.3%). This leads to the conclusion that they are building a strong "team" around them to ensure that they remain competitive in the marketplace. It is mainly companies with German and French majority ownership that determine the nature of the cluster.

Factors and requirements such as the use of environmentally friendly products and raw materials, cooperation with approved and certified supplier partners contribute to this. Difficulties encountered by existing suppliers of companies do not occur with logistical and financial problems, but there is potential for improvement in product quality. For new suppliers, technical, technological deficiencies and capacity are sometimes a problem for companies.

Based on the above four clusters, I made the following statements:

- 1) The process of selecting and evaluating suppliers of automotive companies in Hungary needs to be revised and improved. There are those who know the right way, and there are businesses that are very far from it.
- 2) Clusters are typically made up of interested companies, as when a new product is to be manufactured, they make selections, but first they do not look at the partners of the existing supplier base with the aim of giving an "own" supplier the opportunity to produce a new product. Thus, all supplying companies start (existing - new) with equal opportunities, no competitive advantage.
- 3) The selection and evaluation process is not concentrated in the hands of procurement but distributed. Quality assurance is at the heart of the selection and evaluation process for clusters 1 and 2. In the case of the other two clusters, the management (executive director, commercial manager) performs this task. In Cluster 4, some purchasing effects can be observed.
- 4) The application of the JIT approach is not relevant for the four clusters examined. Only a few percent of the companies can identify with the approach.
- 5) If we look at the distribution of ownership, we can see that the clusters have a strong international impact, behind which there are countless investments. In the case of three clusters, there are mixed enterprise groups (1; 2; 4). Only in the third cluster, loyalty is found, where 73.3% are domestic enterprises.

After defining the automotive clusters, I used several variable analysis methods to set up the process model referred to as the basic objective, the results of which I have summarized and created for the process model of becoming a supplier of Hungarian automotive companies in the 21st century. I divided the model into 6 separate parts according to the selection and evaluation process.

1. Phase: Determining customer needs: Market research, ie the company's purchasing department summarizes customer needs, ie what product range is needed. First they check if there is any available supplier in the supplier base and whether it is suitable for the task of manufacturing and assembling the products. If so, phase 3 is in place and appropriate. Otherwise, they need to find the right supplier partner.

2. *Phase: Preselection:* In a second step, a list of potential supplier companies who are required to complete a vendor evaluation sheet⁴. In addition to the evaluation sheets, it is important that the company has certifications and that it meets the K.O. criteria. Companies can supplement their information gathering with a visit supplier audit. Once the purchasing department has collected all the relevant information, the suppliers are selected.

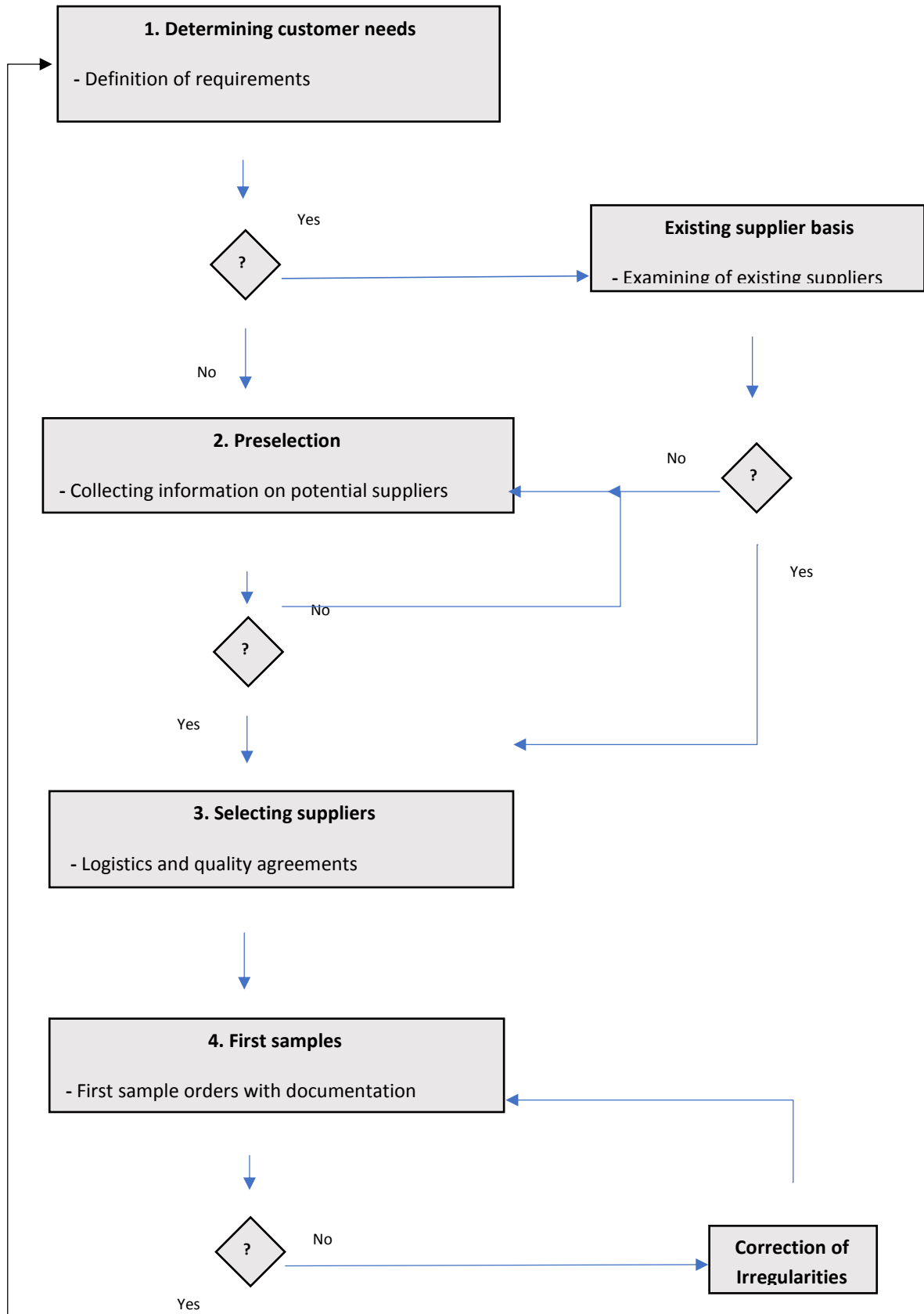
3. *Phase: Selecting Suppliers:* At this stage, negotiations are already underway, logistics and quality agreements are being concluded and, not least, potential supplier partners are selected (visit-based supplier audits). These steps are concentrated in the hands of the purchasing department. However, it should be noted that the selection decision is made by the purchasing department in conjunction with quality management, as quality professionals are required to evaluate compliance with quality requirements. It is therefore worthwhile to build a multidisciplinary unit to select supplier partners.

4. *Phase: First samples:* The first sample orders arrive, which are checked along with the sample documentation. If accepted, the supplier's approval is complete and can proceed to the next phase. Otherwise, they must remedy the deficiencies. Here we can talk about document errors or missing protocols, inspection plans, after which the first samples submitted by the supplier are accepted.

5. *Phase: The start-up phase:* Following supplier approval, the first shipments arrive and are also controlled. This section can take up to several months - depending on the frequency of shipment. They decide on the supplier's performance based on the performance achieved. Based on my research results, Fuzzy Logic can serve as an effective valuation method for all companies, as it allows you to decide on or against a particular vendor based on multiple criteria. If the selected supplier meets the required requirements, they can sign a long-term contract in phase 6. Otherwise, they will try to jointly solve the problems that have occurred. In this way, supplier relationships need to be nurtured, managed, and developed, as this is a prerequisite for a well-functioning business relationship. If, despite these attempts, the supplier's position does not change, the company will terminate the contract.

⁴ Vendor evaluation sheets include the following information: general information about the supplier company, revenue, headcount, insurance, product range, quality system, process descriptions, change management, merchandise delivery, dispatch management, complaint process.

6. Phase: Long-term contracting: The final passage of the long process of becoming a supplier is when the supplier company officially becomes a member of the supply chain (Figure 3).



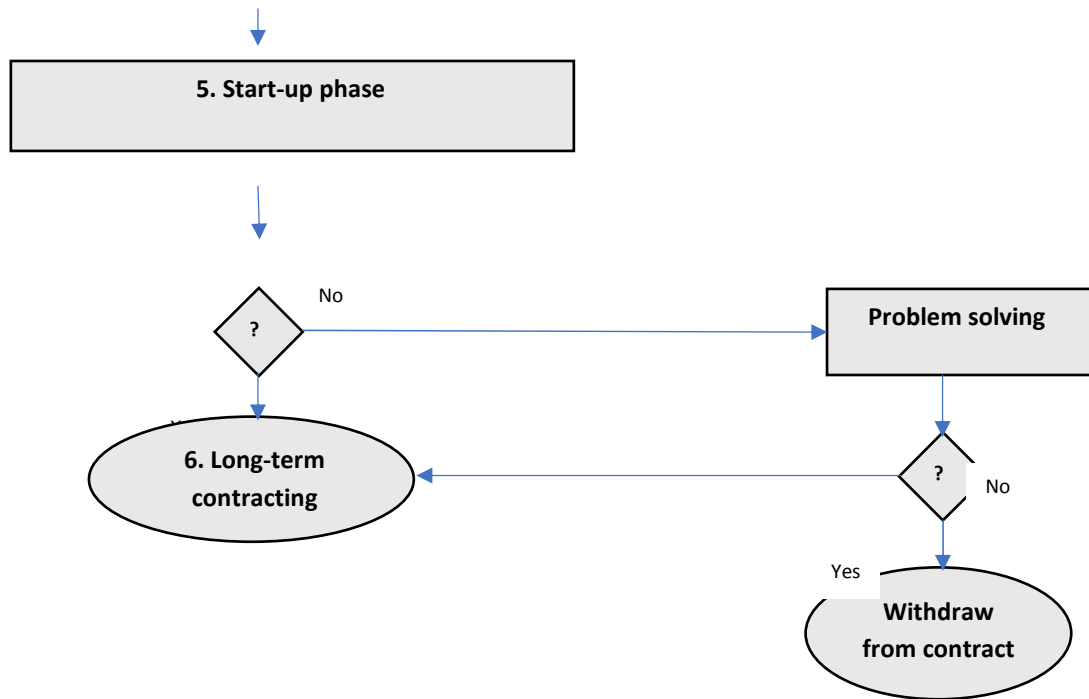


Figure 3. A process model for becoming a supplier in the automotive industry. Own research (2018)

Summary

The process model reflects all the attitudes of the Hungarian automotive companies involved in the study, which determines the selection and evaluation criteria, examining the improvement potentials, methods and procedures, it illustrates the approach of the modern Hungarian automotive companies by defining the role. I believe that the corporate groups on which the model is based can form the basis for further research that would provide a better understanding of the way companies think.

During my research, it began to dawn on me that becoming a supplier is actually a long, systematic process that involves many steps. In many cases, the only way to reach the Hungarian unit of a multinational corporation is through the international purchasing center of the parent company of the buyer. New potential suppliers need to recognize that a multinational company around the world is looking for and competing with the most appropriate suppliers.

References

- Arnold, U (2007). *Beendigung von Lieferantenbeziehungen in Unternehmensnetzwerken*, Berlin, p. 40.
- Balázs, I. (2014). *Ellátási lánc menedzsment*, Budapesti Gazdasági Főiskola, Budapest, On-line: https://www.tankonyvtar.hu/hu/tartalom/tamop412A/2011-0003_14_ellatasi_lanc_menedzsment/2_1_az_ellatasi_lanc_reszteruletei_wN3yWeE1v92skUSd.html Letöltés: 2017.04.14
- Bedzsula, B. and Erdei, J. and Topár, J. and Tóth, Zs. (2013). *Minőségmenedzsment*, Oktatási segédanyag, Budapesti Műszaki és Gazdaságtudományi Egyetem, Budapest, pp. 63-70.
- Choi T.Y. and Hartley J.L. (1996). An exploration of supplier selection practices across the supply chain, *Journal of Operations Management*, Volume 14, Number 4, pp. 333-343(11)
- Choy, K.L. and Lee, W.B. (2003). Design of a Case Based Intelligent Supplier Relationship Management System – the Integration of Supplier Rating System and Product Coding System, *Journal of Expert Systems with Applications*, Vol.25, pp. 80-100.
- Falzmann, J. (2007). *Mehrdimensionale Lieferantenbewertung*, Justus-Liebig Universität, Gießen, pp. 84-89.
- Glantschnig, E. (1994). *Merkmalsgestützte Lieferantenbewertung*. Köln: Fördergesellschaft Produkt-Marketing, p. 23.
- Horváth Zs. (2012). "JIT" - mi tette nagyvá a japán autógyártókat? *Kritikus beszállítási követelmények a "just in time" féle termelés esetén*, In: Egyszerű, érthető, a gyakorlatban is működő minőségbiztosítás kis és középvállalatoknak! On-line: <http://www.eoq.hu/akt16/minosegdr.pdf> Letöltés: 2018.12.10. pp. 118-119.
- Kannan, V.R., and Tan, K.C. (2003). *Attitudes of U.S. and European Buyers to Supplier Selection and Assessment and Implications For Business Performance*, *Benchmarking: An International Journal*, 10(5), pp. 472-489.
- Kemenczei N. (2010). *Állami támogatások szerepe a magyar autóiparban*, Budapesti Műszaki és Gazdaságtudományi Egyetem, Budapest, pp. 73-80.
- Koppelman, U. (2004). *Beschaffungsmarketing*. 4. Auflage. Berlin, Springer Verlag, pp. 24-55.
- Lasch, R. and Janker, G. Ch. (2005). *Logistik Management*, Innovative Logistikkonzepte, Wiesbaden, pp. 281-293.
- Monczka, R. M. and Handfield, R. B. and Trent, R.J. (2005). *Purchasing and Supply Management*, 3rd edition, South-Western, p. 603.

- Monczka, R. M. and Handfield, R. B. and Gillniper, L.C. and Patterson, J. L. (2011). *Purchasing and Supply Management*, 5th edition, South-Western, Mason, pp. 240-250.
- Wagner, S. M. (2000). *Strategisches Lieferantenmanagement in Industrieunternehmen: eine empirische Untersuchung von Gestaltungskonzepten*. Frankfurt / Main et al. Zugl. St. Gallen Univ. Diss., p.7.
- Walter – Busch, E. (1996). *Organisationstheorie von Weber bis Weick*, Verlag Fakultas, Amsterdam, p.240.
- Weber, C.A. and Current, J.R. and Beneton, W.C. (1991). Vendor selection criteria and methods. *European Journal of Operational Research*, 50(10), pp. 2-18.
- Webster, F. E. and Wind, Y. (1972). A general model for understanding organizational buying behavior, *Journal of Marketing*, Vol. 36(2), pp. 12-19.
- Weele, A.J. (2005). *Purchasing and supply Chain Management*, Analysis, Strategy, Planning and Practice, p. 350.