

DIGITAL TRANSFORMATION ON PURCHASING PROCESS DUE TO EVENTS WITH A DESTRUCTIVE IMPACT

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Purpose: The aim of the study is to present the results and description of the direct study relating to changes that have occurred in the purchasing area as well as make out new solutions and good practices that were undertaken in the context of events with a destructive impact on the supply chain (Covid-19 pandemic, armed conflict in Ukraine, etc.) that occurred in the last years. Particular attention was paid to answering the question whether the events had an impact on the digital transformation in the purchasing area and what related changes were implemented.

Design/methodology/approach: The answers to the research questions were obtained on the basis of the results of surveys conducted using the CAWI method based on the original questionnaire. A statistical method was used to verify the research hypothesis (Anova Kruskal-Wallis test). The study covered the group of experts with a minimum of 8 years of professional experience in the field of purchasing and current position: Senior Purchasing Specialist or Purchasing Manager or Purchasing Director.

Findings: The considerations and results of the research presented in the paper can be the basis for the characteristics of the changes taking place over the last years in purchasing and may constitute an indication and a model of good practices for organisations that have not yet implemented the improvements in the purchasing area which are proposed in the article.

Research limitations/implications: The study provided confirmation that the respondents have a set of features directly related to the topic of the study, as well as the required work experience in the current company. Purposive sampling was used in the study. Future in-depth research may focus on identifying statistically significant relationships in the explored topic.

Practical implications: The identified changes in purchasing area caused by events with a destructive impact on the supply chain and the list of good practices implemented in enterprises constitute valuable recommendations for management practice in the digitization process.

Originality/value: The study proves that in the area of purchasing, numerous changes in the functioning of this process have been noticed over recent years, due to the events with a destructive impact on the functioning of the supply chain. The changes had an impact on the digital transformation which is related to the levels of purchasing maturity of enterprises.

Keywords: digital transformation, purchasing processes, influence of events with a destructive impact for purchasing processes.

Category of the paper: research paper.

1. Introduction

Nowadays we can observe the constantly and dynamic changing business reality, which forces enterprises to quickly adapt to the new environment and operating conditions. Thus, as a consequence of it, all employees are required to be flexible and can adapt to changes and due new challenges and the role of departments in the company is significantly transformed. Moreover, recent years, i.e. the outbreak of the Covid-19 pandemic or the military conflict in Ukraine, resulted in the need for immediate response from individual divisions in the organisation. At the same time, apart from many negative effects, these events can certainly be viewed as opportunities, which have a positive impact on the development of enterprises. Specifically, this also applies to the purchasing area.

The purpose of this paper is to present the results and description of the direct study relating to changes that have occurred in the purchasing area as well as make out new solutions and good practices, which can be applied due conducted analysis. The problem addressed was discussed from the perspective of Purchasing Department employees. The main research attention was focused on seeking answers to the following research questions:

- Q1: Have there been any significant changes in the purchasing area over the last 3 years?
- Q2: Were these changes related to the dynamic situation in the world (Covid-19 pandemic, armed conflict in Ukraine)?
- Q3: What changes have occurred in purchasing departments in the face of events with a destructive impact on the supply chain?
- Q4: Have the changes caused in the face of events with a destructive impact on the supply chain had too an impact on the digital transformation and what types of changes has it caused in the purchasing area?

The hypothesis (H1) put forward in the paper is as follows: the level of purchasing maturity affects the occurrence of adaptive changes in the area of purchasing in organizations in response to an event that has a destructive impact on the supply chain.

The first part of the work focuses on literature review, based on articles, which have been written focusing on the field of purchasing process management and defining the meaning of the current approach to the topic, what is more from the perspective of work in the Purchasing Department.

In the second key area of work, the focus was on the research process, it was an analysis of the respondents' answers to questions about the changes that have occurred in the Purchasing Department in which they currently work over the last 3 years (including the Covid-19 pandemic and the war in Ukraine). Detailed research results and their elaboration are discussed in the following chapters of this work. In the research procedure, the research goal was adopted, the research problem was formulated, the research question was asked and then the research tools were adjusted.

Detailed conclusions and recommendations are included in the summary of the paper. It presents the most important findings and the considerations shown in the article may serve a fuller understanding of the essence of the changes taking place in the area of purchasing. The answers of the respondents constituted a valuable source of information about the solutions used and the changes that companies are currently implementing in this area.

Authors decided to combine theoretical elements and online survey questionnaires in the paper, the literature and comparative studies were used, as well as a quantitative research method (CAWI, original survey questionnaire). Thanks to them, publication may be of the most informative value to the reader, especially dedicated to experts in the field of purchasing process management, who are developing purchasing practices, including digital transformations. Thus, the work can be a starting point for further in-depth research on the role of purchasing, bearing in mind a destructive impact of events on the supply chain, which occurred recently. The hope is that this research approach will result in a more holistic view of how purchasing can influence the whole organisation.

2. Theoretical background

Purchasing as an independent function developed in the 1850s, but it played a secondary role in the organisation at the very beginning. Moreover, initially this topic was not exploited as much in literature as other areas, such as marketing, finance or logistics. Currently, the role of purchasing in organisations is significantly growing and is perceived differently, because it depends on many factors, both external and internal (Sikorska, 2021, p. 163). Contemporary purchasing departments are no longer merely a unit that responds to requests from other departments. According to Karasek and Cichoń, the changes result from the growing awareness of managers and understanding of the potential of a properly organised department in the company. The values that can be brought by effective management of the purchasing process include not only the skillful combination of expenses, but also, among others, risk management or competitive advantage (Karasek, Cichoń, 2016, pp. 22-23). According to scientific and professional publications there are 3 types of purchasing role in an enterprise:

- a strategic role, when the organisation manages the external resources of the company in order to increase its value,
- a tactical role, when purchasing performs a function of achieving cost synergies,
- an operational role, in which purchasing is the fulfilment of submitted requirements at the lowest cost while maintaining the required quantity, quality and deadlines (Hadaś, Ragin-Skorecka, Klimarczyk, 2014, p. 10).

The difference between the roles is that the strategic role identifies purchasing as one of the company's key areas of activity, while the tactical one focuses only on the potential savings that can be made. The operational role is identified with the classic implementation of the purchase function, i.e. the implementation of the demand reported in the organisation at the lowest costs while maintaining the required quantity, quality and deadlines (Hadaś, Ragin-Skorecka, Klimarczyk, 2014, p. 11).

The adjustment and involvement of the purchasing function in the implementation of the company's strategy was proposed by C. Mena, who distinguished four stages of the purchasing role evolution in the maturity model - transactional, cost-oriented, integrated and leading purchasing. In order to achieve the next level of maturity, the organisation must adopt a broader perspective, taking into account goals, financial and non-financial effects, e.g. innovation, risk, value or growth (Ocicka, 2019, p. 68). That shows the transformation of purchases that focus only on meeting the basic needs of the organisation through the purchase of materials and services at the lowest cost to a leading role with the highest level of maturity and a strong commitment to shaping the strategy of the entire organisation and striving to strengthen the competitive advantage. Thus, it can be noticed that the differentiated perception of purchases in organisations depends on external factors, internal process maturity. However, there is still a need to increase the awareness and role of partnership, including with suppliers or the business environment, and managing relations with internal and external stakeholders who can be a source of innovation focused not only on savings, but also on increasing revenues (Wszendybył-Skulska, Apollo, 2018, pp. 142-144).

More and more often, the aspect of in-depth cooperation with the supplier in the field of research and development as well as design and implementation for production of new products is also taken into account. In the business practice of enterprises, an increased interest of managers in this functional area can be observed. In the era of undeniable development of logistics and recognizing the benefits of logistics management, purchasing processes are gaining in importance because they are perceived as complementary to the logistics sphere, and also as another aspect of seeking to increase operational efficiency (Hadaś, Ragin-Skorecka, 2017, p. 40).

Enterprises try to adapt the purchasing strategy to the prevailing economic conditions, and the competences of employees are an important factor affecting the purchasing area, which is why the attitude that allows the most strategic and proactive approach to the development of competences, including purchasing, is so important (Sikorska, 2021, p. 174). Moreover, the crisis (the Covid-19 pandemic) has shown that one of the ways of maintaining continuity of work in office positions is the transition to remote work from home and flexible working hours and scope of tasks, which allows companies to retain employees with high competences (Dyduch, 2013, p. 36). Therefore, it is extremely important that recruiters and managers of purchasing departments follow the changes in the role of purchasing in modern enterprises, be able to pay attention to key competences, good practices when recruiting

employees and be able to recognize signs of new requirements regarding the required competences in the area of purchasing (Sikorska, Hadaś, 2020, p. 214).

The purchasing functions struggle with an imbalance in demand, leading to inventory challenges, uncertain delivery reliability, high transportation costs, and high risk for the supplier. Non-transparent supply chains and the new reality require flexibility and additional focus on sourcing functions along with risk management to maintain business and prosper as a successful business in the future (Cyfert, Glabiszewski, Zastempowski, 2021, pp. 1-3).

Taking these factors into account, supply chain and logistics managers, as well as decision makers and enterprises in general, should pay attention to purchasing activities where the right quality continues to be of particular importance, and not just the race to deliver goods and services at the right time, right place (Lysons, Farrington, 2016). And technical specifications and due diligence measures remain essential elements in the purchasing process, ensuring that potential suppliers have the necessary characteristics to become a partner (Lopes de Sousa Jabbour et al., 2020, p. 120).

Thus, regardless of the industry or geographic location of the enterprise, the managerial staff is forced to make quick decisions in conditions of high uncertainty and low-quality information, so that decisions are made in a way that will ensure key stakeholders that the company and its leaders: understand that there is a problem, they take it seriously and take the right steps (Garcia, 2006, p. 5).

Furthermore, digital transformation resulting from new business model innovation changed expectations and behavior, which has put pressure on traditional businesses. It requires the intervention of open standards that allow interdependent applications to focus on the process improving the maintenance of formalization and control of purchasing processes (Karttunen, Lintukangas, Hallikas, 2023). Substantially, the spread of digital technologies indicates radical changes in the nature of business activities and a significant transformation of business models based on customer-supplier relationships and how they create, deliver and capture value (Kamalaldin et al., 2020; Sjödin et al., 2020). That is why traditional transactional ordering models are increasingly limiting ordering complex product-service-software systems (Kamalaldin et al., 2020; Kohtamäki et al., 2019). The alternative is to create a new purchasing process, which means Procurement 4.0, which can better support an agile relational orientation needed to support the digital transformation of industrial enterprises. Firstly, the output of digital solutions is often produced from the interaction between supplier and client (buyer). They need to be co-created by buyers and suppliers in a more iterative and agile way through the purchasing process. Thanks them suppliers can create higher value by being closer to customer's operations and designing solutions that address the specific pain points of the customer (Kohtamäki et al., 2020). There is no doubt that exploring the emergence of digital solutions through co-creation between different participants in the procurement ecosystem, i.e. suppliers, stakeholders and buyers, can provide interesting, multi-stakeholder perspectives for future procurement and digital solutions. A more in-depth analysis of the dependencies of

these types of ecosystems and the impact on the purchasing process would be very informative – especially in new contexts such as autonomous solutions (Thomson et al., 2021). Currently, the purchasing process in the context of digitalization and in the face of events with a destructive impact on the supply chain and numerous changes taking place in the area of purchasing is not discussed in detail in the literature, it should be considered that the greatest emphasis is placed primarily on the electronization of the purchasing process (e.g. purchasing platforms).

To sum up, purchasing is an area in a company that undergoes transformation and continuous development, so as not only to perform basic tasks, but also to increase value for the company through its actions. Competent purchasing employees are the core of the business and drive change, taking into account those with a destructive impact on the supply chain (e.g. a global pandemic or an armed conflict). Technology discussions are important in the context of digital technologies transformation in purchasing and it is no doubt that more detailed research is needed to follow the current trends on the market.

3. Research methodology

3.1. Sample and data collection

In order to diagnose how purchasing experts assess the current approach to the role of purchasing in the organisation and what changes have occurred in this area over the last 3 years, the authors conducted an online survey among employees of the purchasing department. A purposive sampling of the research was decided, which, on the one hand, makes it impossible to generalise the results for the general population group, but on the other hand, allows to focus on a specific problem (Miszczyk, Walasek, 2013, p. 103). The authors defined the following requirements for selecting the research sample and to the group of experts includes people who met all of the following compulsory criteria:

1. The expert has at least 8 years of professional experience in the field of purchasing.
2. The expert works for at least 4 years in the current organisation.
3. The current position of an Expert: Senior Purchasing Specialist or Purchasing Manager or Purchasing Director.

This is a confirmation that the respondents have a set of features directly related to the topic of the study, as well as the required work experience in the current company. The invitation to participate in the study was sent to the respondents directly by the authors. In order to examine the respondents as efficiently as possible, the survey method was used (an original questionnaire form in Google was prepared). The survey was conducted in an anonymous form on the international social network specialising in professional and business contacts, LinkedIn. The research was conducted in 2022-2023. 72 correctly completed forms were obtained,

who met all the requirements for respondents. Already at the stage of data collection, the respondents asked for the results, which proves the great interest in the subject among the respondents and the authors have selected an appropriate group of experts.

The form has been divided into 3 main parts. The first part consisted of questions related to general characteristics of experts (an experience, job position ect.) and organisation (size, type of activity and main quarter localization) in which the respondent works, the second part - questions related to the role of purchasing in the organisation in which the respondent currently works. The last part concerned the changes that have occurred in the area of purchases over the last 3 years, taking into account among others the Covid-19 pandemic and the war in Ukraine. The research is empirical in nature, taking into account the practical experience of respondents.

3.2. Characteristics of experts

The majority of the surveyed group was represented by Purchasing Managers - 31 persons and Senior Purchasing Specialists - 29 persons. The level of the current position is shown in Figure 1.

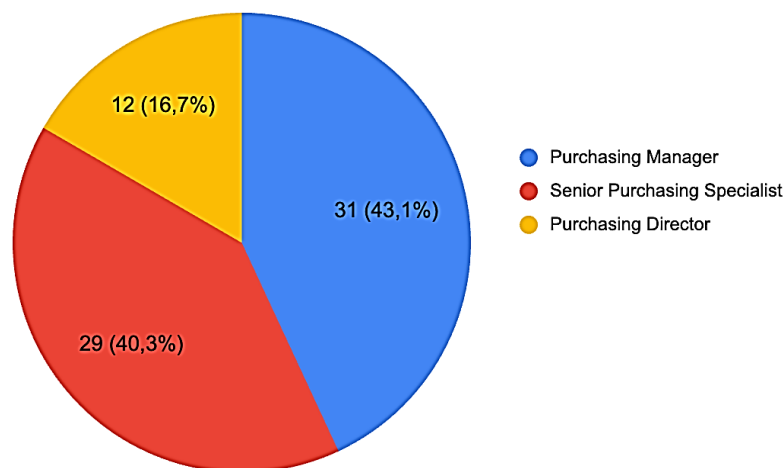


Figure 1. The level of the current job position of the experts.

Source: own study.

The respondents were also asked to provide the length of their professional experience in purchasing (as a whole and in the organisation they currently work for). The results are shown in Figure 2.

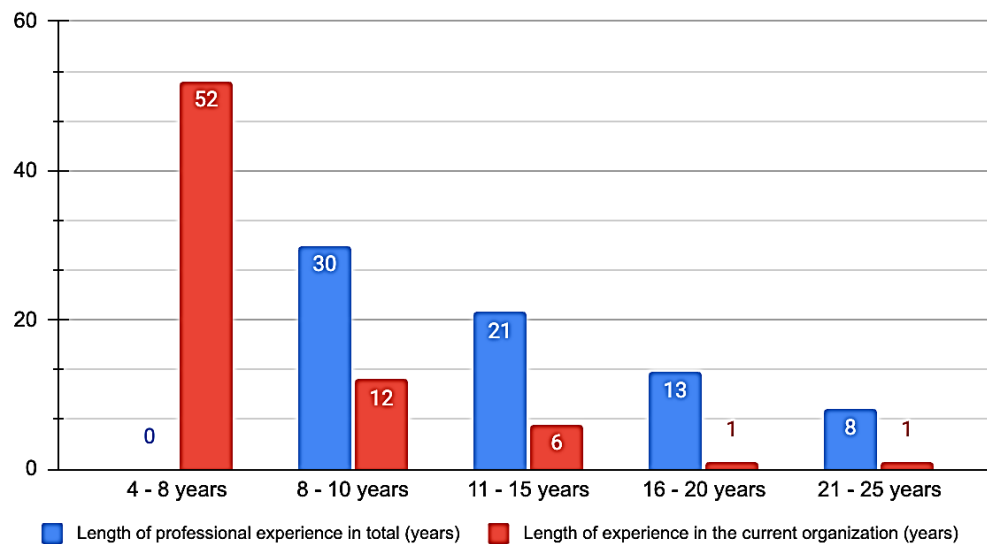


Figure 2. The length of their professional experience of the experts.

Source: own study.

As can be seen, people with many years of experience in working with purchasing participated in the survey, the most numerous groups were those with experience of 8-10 years (30 people) and 11-15 years (21 people). What is more, all respondents confirmed that they participate in the recruitment of purchasing employees and / or manage a team. This means that the research assumption regarding the selection of the sample has been met. This also confirms that the people taking part in the study are professionally active in the area of purchasing, and their participation in the study proves the relevance of the research problem.

The represented type of the business and the size of the enterprises in which the respondents work is presented in Figures 3 and 4. It is worth noting that all respondents currently work at the headquarters of companies located in Poland.

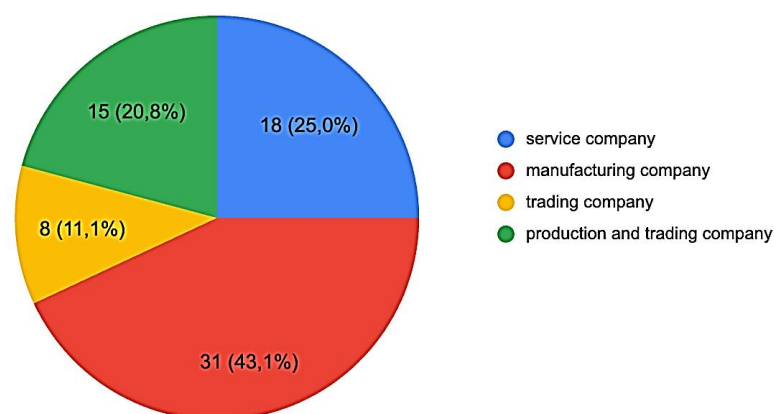


Figure 3. The type of the activity of the enterprise in which the experts work.

Source: own study.

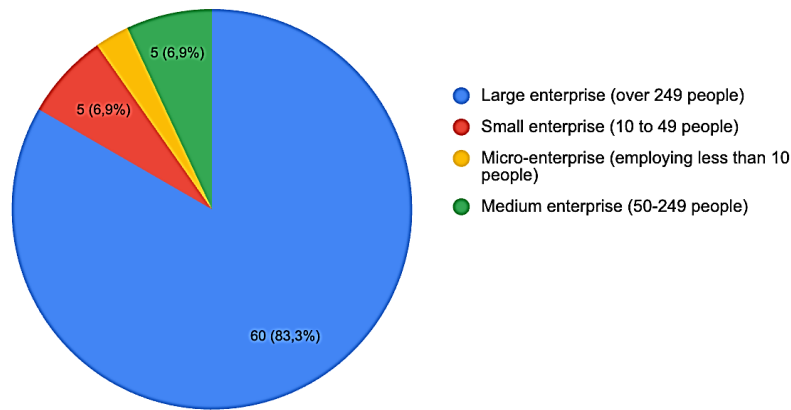


Figure 4. The size of the enterprise according to the number of employees.

Source: own study.

More than half of the respondents are people employed in enterprises with headquarters in Poland. Other headquarters of enterprises include the United States, Germany, and the United Kingdom. For the analysed context, it is important that the respondents work in purchasing departments located in Poland due to the impact of both Covid-19 pandemic and the military conflict in the neighbouring country (Ukraine) on the work of purchasing departments. Employees participating in the study work mainly in large enterprises, but due to the universal nature of the research, the findings will also apply to small and medium-sized enterprises that have a purchasing department in their organizational structures.

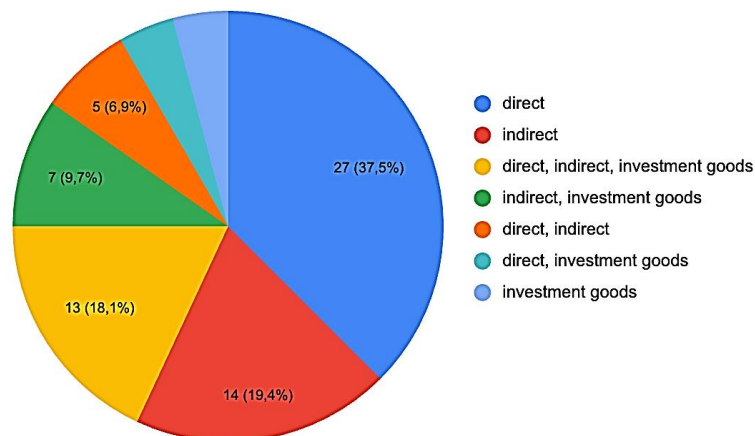


Figure 5. The type of purchases that the Expert deals with.

Source: own study.

Then, the respondents were asked: Do purchases constitute a separate organisational unit (e.g. Purchasing Department)? All confirmed that the organisation they work for has a Purchasing Department in their organisational structure. During the survey, the respondents were also asked to indicate what purchases they deal with, i.e. direct procurement, indirect procurement, investment goods. The results are presented in Figure 5. The majority of survey respondents admitted that they were responsible for more than one type of purchasing in the organization.

4. Results

4.1. Purchasing maturity

The respondents were asked to answer the question What is the role of purchasing in the organisation they currently work for? The authors decided to propose answers using C. Mena's purchasing maturity model, which in the model distinguished four stages of the evolution of the purchasing role - transactional, cost-oriented, integrated and leading purchasing. In order to achieve the next level of maturity, the organisation must adopt a broader perspective, taking into account goals, financial and non-financial effects, e.g. innovation, risk, value or growth (Ocicka, 2019, p. 68). The following responses were available, taking into account matching/ involvement in the organisation's strategy:

- Transactional purchasing: Purchases are responsive to the needs of other business functions.
- Cost-oriented purchasing: Purchasing develops purchasing practices and techniques, but the strategic focus is independent of the company's strategy.
- Integrated purchasing: Purchasing supports the implementation of the strategy through purchasing practices and product sourcing that strengthens the company's competitive position.
- Leading purchasing: The purchasing function is fully integrated into the processes of planning and implementing the company's strategy.

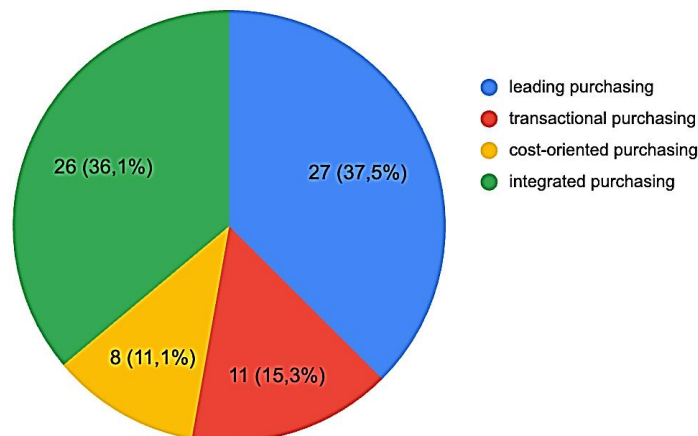


Figure 6. The role of purchasing in the organisation.

Source: own study.

The statistical analysis involved the use of the Anova Kruskal-Wallis statistical test to determine whether there are statistically significant differences between the level of purchasing maturity and the occurrence of adaptive changes in the area of purchasing in organizations in response to an event that has a destructive impact on the supply chain. The reason for choosing the statistical test is the fact that the Anova Kruskal-Wallis test (1), similarly to one-way

analysis of variance, allows for post-hoc tests (e.g. Dunn's test) in the event of rejecting the null hypothesis about the equality of means in the considered groups and is, in a way, the equivalent of one-factor analysis variance (Sandurska, Szulc, 2016). The value of the Kruskal-Wallis test function is calculated as follows:

$$H_{obl} = \frac{12}{n(n+1)} \left(\sum_{j=1}^k \frac{R_j^2}{n_j} \right) - 3(n+1) \quad (1)$$

where:

n – size of the entire sample; $n = n_1 + n_2 + \dots + n_k$,

n_j – sample size from a given population,

R_j – sum of ranks within the sample from a given population.

The Statistica 13 program was used to perform the test, and the following result was obtained: $H = 9.063361$ and $p = 0.0285$. Assumptions of normality of distribution were checked using the Shapiro-Wilk test. The significance level p is less than 0.05 for the case under study, thus the null hypothesis of normality of distribution was rejected. We therefore conclude that the distribution of the studied variable differs significantly from the assumed normal distribution and the obtained results are statistically significant, which confirms the hypothesis put forward in the paper (H1).

4.2. New challenges in purchasing process

Taking into account the importance of changes taking place in the area of purchasing, the respondents' answers were analyzed in terms of interconnections in order to obtain the most accurate picture of changes in the relationship in the face of events with a destructive impact on the supply chain. Thanks to this analysis, the following important information was obtained (Figure 7):

- a list of changes in the area of purchasing over recent years in the surveyed enterprises,
- confirmation that the market situation had an impact on the product groups for which the respondents are responsible, both positive and negative, with examples,
- confirmation that C19 caused changes in the functioning of purchasing in the surveyed enterprises, i.e. the purchasing situation in relation to other areas improved and deteriorated, which in turn resulted in the implementation of new solutions and information on how quickly these solutions were implemented,
- information on how quickly the purchasing department responded to the situation on the world market (war in Ukraine).

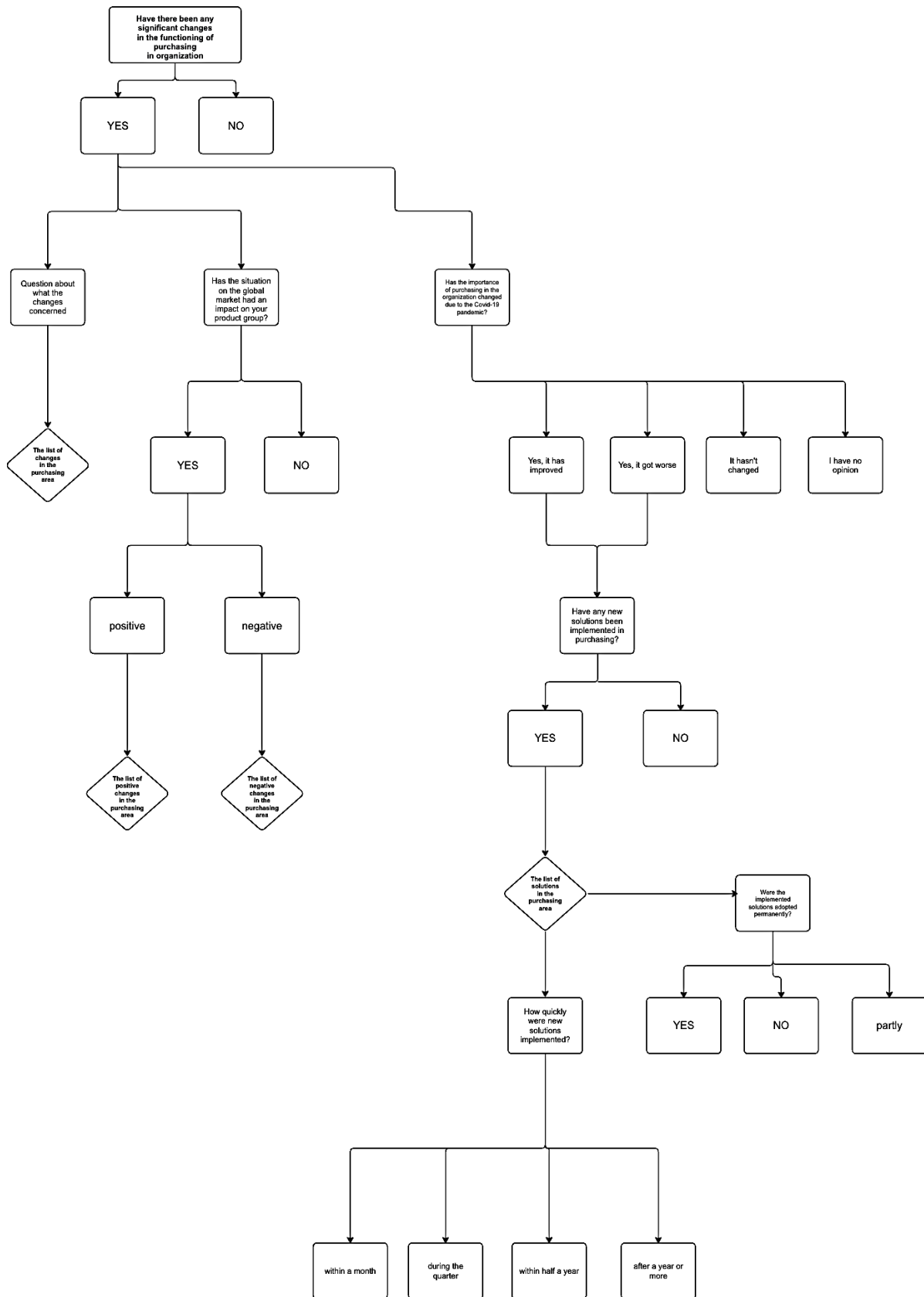


Figure 7. Scheme of reasoning for asking questions to respondents.

Source: own study.

To better understand the research, the questions and answers provided by the respondents are presented on the next pages of this paper. In the survey, the respondents were asked to answer the question: Have there been any changes in the functioning of purchasing in your current organisation in the last 3 years? The results are presented in Figure 8.

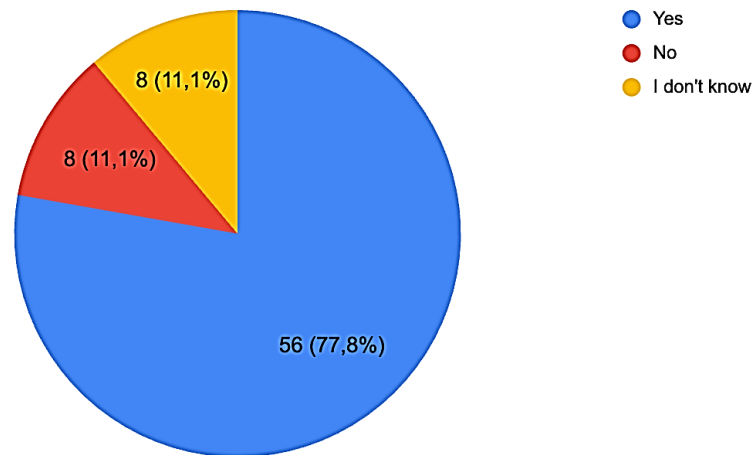


Figure 8. Have there been any changes in the functioning of purchasing in your current organisation in the last 3 years?

Source: own study.

The analysis of the responses obtained confirms that a significant research problem in the area of purchasing has been identified. In order to link changes in the implementation of purchasing processes in the face of events with a destructive impact on the flow of supply chain, such as a global pandemic or an armed conflict in Ukraine, people who confirmed that there were changes in the area of purchases in the last 3 years (77.8%) were asked: Has the importance of purchasing changed in the organisation due to the Covid-19 pandemic and the armed conflict in Ukraine? The results are presented in Figure 9. The next question concerned directly the purchasing category for which the respondent is responsible: Has the situation on the world market had an impact on your purchasing category? The results are shown in Figure 10.

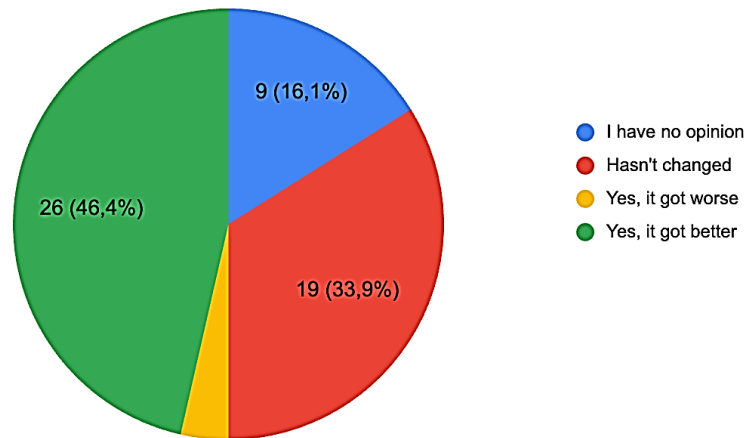


Figure 9. Has the importance of purchasing changed in the organisation due to the Covid-19 pandemic and the armed conflict in Ukraine?

Source: own study.

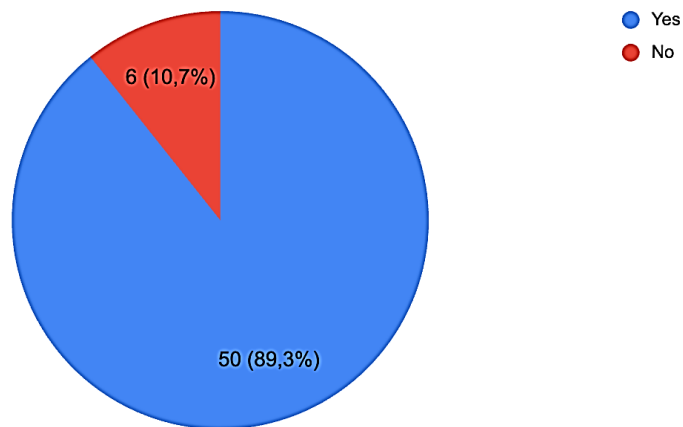


Figure 10. Has the situation on the world market had an impact on your purchasing category?

Source: own study.

Moreover, based on notices of the intensive development of digitization processes and technologies in purchasing, which has a significant impact on the current functioning of the whole enterprises and supply chains, all respondents were asked to indicate examples of the impact (positive and/or negative) on the purchasing categories for which they are responsible. Based on the collected answers, the authors of the paper prepared a list of the most important characteristics in terms of the research problem. It is presented in Table 1.

Table 1.*Impact on the purchasing category group according to experts opinion*

Positive impact	Negative impact
<ul style="list-style-type: none"> ● Increasing importance of the role of purchasing in the entire organisation, strategic approach. Noticing the numerous benefits of maintaining a purchasing department in the organisation. Increased employee awareness. ● Quick response to the search for substitutes for purchased products / services, decision-making to a greater extent. New suppliers, improvement of relations with existing suppliers. ● Greater demand for the products offered by the enterprise, i.e. greater profit for the entire enterprise, which means more work in the area of purchasing and opportunities for employee development and hiring new people. ● Possibility of hiring new employees and promotions in the Purchasing Department. ● Intensification of the use of online methods and tools, e.g. Open Books, purchasing platforms, remote work, online negotiations and use them in cooperation with suppliers. ● Submitting subsequent categories to category management. 	<ul style="list-style-type: none"> ● Limited availability of raw materials, finished products, goods, problems with acquiring and establishing relationships with new suppliers. ● Price increases, more difficult, multi-stage and extended negotiations. ● Problems with the implementation of the assumed budgets, the inability to achieve KPIs and employees' own goals. ● Extended lead time for order fulfilment. ● Restrictions and higher logistics costs. ● Problems with the implementation of deliveries. ● No employees at the company of the supplier. ● Loss of customers (e.g. withdrawal from the Ukrainian or Russian markets). ● Cancellation of investment projects or greater risk. ● Employees cannot be promoted, group layoffs.

Source: own study.

The most important aspect, in the category “positive impact” is undoubtedly further growth of importance of purchasing in enterprises. In the category “negative impact” it was found typical crisis events related to price increases, extensions of order lead time or general increase of uncertainty with implications for the functioning of the supply chain.

Based on Figure 6, it should be concluded that the purchasing role in enterprises in which the respondents work is mostly fully integrated within the processes of planning and implementing the company's strategy (37.5%) or supports the implementation of the strategy through purchasing practices and sourcing products that strengthen the company's competitive position (36.1%). This proves the growing importance of purchasing in the organization.

5. Discussion

Furthermore, to answer the research question posed in the paper, the authors of the article asked respondents who confirm changes in the last 3 years to indicate what the changes in purchasing were related to. Taking into account analysis of the obtained responses, the results of previous research conducted by the authors of the paper, numerous interviews with corporate managers and boards classified its into the following categories:

Category 1. Reorganisation according to changes of importance of sourcing/purchasing

Subcategory: general changes

- increasing the awareness of the importance of purchasing for the organisation (e.g. changing the role of purchasing from operational to strategic),
- change in the scope of responsibilities and tasks of the Purchasing Department employees.
- change of approach to cooperation with suppliers,
- employing a new person/persons or reduction of the position in the Purchasing Department.

Subcategory: changes in the implementation of the process

- organisational changes (e.g. division into direct and indirect purchases),
- standardisation of purchasing procedures and documentation (e.g. general purchasing conditions, purchasing policy),
- implementing category management.

Category 2. Digitization of the purchasing process:

- introducing a purchasing platform/e-catalogs,
- introduction of the purchasing module to the ERP system,
- new IT tools in the area of purchasing,
- total or partial digitization of the purchasing process.

When analysing the popularity of the answers provided by respondents (Fig. 11), it is noticed that the most popular are activities related to the digitization of the process (implementation of new IT tools) and the increase in employment in purchasing/procurement departments (related to increased responsibility and scope of work).

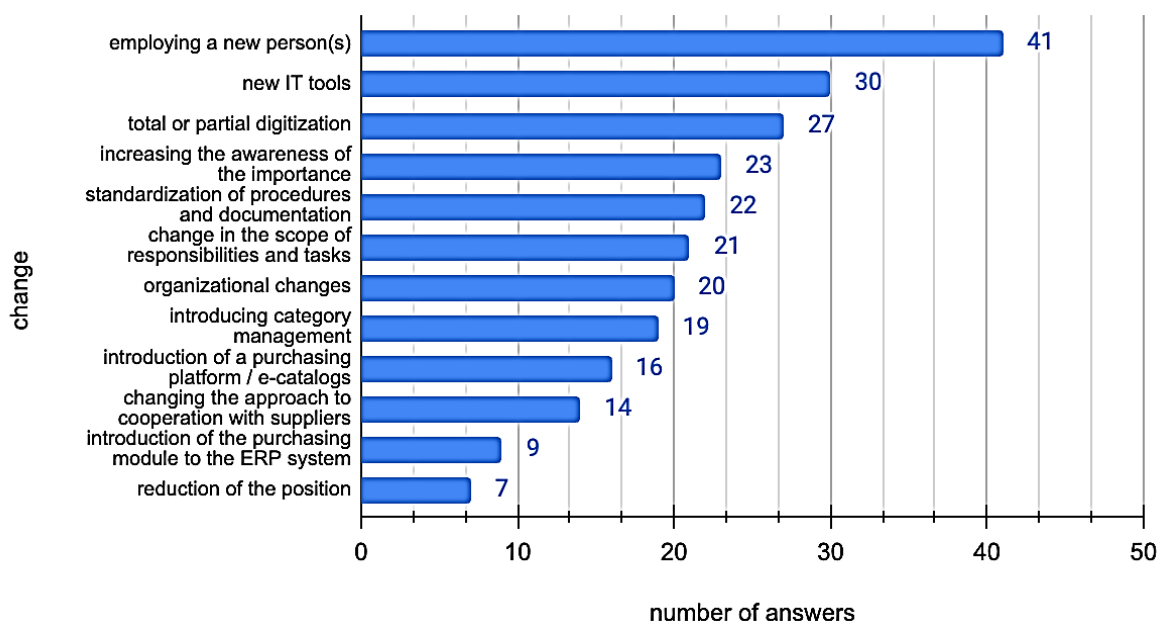


Figure 11. Changes in the functioning of purchases.

Source: own study.

Successively, the authors asked: When were any solutions introduced since the moment of noticing the changes? and Were the new solutions adopted permanently? (Figures 12 and 13).

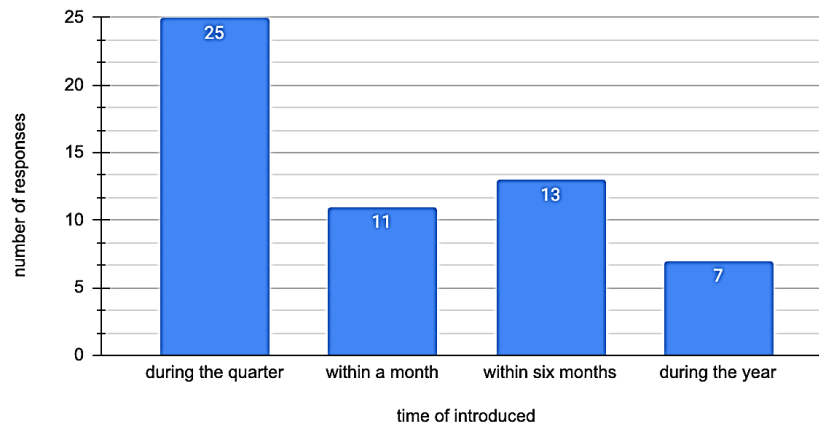


Figure 12. When were any solutions introduced since the moment of noticing the changes?

Source: own study.

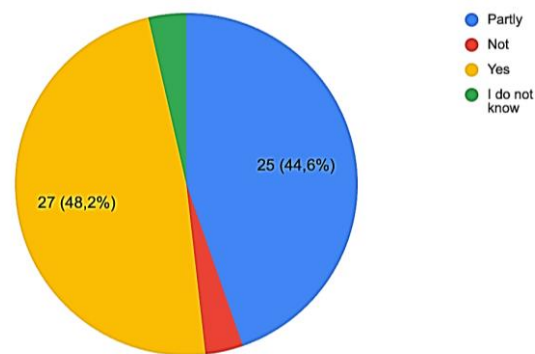


Figure 13. Were the new solutions adopted permanently?

Source: own study.

The research results show that the dynamics of changes were high due events with a destructive impact on the supply chain. Hence in most cases, the changes were introduced within a period not longer than 3 months (a total of 36 indications for a period of one month or a quarter). Such results may indicate both a high adaptive potential of purchasing departments in the analysed cases and / or a relatively low complexity of changes. No less numerous changes in the area of purchases are a fact, and experts confirm that the happening situation was their main catalyst. It should be noted that most of the implemented solutions have been permanently adopted (Fig. 13), which proves that even though the changes were implemented in an unforeseen situation, they were properly designed and worked well in the organization.

6. Conclusion

In recent years, it can be noticed that purchasing has become one of the main areas influencing the success of the entire enterprise. Without a doubt, the topic discussed in this paper is important for the theory and practice of supply chain management. Companies adapt purchasing strategies to the current economic conditions, move away from responding only to current needs (operational role) in favour of constant cooperation with other organisational units of the company and the active participation of suppliers (strategic role). There is no doubt the Covid-19 pandemic disrupted the business world and undermined the reliability of the supply chain. What is more, also the full-scale armed conflict has destabilised the prices of many products and resulted in a change of approach in the purchasing process.

The considerations and results of the research presented in the article are, in a way, a characteristic of the changes taking place over the last years in purchasing and may constitute an indication and a model of good practices for organisations that have not yet implemented or planned to implement the improvements in the purchasing area proposed in the article.

The essence of achieving the adopted goal of research is the possibility of confronting the problem with purchasing department employees who actively participate in the purchasing process, know the current problems and expectations set by the organization in which they work, at the same time taking into account events with a destructive impact on the supply chain, what was accomplished in this paper. Summarizing the results of the study, it should be stated that the changes described and their impact on the functioning of the organization are becoming necessary for the area of purchasing. The survey covered experts with extensive professional experience in the area of purchasing, mainly managers and senior purchasing specialists. It is worth noting that some of the respondents are people who deal with several types of purchases. This means that they must certainly apply different strategies for different purchasing categories in their work, and thus the role of purchasing and its place in the organisation may differ in various organisations despite the similar type of activity.

In attempting to answer the research question (Q1), it should be confirmed that there have been numerous changes in the purchasing area over recent years (positive and negative), both on the market in the sense of purchasing management in organizations, as well as changes within inside the organization, e.g. implementation of new solutions in the surveyed enterprises. Importantly, almost 80% of the respondents confirmed that there have been changes in the functioning of the department over the last 3 years. Undoubtedly, this is a confirmation of the statement that purchases change and adapt to the environment. Organisations that have not noted changes in recent years should look at the purchasing process in their organisation and check whether it requires any improvements.

Referring to the research questions (Q2 and Q3), it is not surprising that changes are related to the dynamic situation in the world. The most frequently mentioned changes include: employment of a new person/people in the Purchasing Department, new IT tools in the area of purchasing, and complete or partial digitization of the purchasing process. According to the report “Gartner The Supply Chain 2035 Roadmap” (Thomson, Kamalaldin, Sjödin, Parida, 2021), by 2025 25% of decisions in supply chains will be made by algorithms, without human intervention, by 2030 more than half of activities in supply chains will be autonomous, and over 75% of large companies will have robotics solutions implemented in its warehouses by 2026. That is why digitization and IT improvements are so important in purchasing

Last but not least, answering to research question (Q4) in the surveyed enterprises, employees confirm that changes were caused by the dynamic market situation and numerous events, which influenced the overall functioning of the company in the purchasing area, and what's more, initiated the digital transformation of the purchasing process. The changes discussed even forced purchasing department employees to adapt to the environment and strive for almost complete electronization of the purchasing process. Moreover, the impact of destructive disruptions in supply chains has accelerated the digital transformation of purchasing processes and is, in a way, a response to these phenomena. Therefore, it is worthwhile for organisations to recognize these needs and introduce changes, not only during events with a destructive impact. In the area of purchasing, there were also numerous changes in cooperation with the supplier, online negotiations, the use of a purchasing platform, and a change in the method of communication.

The coronavirus did not cause positive changes directly, but numerous obstacles and problems, and only then the actions taken/changes introduced by managers improved the functioning of the purchasing department, including through the implementation of digital solutions. Which is why the study results show that ultimately the coronavirus caused that, according to the respondents, the situation in the purchasing department improved (45.8%), and in almost 70% of them new solutions were introduced as part of purchasing management. Similarly, in the case of the war in Ukraine, which resulted in a number of effects in the functioning of purchases, both positive (e.g. the possibility of hiring new employees or faster reactions in the search for new suppliers) and negative (e.g. limited availability of raw materials or loss of customers). This is confirmed by the experts participating in the study. These changes were partly caused by the global situation in the face of events with a destructive impact on the supply chain. The summary of changes and the impact due digital transformation of these changes on the functioning of purchasing in the organization prepared by the authors may provide guidance and benchmarking for other organizations.

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