

Systemy Logistyczne Wojsk
Zeszyt 56 (2022)
ISSN 1508-5430, s. 127-146
DOI: 10.37055/slw/155071

Institut Logistyki
Wydział Bezpieczeństwa, Logistyki i Zarządzania
Wojskowa Akademia Techniczna
w Warszawie

Military Logistics Systems
Volume 56 (2022)
ISSN 1508-5430, pp. 127-146
DOI: 10.37055/slw/155071

Institute of Logistics
Faculty of Security, Logistics and Management
Military University of Technology
in Warsaw

Determinants and implications of improving partnership relations in cooperation between suppliers of metal products and a digital marketplace company operating on the market production on contract

Determinanty i implikacje doskonalenia relacji partnerskich we współpracy między dostawcami wyrobów metalowych a firmą typu digital marketplace działającej na rynku produkcji na zlecenie

Monika Górka

monika.gorska@pcz.pl; ORCID: 0000-0001-9774-4740

Czestochowa University of Technology, Faculty of Production Engineering and Materials Technology, Poland

Abstract. The metal sector is one of the important links in the whole economy. As there is strong competition in this market, companies need to constantly adapt to changes in the environment to maintain their position. For this reason, companies are looking for new solutions to improve their functioning both in the internal - organizational and technical area, as well as in the external area - i.e., the involvement of external entities - customers and partners. Functioning on the market is associated with the need for both short and long-term cooperation with distributors, suppliers, consulting companies, and subcontractors, and the growth in this area, i.e., external growth, as shown by the last several years and the success of many companies operating within the sharing economy, is more important than the internal development of the company itself. Therefore, one of the basic factors contributing to success is shaping cooperation with market participants.

The article presents the way of functioning and the possibilities of improving relations between the company and partners to offer products or provide services with the greatest possible innovation. The study aimed to evaluate and analyse the cooperation of a Digital marketplace operating in the production market on commission with production partners, with particular emphasis on the impact of partner relations on its functioning. The subject of the study was a company dealing with the digitization of the traditional production process on commission using a distributed network of production partners (distributed production). The form of the so-called digital marketplace forces the examined company to constantly improve the tools that enable the provision of its services to potential buyers and suppliers. Therefore, the appropriate selection of methods and tools by the examined company may significantly

affect the conditions and motives for the cooperation of the company's production partners, which was justified by the results achieved. The article contains a literature analysis on cooperation and partner relations with suppliers in distributed production. The reasons for undertaking cooperation by companies and their effects are presented, referring these issues to the realities of the metal market. The results of the survey were also presented, describing the factors influencing the decision to cooperate with a Digital marketplace operating on the production market commissioned by suppliers, with particular emphasis on the need to improve their relations.

Keywords: digital marketplace, improvement of partnership relations, forms of cooperation, metal sector, distributed manufacturing

Abstrakt: Sektor metalowy jest jednym z istotnych ogniw w całej gospodarce. Z uwagi na fakt, że istnieje silna konkurencja na tym rynku, przedsiębiorstwa chcąc utrzymać swoją pozycję, muszą nieustannie dostosowywać się do zmian zachodzących w otoczeniu. Z tego powodu przedsiębiorstwa poszukują nowych rozwiązań mających poprawić ich funkcjonowanie zarówno w obszarze wewnętrznym – organizacyjnym oraz technicznym, jak i w obszarze zewnętrznym – czyli zaangażowania zewnętrznych podmiotów – klientów i partnerów. Funkcjonowanie na rynku wiąże się z koniecznością współpracy – zarówno krótko jak i długookresowej z dystrybutorami, dostawcami, firmami doradczymi oraz podwykonawcami, a wzrost w tym obszarze, czyli wzrost zewnętrzny, jak pokazuje ostatnie kilkanaście lat i sukces wielu firm działających w ramach gospodarki współdzielenia, jest bardziej istotny niż rozwój wewnętrzny. Dlatego też jednym z podstawowych czynników przyczyniających się do osiągnięcia sukcesu jest kształtowanie współpracy z uczestnikami rynku. W artykule przedstawiono sposób funkcjonowania oraz możliwości doskonalenia relacji, w jakie wchodzi przedsiębiorstwo z partnerami celem oferowania produktów lub świadczenia usług o jak największym znaczeniu innowacyjności. Celem pracy była ocena i analiza współpracy przedsiębiorstwa typu digital market place działającego na rynku produkcji na zlecenie z partnerami produkcyjnymi, ze szczególnym uwzględnieniem wpływu relacji partnerskich na jego funkcjonowanie. Przedmiotem badań było przedsiębiorstwo, zajmujące się digitalizacją tradycyjnego procesu produkcji na zlecenie za pomocą rozproszonej sieci partnerów produkcyjnych (produkcja rozproszona). Forma tzw. digital market place wymusza na badanym przedsiębiorstwie nieustanne doskonalenie narzędzi umożliwiających udostępnianie swoich usług potencjalnym nabywcom i dostawcom. Dlatego też odpowiedni dobór metod i narzędzi przez badane przedsiębiorstwo może znacząco wpłynąć na warunki i motywy podjęcia współpracy partnerów produkcyjnych przedsiębiorstwa, co znalazło swoje uzasadnienie w osiąganych wynikach. W artykule dokonano analizy literaturowej dotyczącej współpracy i relacji partnerskich z dostawcami w produkcji rozproszonej. Przedstawiono motywy podejmowania przez przedsiębiorstwa współpracy oraz ich efekty, odnosząc te kwestie do realiów rynku metalowego. Zaprezentowano także wyniki badań ankietowych, opisując czynniki wpływające na podjęcie decyzji o współpracy przedsiębiorstwa typu digital market place działającego na rynku produkcji na zlecenie z dostawcami ze szczególnym uwzględnieniem potrzeb doskonalenia ich relacji.

Słowa kluczowe: digital market place, doskonalenie relacji partnerskich, formy współpracy, sektor metalowy, produkcja rozproszona

Introduction

Nowadays, companies are involved in numerous and multifaceted connections with other market players. Not all of these relationships are permanent and not all of them can be called cooperation. This study focuses on the motives for cooperation and relations between suppliers and the Digital marketplace company operating in the contract manufacturing market.

Establishing cooperation between suppliers and a digital marketplace company operating in the contract manufacturing market creates many effects that can be

both positive and negative. Proper planning, selection, forms of cooperation, and therefore the type of business partner, reduces the risk of negative effects. However, the effects of cooperation may be immediate, i.e., they occur immediately after joint actions in the supply chain have been taken, but they may also be deferred. In this case, the effects will be visible and felt by cooperating companies only within a certain time horizon. There is no doubt that enterprises are guided by various, often different, premises in making decisions regarding establishing cooperation [5].

The motives for establishing cooperation mainly depend on the company's expectations of the benefits to emerge. Therefore, they also determine the choice of the type of entity with which the company intends to cooperate. Due to the high volatility and dynamics of the market, political and economic conditions, and constantly growing and changing customer needs, every organization is in a situation where the change (constant change) is a necessary element of its functioning in the long term. For this reason, companies are looking for new solutions to improve their functioning both in the internal - organizational and technical area, as well as in the external area - i.e., the involvement of external entities - customers and partners. New solutions related to technology, information flow, and process optimization are constantly appearing on the market, improving the management and efficiency of the company, aimed at improving the quality of products and a strong position of the company on the market [10]. They enable the improvement of entire production systems, individual processes, and even individual operations. They also allow for improving system management by streamlining and optimizing planning, organizing, steering, motivating, and controlling, as well as helping to obtain feedback information in a short time. However, even the best-organized company cannot cope in the market without well-developed relations with partners. Functioning on the market is associated with the need for both short and long-term cooperation with distributors, suppliers, consulting companies, and subcontractors, and the growth in this area, i.e., external growth, as shown by the last several years and the success of many companies operating within the sharing economy, is more important than the internal development of the company itself. This is due to the fact that the external growth strategy is less costly, less time-consuming, and thus also less risky than the internal growth strategy. Therefore, every company operating on the market, in this case, production on demand, must ask itself the following questions: Are the expected effects underlying the motives for cooperation? Do they appear in actuality, and to what extent? and whether and how should the relationship between the partners working together be improved? The answer to the questions posed is therefore the purpose of this study. The analysis was carried out based on surveys and interviews conducted among companies in the metal industry (suppliers - partners) and a company of the Digital marketplace type operating in the contract manufacturing market.

Testing methodology

The study aimed to evaluate and analyse the principles and forms of cooperation of a Digital marketplace company operating on the production market commissioned by production partners, with particular emphasis on the impact of partner relations on its functioning. Achieving the goal of the work required identification of the essence of cooperation based on the principles of sharing economy and improvement of relations between individual participants in the supply chain.

Achievement of the research goal was related to the following research questions:

- What is the purpose of collaborating on the principles of sharing economy?
- What are the main factors initiating cooperation with partners in the sharing economy model?
- What factors play a key role in relations between partners in the supply chain?
- How can the positive effects of cooperation be increased?

The work also uses documents covering the scope and structure of the tasks introduced in the area of cooperation with partners. The research method was also a questionnaire and direct interview conducted via the virtual platform of the surveyed company. The aim of the study was to collect opinions from randomly selected partners (producers of metal products) of a Digital market place company operating on the contract manufacturing market, on the factors that influenced the cooperation with it. The median test was used to check the representativeness of the obtained sample. The survey questionnaires were completed by target respondents, people in managerial positions, mainly from the area related to logistics, supply chain management or other related (e.g. procurement, production, distribution). During the survey, 200 questionnaires were collected, 12 of which were rejected for formal reasons.

Shaping collaborations based on the principles of sharing economy

A special form of cooperation of enterprises is cooperation based on the principles of *sharing economy*. According to the definition by Owyang, “it is an economic model in which commonly available technologies allow people to get what they need from each other” [16]. Finding the source of this phenomenon in the 1970s and practical use at the beginning of the 21st century, Jastrzebska and Legutko-Kobus note that the basis of the trend is sharing resources [9]. Most commonly, the sharing economy *or* collaborative economy refers to business models that operate through collaborative platforms that create a generally accessible market for the temporary use of goods or services, often provided by private individuals. The collaborative

economy thus comprises three categories of participants: service providers who share their goods, resources, time, or skills (they may be individuals offering services on an occasional basis or service providers professionally engaged in the provision of services); service users; intermediaries who connect suppliers with users via an online platform. However, the collaborative economy affects many sectors most dynamically in tourism (short-term rental) and transport. Its growing importance is evidenced by “*the use of the collaborative economy Eurobarometer*”, published in October 2018, in which almost one in four Europeans used services offered on platforms operating within the sharing economy [23]. According to PwC Poland’s calculations, 40% of Poles in Poland already know sharing economy services, 26% of whom actively use them. For more than half of people using such services, the most important advantage is the price. Experts estimate that the global revenue generated by the sharing economy will reach 335 billion dollars by 2025 in only five key sectors (financial services, professional services, transport, hospitality, and tourism) [14].

Companies offering production services in the model of distributed production are a completely new form of enterprise operating on the principles of sharing economy. In 2015, at the “World Economic Forum”, distributed production was recognized as one of the 10 fastest growing economic trends in the world. The phenomenon finds its foundation in the natural need of people to cooperate, help others and share their time and resources. Previously, this form of cooperation was limited only to family members, close and acquaintances. A turning point was the crisis in 2008, which became a catalyst for change and strengthened people’s need for savings [7]. Also, thanks to the intensive development of trade, services, and very fast popularization and access to the Internet, the number of users of applications and services basing their business model on the sharing economy increased. The second important factor influencing the success of the phenomenon is the human need to compete and limit distortions and exploitation and fraud. Taking into account the above factors, enterprises operating in the sharing economy model (e.g., Uber, Airbnb, and the surveyed entity), allow various entities and people to meet on a platform operated by another company to offer their services, including production services. In this case, the main factor initiating their cooperation is striving to maximize the use of their production capacity and thus achieve economies of scale [16]. They also include several important factors resulting from this type of cooperation, the most important of which include [20]:

- overcoming the constraints associated with carrying out effective, wide-ranging marketing activities or activities related to organizing the sales of their products or services, which is particularly important for the sector of small and medium-sized metal enterprises, which is the largest on the market,
- time savings resulting from the limited need for negotiation

- and concluding separate contracts – metal products, even of the same type, differ in dimensions, which undoubtedly affects their price, but when cooperating with a Digital marketplace company, it makes a valuation, which allows them to focus on the details of the order,
- greater product or service availability, which has a direct impact on increasing sales, and at the same time reducing costs by limiting the level of inventory and waste – this is possible thanks to the appropriate association of the customer with the production partner,
- increasing the level of service throughout the supply chain, including through better exchange of information between its participants operating based on partnership,
- more efficient operation (which also means a significant reduction in the order execution time and reduction of disruptions in delivery) by outsourcing processes not directly related to production to a partner, in this case, a digital marketplace, that performs a significant part of the tasks, i.e., acceptance of parts, quality control and their dispatch to the end customer, etc.,
- obtaining valuable commercial, technical and administrative information from partners,
- the possibility of shaping competitive prices through more efficient logistics service and reducing the level of damage,
- reducing the labor intensity of planning, steering, and controlling processes,
- faster company development, which is reflected in faster market share growth and higher sales growth than competitors.

Improving collaborative relationships based on the principles of sharing economy in the supply chain

The concept of relationships is very general and applies to all relations or dependencies between two or more entities of a given kind, between objects, concepts, and sizes [4]. Spyra, examining inter-organizational relations, “claims that these are interactions that take more orderly and permanent forms. These include relatively durable transactions, flows of resources and information and other contacts that arise between two or more organisations and between the organisation(s) concerned and its environment” [19]. Such a definition results from the systemic approach, whose main assumption when considering the relationship between partners is the existence of three areas: actors, activities, and resources. Referring to the relationship in the supply chain, it can be said that an individual entity in the examined case is a digital marketplace enterprise, which can use resources by cooperating or sharing with other participants(partners) in the chain [18].

Involving the relations between individual participants in the supply chain in the process of reflection, it is necessary to ask the following questions: How important is the introduction or anticipation of changes? What factors play a key role in relations between partners in the supply chain? How can the positive effects of cooperation be increased? The importance of certain resources, which are necessary to build an appropriate relationship, seems to be important here. According to Mofokeng and Chinomona, key resources will support partnership relations, while non-core ones will support dominance [15]. Nevertheless, it is equally important to improve the process of shaping relations between partners. Even a properly designed cooperation process can be ineffective if the relationships in it are not properly improved [11].

P. Grajewski, in the above-mentioned definition, draws attention to the issue of continuous improvement, which consists in the fact that most members of each organisation daily discover opportunities to improve the processes in which they participate, as well as find and implement solutions to increase productivity, quality of activities and products [8]. This problem is also emphasized by Chris, Lo, and Yeung, who write that improving processes is to improve quality and productivity, as well as reduce the costs of activities and, in the final assessment, contribute to the increase in the entire organization's effectiveness [3]. Ulaga and Eggert propose continuous cooperation in improving the following factors responsible for the relationship between partners in business relations [22]:

- improving the base offer,
- improving the purchase process and interaction between the parties,
- improving the operational processes on the buyer's side.

The improvement of the base offer mainly concerns the improvement of the quality of the provided product or service. It may also apply to the price of the purchasing entity. It is a good practice to constantly work on product features that are attractive to the buyer so that the buyer does not have to look for alternatives from competitors. An important element in the purchase and interaction process is the response time of the party providing the product to the buyer's inquiry. The shorter this time and the more the feedback is saturated with the information sought by the buyer, the more efficient the cooperation is. In a situation where the party providing the service or product is unable to respond in a timely manner, it is appropriate to use outsourcing. At this stage of improving cooperation, it is also worth paying attention to the personal relationship of the parties. If it is based on long-term contacts, it is good practice to maintain and even deepen cooperation. Facilitating operational processes by the supplier on the buyer's side may be an incentive for them to strengthen cooperation. The simultaneous engineering proposed by Bochtler and Laufenberg consists in the simultaneous undertaking of the product design process by both parties, which saves time and makes it easier to obtain satisfactory terms of cooperation and the final result. The platform of the examined company is an example of a tool supporting cooperation, allowing for a much more precise specification of requirements for technical elements of the target product [2].

Improving relationships between business partners is a continuous process. It requires knowledge of the other party's needs and the ability to meet them. Good practices developed by companies cooperating on a long-time basis indicate the need to develop deep mutual trust and efficient communication. It is also necessary to be ready for a continuous, clearly signalled, and mutually accepted change [21].

Determinants and implications of relationship improvement in cooperation with

a digital marketplace with production partners in the light of research

The studied digital marketplace was established in 2013 in the USA. Initially, as a service workshop for CNC machining (turning, milling, sheet metal bending), it collected experience in production on commission. In 2016, it launched a portal planned from the beginning of its activity, the aim of which was to enable customers to place orders based on a valuation calculated by an automatic pricing engine implemented on the website and to pass this order on to a distributed network of production partners. The market success and access to capital meant that the company operating based on the sharing economy and offering an IT product enabling distributed manufacturing began to look for expansion opportunities in Europe. The fruit of this search was the creation of a branch operating in Poland, which would ultimately cover the whole of Europe. This company, wanting to meet the requirements of the market and putting the good of the customer as one of the basic priorities, adopted the creation of a network of partners and improved its cooperation with particular emphasis on their relationships. A number of objectives have been set for each of these areas. The main ones include: increasing the number of partners and their satisfaction with cooperation as well as increasing the level of quality of manufactured products or services provided while expanding their scope. It was also assumed that the PDCA cycle will be a tool for improving the management process and development of cooperation in the examined enterprise (Fig.1).

In the first stage of improving partner relations, it was necessary to collect opinions from randomly selected partners (manufacturers of metal products) of a Digital marketplace company operating in the contract manufacturing market, regarding the factors that influenced cooperation with them, it provided a lot of valuable information. During the survey, 200 questionnaires were collected, of which 12 were rejected for formal reasons. A median test was used to check the representativeness of the sample obtained. Because this question made it possible to select several answers, as many as 15 categories were created, which were characterized by different frequencies of choice. However, due to the limited volume of this study, the aggregate results of the collected responses were presented (Fig. 2).



Fig. 1. Scheme of operation of the PDCA
Source: Own study

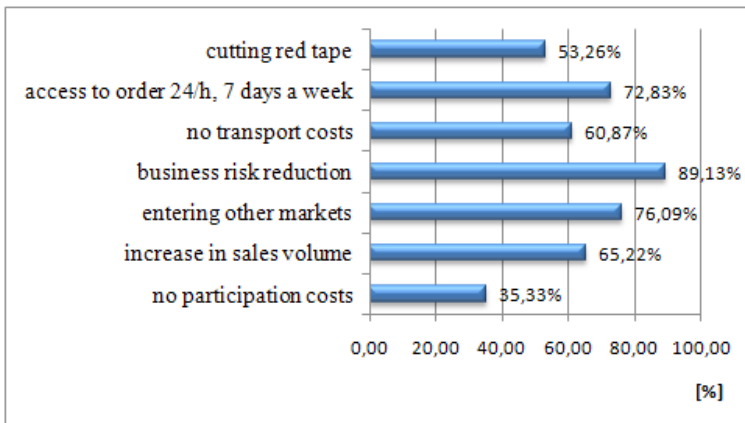


Fig. 2. Determinants of cooperation between the surveyed companies (partners) and a Digital marketplace company operating in the contract manufacturing market
Source: Own study

The largest share of responses was recorded in the case of the “*business risk reduction*” factor – almost 90% of the respondents chose that answer among others or just that answer. In the current situation (pandemic related to COVID 19, 2019-2022 and armed conflict in Ukraine, 2022) in which enterprises in the metal industry had to operate, financial stability has become a priority. A digital marketplace enterprise operating in the contract manufacturing market by cooperating with production partners ensures that they meet their obligations in a short time. What is important, their regulation is not dependent on the customer’s payment to the company. In turn, for almost 76% of partners, the “*entering other markets*” factor was important. After registration, a potential partner must first produce a test order to be able to receive production orders. After production, the Digital marketplace company receives

the parts, subjects them to quality control, and, if they are as expected, allows the company to cooperate, which allows the partner to enter new markets around the world and confirms such a high level of indications. Just over 72% of companies pointed to the factor “*access to order 24/h*” 7 days a week as the one that prompts them to cooperate. During this time, the partner can view the production orders that appear. They have a predetermined price and deadline. So, it is not an auction of bids. They also contain all data, 3D models and drawings, material, tolerances, and information on additional requirements such as e.g., material certificate, hardening, the need to prepare a measurement report on a CMM coordinate machine, etc. needed for production. In addition, the choice of the answer “*cutting red tape*” was an important factor for 53% of the units surveyed. The whole process takes place via the website, without the need to exchange e-mails. All the needed information can be found in one place. If a partner is interested in an order, they apply for it, and if the examined company selects them for that order, they receive the order and are obliged to produce it for a specified price and at a specified time. After production, they only need to report the completion of production on the website, upload photos and enter the dimensions of the package and add an invoice. It then receives a courier label, and the examined digital marketplace company deals with the collection of parts, quality control, and their shipment to the end customer. This is particularly important for almost 60% of the surveyed partners, who indicated the factor “*no transport costs*”, which is covered by a digital marketplace company. On the other hand, for 65% of the companies surveyed, the factor “*increase in sales volume*” played a role in establishing cooperation. Among the partners who indicated this factor as the most important, there was an increase in sales volume by up to 50% compared to the period before starting cooperation with the company under consideration. For almost 36%, “*no participation costs*” was the factor that prompted companies to cooperate. In this case, the partners of the digital marketplace company do not incur any costs for registration or the use of the site.

The survey also asked about the effects that occurred after the cooperation was established. Respondents of the surveyed companies had the opportunity to choose the answer from among the 13 given effects and indicate such effects that occurred and were not included in the study. Moreover, they were asked to mark the strength of the effect. The results of this part of the analysis, concerning the occurrence of the expected effects in the surveyed companies, which were also the motives for cooperation, are presented in Fig. 3a-g. Due to the volumetric framework of the study, the analysis of the other observed effects was not included.

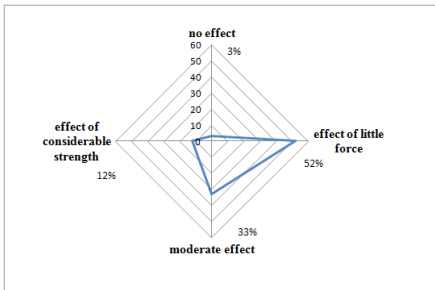


Fig. 3a. Cutting red tape
Source: Own study

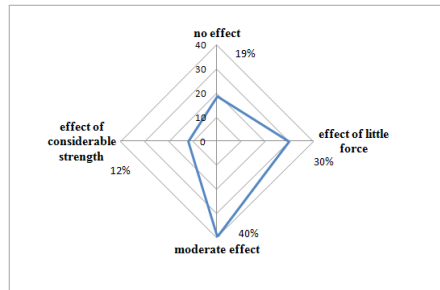


Fig. 3b. Access to order 24/h, 7 days a week
Source: Own study

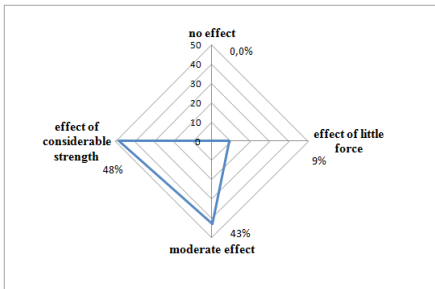


Fig. 3c. No transport costs
Source: Own study

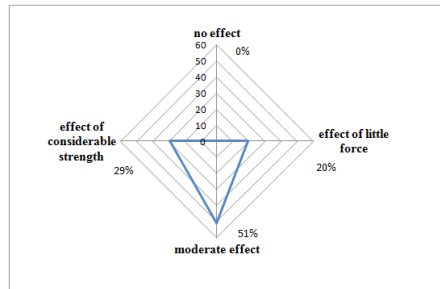


Fig. 3d. Business risk reduction
Source: Own study

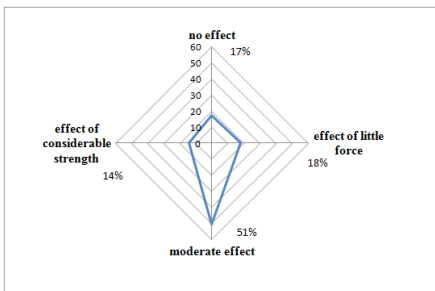


Fig. 3e. Entering other markets
Source: Own study

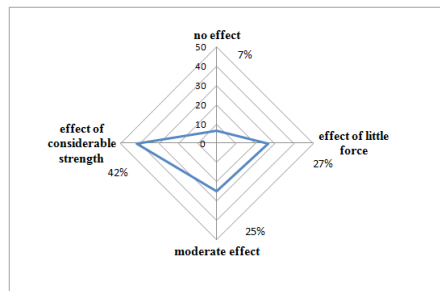


Fig. 3f. Increase in sales volume
Source: Own study

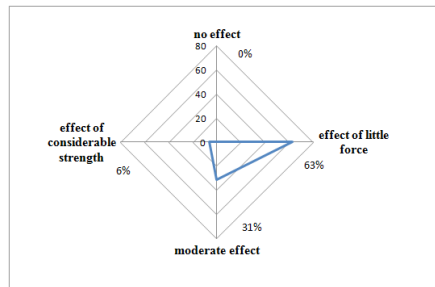


Fig. 3g. No participation costs
Source: Own study

The most frequently noted effect was „reducing the business risk” – as many as 89% of the surveyed partners indicated this answer. However, in most cases (51%) its strength was recorded at a moderate level. At the same time, it should be noted that among the companies that indicated a “desire to reduce the risk of operations” as a motive for cooperation in the supply chain, an effect of significant strength occurred in 29%.

In turn, “entering other markets” was the reason for establishing cooperation by 76% of the surveyed companies. The occurrence of this effect of significant strength was recorded by the lowest percentage of surveyed enterprises – 14%. On the other hand, among the companies for which ‘access to orders’ was the motive for cooperation, only 12% confirmation of the occurrence of this effect was recorded. What’s more, this effect of slight and moderate strength occurred in as many as 69% of the subjects.

The “*no participation costs*” effect was noted in 35 % of the companies surveyed, with only 6 % of the companies indicating that this was a significantly strong effect. Concerning the occurrence of *the* “no cost of participation” effect, it can be noted that the companies surveyed most often noted a minor improvement (63%). The motive for cooperation related to the “lack of transport and packaging costs and quality” was important for 61% of the surveyed companies. There is a large coverage of expectations with the occurrence of this effect – as many as 91% of respondents said that this effect occurred to a significant or moderate degree.

“Reducing bureaucracy” was the motive for the action (establishing cooperation in the supply chain) of 53% of the surveyed entities. After starting cooperation, this effect was noticed in 97% of the surveyed companies, but the most frequently marked answers indicated a weak and moderate strength of the effect (84.7%).

An extension of the obtained research results regarding the motives for cooperation was the assessment of activities aimed at improving the relationship between suppliers (partners) and a digital marketplace company. The form of the so-called digital marketplace forces the examined company to constantly improve the tools that enable the provision of its services to potential buyers and suppliers. Therefore, the appropriate selection of methods and tools by the examined digital marketplace company significantly affects the terms of cooperation both on the part of customers and production partners of the company, which is justified by the results achieved. To assess the need of improving the process of cooperation with partners and improving relations with them, selected areas were identified, i.e.: cooperation and relationship management strategy, partner service on the platform, response to practical suggestions, and then activities that significantly influenced the development of relations with partners along with their effects were identified (tab. 1).

Table 1. Areas and effects of activities that significantly influenced the development of relations between the examined company and its partners

Areas of improvement needs	Improvement activities	Effects of improvement activities
Collaboration and relationship management strategy	Hiring a partner network manager for the Eastern Europe region. Their key tasks include acquisition, i.e., acquiring partners, onboarding, i.e., a process aimed at familiarizing partners with the principles of cooperation and obtaining a test order, and retention - activating partners who stopped visiting the website.	There has been an increase in the number of new registrations from an average of 16 per month to an average of 58 per month in the next 5 months, an increase of 362%.
Collaboration and relationship management strategy	Hiring an affiliate network marketing manager had two primary goals: acquisition of partners of the first stage of the acquisition process from network managers, i.e., searching for partners, building a strategy and channels of communication with partners to streamline all processes related to the management of the partner network.	<p>Establishing a standard acquisition process as follows:</p> <p>Partner registration in the system. At this stage, confidentiality and cooperation agreements are signed (digitally). Completing the profile by the partner and registration and participation in the webinar, where candidates for partners are informed about what cooperation looks like, what to expect from it and what are its rules. Test order production.</p> <p>Trial period. If the third step is successful, the next one is accepting the partner for a trial period, in which the new partner is subject to quantity and amount limits for the available orders.</p> <p>After completing the trial period, the partner becomes trusted. The limits are increased and the partner has the option to unlock additional options: shipping directly to the customer and automatic order acceptance. Unlocking these options depends on the partner's rating, which consists of 5 elements:</p> <p>Quality, the RMA factor is taken into account, and calculated based on quality control;</p> <p>Timeliness, the system checks whether the order was produced on time;</p> <p>Packaging - the quality control department manually adds a rating for packaging;</p>

Tab. 1. cd.

		<p>Communication, the production manager of a given order adds this assessment manually;</p> <p>Activity, the system automatically calculates this rating based on the partner's activity on the site.</p> <p>There has been an increase in the number of registrations of new partners from 483 in March-July 2021 to 3253 in August-November 2021, an increase of 842% on a monthly average</p>
Partner service on the platform	Introduction of automatic order acceptance options for trusted partners	<p>The supply chain has been shortened.</p> <p>A large number of orders, stable quality, good punctuality, as well as communication, are the most desirable partner profile.</p> <p>Due to allowing such partners to ship directly to the company's customers, costly and time-consuming elements such as transport to the company's headquarters and quality control have disappeared from the order fulfilment process.</p> <p>Reducing bureaucracy.</p> <p>Thanks to the automatic acceptance of orders by the best partners, the following steps have been removed from the "order fulfilment" process: evaluation of partner applications for a given order and selection of a partner for this order.</p> <p>Rewarding the best.</p> <p>A partner not having to wait for the result of their application and knowing that their order is sent directly to the customer of the examined company experiences increased satisfaction with the cooperation, and is additionally motivated not to lose these opportunities due to production errors or untimely delivery.</p>

Tab. 1. cd.

Partner service on the platform	<p>Simplification of the registration and application process for the test order. It is crucial in building the basis for a future relationship. It also performs two key functions:</p> <p>The partner has the opportunity to become acquainted with the principles of cooperation on the example of a real process but without the pressure associated with a possible complaint and failure to meet the deadline.</p> <p>The examined company has a chance to learn about the partner's work standards and, above all, to verify the quality of the services offered by this partner.</p>	<p>There was an increase in the average conversions on a monthly basis from 14.8% in weeks 43-45 to 22.2% in weeks 46-48, an increase of 33.33% or 7.4 p.p.</p>
Partner service on the platform	<p>Introduction of partner statuses:</p> <p>Registered - applies to a candidate for a partner who has not undertaken a test order;</p> <p>Test part - refers to a candidate for a partner who is in the process of producing a test order;</p> <p>Trial period - applies to a partner who has successfully produced a test order and is on a trial period;</p> <p>Trusted - applies to a partner who has successfully completed the trial period.</p> <p>Blacklist - refers to a partner with whom the enterprise has decided to break off cooperation, or change the candidate to a partner who unsuccessfully produced a test order.</p>	<p>Each partner can see their status and related information on their account profile page. This information serves two functions for the partner: motivating and informative. For the examined company, the partner's motivation is an undoubted value, and a partner knowing what to expect from cooperation and having a clearly defined development path in the network, naturally enters into a deeper relationship with the company.</p>
Response to practical suggestions	<p>Introduction of a series of meetings of network managers with partners with a „Trusted” status: Meetings are held on the Clikeemeting platform in the form of video conferences once a month. During the meetings, the digital marketplace informs the partners about the plans for the development of the network, procedures, tools, etc., and asks for their opinion about them.</p>	<p>Partners report their ideas, many of which have been implemented by the surveyed company and others are in the process of being implemented.</p>

Source: Own study based on the company's source data

An important element during the research on the effects of the implemented improvement activities in the area of relationships with company partners was conducting a partner satisfaction survey. For this purpose, studies were carried out using the simplified NPS method. After each completed order, the partners had the opportunity to complete a short questionnaire (153 questionnaires were obtained), in which they assessed their satisfaction on a 5-point scale. A summary of their results is shown in Fig.4.

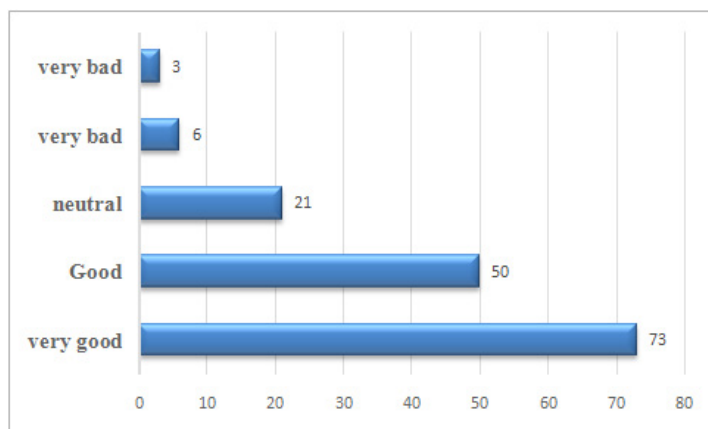


Fig.4. Results of the partner satisfaction survey with cooperation with a digital marketplace company
Source: Own study

Based on the compiled test results (Fig.4) the value of the NPS coefficient was calculated at the level of 60 points. Considering that the result above 50 points is considered excellent in the literature, it should be concluded that the overall activities undertaken by the examined company to develop and improve relationships with its production partners are very good.

Discussion and conclusion

In the market reality, there are many forms of cooperation between companies, described on numerous occasions in the scientific literature. Many criteria are distinguished, according to which numerous authors differentiate the forms of cooperation between economic entities. J. Duraj presents a fairly clear division in one of his works. It divides the forms of cooperation of enterprises into cooperative and concentration [6]. Whereas Ph. Kotler pays special attention to the strategic alliances themselves. According to him, they are the most appropriate form of close cooperation between companies, building their competitive advantage in a

given area [12]. Another form of defence against the competition is the so-called personalizing cooperation, i.e., building a partnership. Partnership characterized as a relationship based on cooperation and beneficial to both parties can be shaped between the organization and consumers, trade intermediaries, producers, suppliers, employees, influential institutions, and others [13]. On the other hand, according to M. Romanowska, the justification for undertaking such close cooperation between companies is found in the theory of transaction costs. The author notes that companies, striving to reduce these costs and improve their competitive position, develop cooperation with both suppliers and customers, and even, in some cases, with competitors. According to M. Romanowska, the greatest degree of reduction in transaction costs has enterprises operating in close links of the same chain of economic activity, as it happens, for example, in production and distribution [17].

The most common reasons for establishing cooperation are, according to Ph. Kotler [12]:

- meeting the needs of consumers in a given market and in the technological area,
- management of all stocks so that they turn into profits, and not bring losses,
- calculations of the costs of entering new markets,
- enhancing activities aimed at introducing a new product,
- using the economies of scale effect,
- bypassing legal and commercial barriers,
- reducing costs related to the termination of activity in a given area,
- extending the area of operation of the company.

Establishing cooperation between companies, based not only on mutual financial benefits but also giving synergistic effects, is not an easy thing. It is especially difficult in running a business. There are many obstacles and barriers that make it difficult for companies to undertake joint activities and affect the subsequent operation of cooperating companies. The longer the period of cooperation between companies is, the tighter their cooperation usually becomes. The search for new solutions that would enable companies to develop further, and on the other hand, in times of economic crisis, allowing them to prosper at the level assumed by them, becomes a priority for the managers. Establishing business relationships, based not only on concluding financially beneficial contracts but also on generating mutual trust between partners, may become the key to coping with fierce competition and a difficult economic situation. Quite a significant boom in the subject of cooperation, as well as the partnership itself in the activities of companies, could be noticed in the nineties of the last century, although these issues were discussed much earlier. Among the authors dealing with the issues of forms of cooperation and the resulting relationships undertaken by companies, one can distinguish, among others: Ph. Kotler, J. Benoy, A. J. Bytheway, F. Carreras, H. Chwistecka-Dudek, J. Cygler, M. J. Maloni, S. Sudarsandam, A. Sulejewicz, as also Z. Wilimowska. However, there are

not many scientific items related strictly to shaping partnership relations between suppliers, customers, and a digital marketplace company operating in the contract manufacturing market in the literature. In the market reality, the development of the producers' sales network with a digital marketplace company somehow forces it to develop such methods of cooperation with these companies that are based on the principles of partnership. In this case, improving the relationship is essential. In addition, the presented study contains an example of the application of the proposed path of improving the relationship between partners and a Digital marketplace company in the contract manufacturing market, which is missing, for example, in the study [1] combining the issues of quality management, supply chains, and sustainable development.

Summary

In today's market realities, appropriate management of the supply network and relationships with its participants usually lies with the so-called leader, who in the analysed case was the company being the digital marketplace operating on the contract manufacturing market. Based on empirical research, it was indicated which factors were decisive for the companies of the studied metal industry in the process of establishing cooperation (these were factors related to the reduction of the risk of operations – 89%). Moreover, based on the studies carried out, it was also determined whether the desired benefit actually occurred and what strength it was characterized by. In the case described in this paper, all the presented activities of improving relationships (*establishing a standard partner acquisition process, introducing a partner status system, introducing the option of automatic order acceptance and direct shipping for the best partners, and employing a partner network marketing manager*) are aimed at facilitating and improving the implementation of joint activities conducted by the surveyed digital marketplace company operating on the production market on request with production partners. In the case under study, the effect of these activities was:

- an increase in the number of developed and implemented ideas aimed at improving cooperation in the studied network,
- employment of a partner network manager for the Eastern Europe region resulted in an increase in the number of new registrations from an average of 16 per month to an average of 58 per month in the subsequent 5 months, which is an increase by 362%,
- employment of a partner network marketing manager increased the number of new partner registrations from 483 in the period March-July 2021 to 3253 in the period August-November 2021, which is an increase by 842% on an average monthly basis;

- introduction of the automatic order acceptance option for trusted partners resulted in a decrease in the average level of placing time from 75 hours in the 44th week to 24 hours in the 46th week of 2021, which is a decrease by 68% in two weeks.;
- simplification of the registration and application process for a test order resulted in an increase in the average monthly conversion from 14.8% in weeks 43-45 to 22.2% in weeks 46-48, which is an increase by 33.33%).

The implemented operating procedures have another great advantage - they eliminate areas where problem situations may occur, and thus allow, already at the stage of acquiring a partner for cooperation, for avoiding conflicts between cooperating entities. A properly selected strategy of cooperation between the examined company and its partners in the presented supply chain brings many benefits to both the producer and the consumer and undoubtedly has a positive impact on the level of customer service provided by the examined company. Confirmation of all the introduced activities are the research on the level of partners' satisfaction with cooperation with the examined company, which is reflected in the obtained value of the NPS coefficient greater than 50, which proves that all activities undertaken by the examined company in order to develop and improve relations with its production partners are assessed very positively. Therefore, it can be concluded that the surveyed companies have taken the right solutions regarding the development of cooperation and relations because the expected results have been largely achieved.

BIBLIOGRAPHY

- [1] Bastas, A., Liyanage, K., 2019. Integrated quality and supply chain management business diagnostics for organizational sustainability improvement. *Sustainable Production and Consumption*, 17, 11-30. [online] Available at: <https://doi.org/10.1016/j.spc.2018.09.001> [20 April 2022].
- [2] Bochtler, W., Laufenberg, L., 1995. *Simultaneous engineering – Erfahrungen aus der Industrie für die Industrie*. Berlin: Springer.
- [3] Chris, K.Y., Lo, A., Yeung, C.L., 2018. Quality management standards, institutionalization and organizational implications: A longitudinal analysis. *International Journal of Production Economics*, 200, 231-239, ISSN 0925-5273, [Retrieved November 19, 2019], <https://doi.org/10.1016/j.ijpe.2018.03.028>. [online]. Available at: https://ira.lib.polyu.edu.hk/bitstream/10397/79876/1/1312_IJPE_Quality_Management_Standards.pdf [20 April 2022].
- [4] Ciesielski, M., Długosz, J., 2010. *Strategie łańcuchów dostaw*. Warszawa: Polskie Wydawnictwo Ekonomiczne.
- [5] Ciesielski, M., Zieniewicz, S., 2005. *Partnerstwo i dominacja*. *Gospodarka Materiałowa i Logistyka*, 4, 2-5.
- [6] Duraj, J., 2000. *Podstawy ekonomiki przedsiębiorstwa*. Warszawa: Polskie Wydawnictwo Ekonomiczne.
- [7] Europejski System Analiz Strategicznych i Politycznych. ESPAS. Światowe tendencje do 2030 r.: czy UE jest w stanie sprostać przyszłym wyzwaniom? [online]. Available at: espas.eu/files/generated/document/en/espas-report-2015pl.pdf. [04 May 2022].

- [8] Grajewski, P., (2007). Organizacja procesowa. Warszawa: Polskie Wydawnictwo Ekonomiczne.
- [9] Jastrzębska, E., Legutko-Kobus, P., (2017). Ekonomia współpracy - definicje, klasyfikacje i dobre praktyki. Zarządzanie publiczne, 4 (40) [online]. Available at: https://www.researchgate.net/publication/325746548_Ekonomia_wspolpracy_-_definicje_klasyfikacje_i_dobre_praktyki [02 May 2022].
- [10] Kleinaltenkamp, M., Plinke, W., and Geiger, I., 2011. Business Relationship Management and Marketing. Mastering Business Markets, Berlin: Springer, 118.
- [11] Kostrzewa, M., 2018. Zarządzanie relacjami w logistyce, Innowacje w zarządzaniu i inżynierii produkcji, T.2. Gdańsk: Politechnika Gdańska.
- [12] Kotler, Ph., 2005. Marketing. Poznań: Rebis.
- [13] Krupski, R., Piwoni-Krzyszowska, E., (2003). Współpraca przedsiębiorstw jako strategiczna przewaga konkurencyjna, W: Czarnoty, J. Moszkowicza, M. (red.) poszukiwaniu strategicznych przewag konkurencyjnych. Część II, Częstochowa: Wydawnictwo Wydziału Zarządzania Politechniki Częstochowskiej.
- [14] Łuba, P., (2016). (Współ)dział i rządź! Twój nowy model biznesowy jeszcze nie istnieje. Available at: <https://www.pwc.pl/pl/pdf/ekonomia-wspoldzielenia-1-raport-pwc.pdf> [04 May 2022].
- [15] Mofokeng, T.M., Chinomona, R., 2019. Supply chain partnership supply chain collaboration and supply chain integration as the antecedents of supply chain performance. South African Journal of Business Management, 50 (1), a193 DOI: <https://doi.org/10.4102/sajbm.v50i1.193> [20 April 2022].
- [16] Owyang, J., 2013. The Collaborative Economy, Altimeter Research Theme: Digital Economies. [online]. Available at: <https://www.slideshare.net/Altimeter/the-collaborative-economy> [04 May 2022].
- [17] Romanowska, M., 1997. Alianse strategiczne przedsiębiorstwa. Warszawa: Polskie Wydawnictwo Ekonomiczne.
- [18] Schary, Ph. B., Skjøtt-Larsen, T., 2002. Zarządzanie globalnym łańcuchem podaży. Warszawa: Polskie Wydawnictwo Naukowe.
- [19] Spyra, Z., 2007. Kanały dystrybucji. Kształtowanie relacji. Warszawa: Wydawnictwa Fachowe CeDeWu.pl.
- [20] Soh, K. L., Jayaraman, K., Yen, T. S., Kiumarsi, S., 2016. The role of suppliers in establishing buyer-supplier relationship towards better supplier performance, Int. J. Product. Qual. Manag, 17, 183-197, Doi:10.1504/IJPQM.2016.074466
- [21] Tanskanen, K., Aminoff, A., 2015. Buyer and supplier attractiveness in a strategic relationship - a dyadic multiple-case study. Industrial Marketing Management 50, 128-141, DOI:10.1016/j.indmarman.2015.04.011.
- [22] Ulaga, W., Eggert, A., 2006. Value-based differentiation in business relationships: Gaining and sustaining key supplier status. Journal of Marketing, 70(1), 119-136.
- [23] Wealth for Living, 2021. [online]. Available at: <https://wealth4living.net/finanse/sharing-economy> [04 May 2022].
- [24] Weele, A.J. Van., Rozemeijer, F., 2022. Purchasing and supply chain management: analysis, strategy, planning and practice. Hampshire: Cengage Learning.