THE FORMATION OF PARTNERSHIP MODEL IN SUPPLY CHAIN MANAGEMENT

Svetlana Suvorova¹ [0000-0002-2807-3151], Anna Tevanyan² [0000-0001-5404-2706]
¹Peter the Great St. Petersburg Polytechnic University, Higher School of Service and Trade, 29 Polytechnicheskaya str., Saint-Petersburg, Russia, 195251
²Diplomatic Academy of the Ministry of Foreign Affairs of the Russian Federation
1510 Lexington Ave., apt. 8D, New York, NY, USA 10029
(Email: suvorova_sd@mail.ru)

Abstract. Supply chain management is a complex and systematic process of moving commodity flows from the moment of production planning to the further distribution of products in accordance with the market conditions and the target segment requirements. Meanwhile, the effectiveness of the supply chain can be achieved through the formation of partnerships that are aimed at organizing comprehensive cooperation of economic entities with its inalienable integration into the logistics chain of their own production. Also, such partnerships are based on the desire of economic entities to concentrate the required resources in the area of the irown competence, whereas to delegate the other functions to the third-party enterprises (for example, outsourcing them). In order to establish a partnership, the parties involved must determine and agree on possible motivators, contributing factors, business process components and expected results, taking into account the balance of power, specialization, readiness for cooperation of stakeholders, possible damage and distribution of risks, importance of the applicant, reasons for withdrawal from the contract and "force majeure" circumstances. This proposed model of partnership in supply chain management allows reducing the production cycle, the maintenance costs and the "money-money" cycle. It also allows improving the performance of the supply chain, optimizing logistics costs, which, in turn, creates favorable conditions for reducing foreign economic costs, increasing profits and focusing the core competencies of the enterprise-manufacturer.

Author keywords: the supply chain management, development partnerships, the partnership model, the algorithm of implementation of the partnership cooperation/

1. Introduction
At present, there is an opinion in the scientific community that an effective supply chain is built on the basis of partnership. Along with this, today more and more companies that are involved in the process of commodity circulation stay focused on the development of comprehensive cooperation and its simultaneous integration into the logistics chain of their own production. The modern supply chain management is a complex and systematic process that includes detailed design, organization, coordination and control associated with the movement of commodity flow from the moment of purchase planning through further production and distribution in accordance with market conditions and costs rationalization. The main objective of this process is to meet the needs of the end segment.

The saturation, unevenness, speed and complexity of the commodity market actualize the need to define special conditions that will help economic entities to overcome the existing barriers and consider the vectors off or ward-looking development in the formation of an effective supply chain. The purpose of the study is determined by the global market fluctuations and by the inevitability of the progressive and low-cost technologies creation (that are essentially optimal and rational), that are forming the channels of commodity circulation integrated into a single supply chain in both domestic and international markets. In this regard, it is necessary to balance correctly the forces of the stakeholders according to their mutual importance and dependence, differentiation and specialization that are aimed at cooperation.

2. Materials and methods
Determination of the most important parameters (Table 1), which are considered to be the goals and objectives of the supply chain, should be carried out on the desire of economic entities to concentrate on the management of such resources that are in the area of their own competence. At the same time, all other operations and functions should be delegated to third-party enterprises [1], for example, to the outsource companies.
Table 1 – The characteristics of the parameters that influence the formation of supply chain partnerships in the commodity market

| Parameter                                | Characteristic                                                                                                                                                                                                 |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The interdependence of the parties       | During the process of forming the economic relations in the distribution and logistics service sector, it is necessary to define, take into account and support the interests of all entities that are involved in the process of commodity circulation. |
| The degree of regular operations specialization | High sensitivity of logistics service to the economies of scale (cost reduction through the volume rise), and, as a result, increasing of the supply attractiveness and attracting of qualified logisticians. |
| The power balance                        | Precise awareness and undisputed recognition by logistics service providers of the leading role of product manufacturers in supply chain management as a dominant of the integration process. |
| The cooperation                          | Differentiation, specialization, specificity and complete clarity in the distribution of powers in supply chain relations, which form the ideal conditions for cooperation with logistics service providers. |

At the end of the XX century more than 20 participants of the supply chain Ohio University forum presented the first variable model of logistics partnership (Fig. 1) based on the following assumptions [2]:
- Firstly, of providing the opportunity to determine the relationship between the logistics process participants that have hidden reserves;
- Secondly, of coordination and evaluation of the parties involved in the identified expectations.

![Figure 1-The variable supply chain partnership model](image)

Along with that during building a partnerships model in supply chain, the focus should be set on the following requirements:
- of the preliminary selection of suppliers that were categorized as potential ones on the basis of their assessment with the maximum dropout of the unfavorable segment;
- of the identification of the most attractive type of partnership and determination of the most attractive business processes components that require improvement;
- of paying a maximum attention to the most powerful motivators, the significant contributing factors, the most important structural components of business processes and to the expected results.
Motivators or preparedness to partner. The identification of motivators should be accompanied by awareness of the asset-cost effectiveness (including the desired savings on production costs, the distribution or information processing); quality of service (before and after purchase); marketing advantages (in connection with data exchange), profit growth and overall stability. Potential partners should openly discuss possible disputable points and motives, justifying the target values of their expectations.

Contributing factors. At the discussion stage, the representatives of the parties jointly consider the organizational environment in which the partnership will be built, analyze the factors favorable for cooperation and identify the level of their development. Among them, the most crucial are: compatibility of corporate cultures and management methods; the presence of common competitors and consumers; congruence of companies; advantageous locations; exclusive conditions; previous experience of cooperation. Sometimes it takes a lot of effort to conduct a thorough and accurate assessment of these factors, but it’s worth it. After all, the better the assessment of contributing factors and motivators - the more convincing the arguments and the intentions in favor of partnership, and the more favorable cooperation shall be [3].

Business process components. They form the structure of the partnership model with regard to the plan and control of joint economic activities of involved parties with adequate distribution of income and risks for the Russian Federation [4]. At this stage, it is necessary to conduct a comprehensive economic analysis of the economic activities of each structural unit and develop a phased plan (operational and long-term) for the achievement of the desired level in partnership model development. It is the plans that contribute to identifying of those components of management that lead to deficiencies and destruction of the enterprise functionality.

Results. They state how the results correspond to the achievement of the overall goal and meet the expectations. An example of interaction in the supply chain is externalization. It favors the division of the economic activities between the participants with their subsequent synchronization. The following advantages can be highlighted: focus on core competencies; improve the product quality; reduce costs. As well as the following disadvantages can be allocated: loss of control over contractors; disclosure of commercial information.

As a rule, motivators and contributing factors determine the optimal type (level) of cooperation, whereas the components of business processes act as the structural elements of a partnership that can be regulated.

3. Results and discussion
After the decision to establish a partnership is made, it is necessary to carry out the procedure of selecting the potential partners that are ready to cooperate.

Firstly, it is required to arrange a search the potential partners that are ready for cooperation (for instance by reviewing materials in media, announcing of tenders; contacting with potential suppliers, visiting exhibitions, etc.)

Secondly, it is necessary to analyze and evaluate the selected suppliers using certain selection criteria such as the sales volume, customer or client base, financial discipline, efficiency of the sales system, loyalty program, location, reliability, financial stability, interest in partnership development, readiness for innovation, logistics organization.

Thirdly, on the basis of the conducted analysis it is necessary to choose the most promising supplier. Evaluation results are used for this purpose, and only the best supplier in the group is allowed to participate in the project.

Fourthly, it is required to notify the potential partner of its participation in the project. Based on the analysis of professional and specialized literature corresponding to the national and international standards, we can propose the following algorithm for forming a partnerships model in the supply chain (Fig.2).
In case of positive agreement, the partnership participants need to hold a joint meeting and discussion. As a result of this action, the type of partnership should be determined. Depending on mutual trust, the degree of participation and the functioning of the components of business processes, partnerships can be established at different levels.

Level I (low): formation of relations based on commercial basis. In this case, the stakeholders do not jointly develop performance indicators that satisfy them, but they can exchange information on the results achieved.

Figure 2 – The algorithm of partnership development
Level II (medium): limited coordination of activities or integration of some activities performed by the units of the stakeholders. Here, the performance indicators should be solely focused on the performance of each entity, regardless of how effectively the partner works.

Level III (high): consider the partner as your own complement. In this case, performance indicators are developed jointly and are oriented towards joint work.

The selected type (level) of partnership serves as the basis for the creation of the logistics supply chain Council and the formation of its organizational management structure (Fig.3).

![Figure 3- The recommended organizational structure for managing the partnership Council in the supply chain.](image)

By format of an expert meeting the members of the Council are required to submit reports on the evaluation of the current status of logistics infrastructure, exchange experience and mutual requirements, conduct analysis and adjustment of goals and objectives for further development. Then logisticians need to prepare the draft budget corresponding to the plan with indication of the main reference points and output parameters, and transfer them to Analytical Department to check for rationality and reconcile them with participants of cooperation [5,6, 7]. The final action is to define the financing source of possible changes and risks (Table 2).

| Type of Risk | Manufacturer, initiator of partnership | Partner |
|--------------|----------------------------------------|---------|
| The production risk, including negative output gap | There are outages that are planned for preventive maintenance. In order to reduce the risk of underutilization of production capacity, it is necessary to stockpile the sufficient amount of raw materials in advance (before the onset of the low-supply season). | Does not take this type of risk |
| The market risk | There are the reduced demand from independent buyers and the inability of the partnership participants to distribute the originally planned volume of products. At the same time, the market risk for the manufacturer is assessed as insignificant, since the unsold products in the current period will be distributed in the future. | |
| The price risk | The risk is with the limitation in the possibility to increase the prices of sold products proportionally. | Does not take this type of risk |
| The risk of losses during transportation and storage of goods | The risk of loss of product quality during storage is negligible due to: compliance with storage technologies; packaging that protects against damage and spoilage; high turnover; availability of a sufficient number of warehouses. | Partner takes the risk of product quality loss during transportation to independent buyers. |
| The currency risk | The manufacturer is exposed to currency risk as the cost of products sold in the foreign market is set in USD while it carries out the main expenses in rubles. | Does not carry significant currency risk under the considered transactions. |
Following the results of the project it is necessary to analyze and compare the results with expectations. In case of detection of unacceptable deviations, it is necessary to establish the causes and determine the regulators [8, 9, 10] aimed at their elimination.

Compliance with the above mentioned conditions will contribute to the compliance of the expected logistics system external indicators with the following values: increasing the delivery quality by 15%; reducing the production cycle time of the order up to 20% [11, 12]. As a result, it will improve the performance of the entire supply chain by 50%. At the same time, the expected internal indicators will tend to decrease. For example, the total cost of supply chain management may be reduced by up to 35%, the cost of order management up to 10%; production costs - up to 15%, the cost of financial services and planning services-up to 5%, return management-up to 15%, however the cost of information resources will increase by 15%. As a result, the cycle time "money-money" will be reduced to 20%.

As a result of the concluded partnership agreement, the following advantages can be achieved:
- Reduction of the "production cycle", which includes time reducing from the receipt of the application to the order of all necessary materials, start of production, manufacture of the product, receipt of products in stock, shipment to the finished installation.
- Business processes modeling allows to define "weak links" in production and to create the optimum model of deliveries that guarantees reduction of order time passing [13, 14, 15, 16, 17]. Limiting the production cycle time can be achieved by transferring non-core activities to outsourcing services. At the same time, digitalization of document flow and mechanization of technological operations in combination with rational schemes of goods movement and services of 4PL providers will help to speed up the delivery significantly.
- Improvement of the "supply chain performance" indicator (speed of the planning, procurement and production; speed and time of delivery) can be achieved by optimizing the operational processes of partners, speed of the distribute on chain, synchronization of production planning and optimization of product distribution schemes. Implementation of portal technologies for data exchange and management system "warehouse provider" will accelerate the processes of planning, organizing rapid procurement, fast production and quick shipments and reduce inventory levels at the initiator of the partnership, and, as a consequence, will enable a gradual transition to the pushing scheme management. This will help to achieve:
  - Optimization of logistics costs, accomplishment of the developed requirements norms, inventory reduction, rationing of administrative and economic processes, development of optimal schemes and routing of product delivery with the involvement of providers (including customs providers), will not only help to reduce costs, but also to bring them to a predetermined optimal level.
  - Improvement of the quality of all processes (including the final consumer) by reducing the cost of warranty service through the compliance with the requirements to quality supplies improvement, implementing of the self-control in manufacturing and waste management, increasing the accountability of providers of logistics. As a result, the level of inadequate quality products return will decrease.
  - Reduction of the "money-money" cycle (accelerating the working capital return) optimizes the turnover of working capital in terms of guarantee of compliance with payment schedules for the procured raw materials and components for production; receipt of funds from the sale of final products, commission payments to the third parties. The partnership will enhance customer satisfaction as well as will reduce the volume of the inventories and reserves [18, 19, 20, 21].

In the case of a positive decision to participate in a commercial partnership, the stakeholders need to further develop a procedure for withdrawal from the project. At that, the following points should be taken into account: the conclusions of the preliminary analysis of all possible causes and threats; the degree of possible damage; the level of significance of the applicant; the reasons for withdrawal from the contract (financial losses, commercial espionage, failure or violation of requirements, dissatisfaction with the development of the supply chain, etc.); "force majeure" circumstances. In addition, it is recommended to determine the volume and nature of all types of penalties (organizational, financial and other).

4. Summary
The results of the study confirm that the reviewed model is an effective tool not only in building new partnerships, but also in solving problems in existing ones. It helps to clarify the each stakeholder motivators in determination of their real interest in establishing partnerships, to study the conditions that facilitate or hinder cooperation, and to outline a plan for the relations creation and development. The model allows to harmonize the expectations, to determine the productive level of cooperation (type of relationship), to identify elements of business processes that require improvement, to achieve mutual understanding and to provide the required readiness for actions. The structure of the model can be used to assess the results achieved.

The formation of partnership in the supply chain has a positive impact on the speed and quality of movement of commodity flows, the creation of comfortable conditions for their distribution and the provision of the necessary service, which will accordingly contribute to: reducing of the production cycle, maintenance costs and "money-money" cycle; improving the performance of the supply chain, optimizing logistics costs on creating conditions for reducing foreign economic costs, increasing profits and focusing on the core competencies of each participant in the supply chain.

Partnership does not always lead to profit increase. It is justified only in the following cases: when the results of joint activities exceed the achievements of independent ones (the effect of positive synergy); when available resources are sufficient to develop close relationships with each supplier or consumer (due to the fact that the creation and development of partnerships requires high costs for communication, coordination and risk sharing); when joining the partnership is accompanied by a preliminary agreement of all expectations (input and output parameters) for further cooperation. At the same time, it should not be forgotten that the main objectives of the supply chain partnership are not only to increase the speed of delivery and to minimize costs, but also to improve the quality of service offered to the end user.

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