Edited by
Aleksander SŁADKOWSKI

ACTUAL PROBLEMS OF LOGISTICS

MONOGRAFIA

WYDAWNICTWO POLITECHNIKI ŚLĄSKIEJ

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DISTRIBUTION PROCESS ORGANIZATION AS PART OF EFFECTIVE CUSTOMER SERVICE

1. THE MAIN TASKS OF MODERN LOGISTICS

Satisfying customer needs is one of the main tasks of the companies operating in the market. Due to the spatial dispersion of customers, variations in demand during the customization of products and expectations of customers, entrepreneurs must demonstrate a high degree of flexibility in the implementation of their tasks. They are assisted in this action of logistics distribution, which enables to close the gaps that occur between the producers and the expectations of potential customers.

In recent years, both partners in the manufacturing industry, as well as innovative retailers bring the most advanced logistics technologies for rapid and efficient output to meet the changing needs of consumers. So recognize the benefits of the transition to the philosophy of supply chain management, as the foundation of a good and efficient management. In the area of distribution the ECR - efficient customer response service strategy expresses this philosophy. According to the assumptions, production and trade enterprises and other participants of the chain (e.g. providers of logistics services) work closely together to better, faster and more effectively meet the needs of the customer.

Common wish is to maximize the global efficiency of the whole chain, instead of the traditional focus on the performance of each link in the chain, leading to a reduction in overall system costs, inventory levels and capital, while adding value to the ultimate customer. This is possible through the use of modern methods of management, logistics concepts and technologies. The ultimate goal is to build an efficient ECR in terms of cost system that directly responds to the specific needs of the consumer, based on partnerships between suppliers, distributors and retailers, and oriented to maximize customer satisfaction. This is to enable the efficient flow of information and the efficient flow of products from the production line to the points of sale, assuming the optimization of the flow and minimize the effort from the participants in the chain.

For this reason, one of the most important issues that must be considered by logisticians is the choice of means and transport routes appropriate for the movement of products offered in the market.

2. THE ROLE AND IMPORTANCE OF DISTRIBUTION

Distribution includes activities related to the overcoming of spatial, temporal, and quantitative assortment differences between the sphere of production and the sphere of

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consumption. There is an indirect link between production and consumption, and the task must be to fill in the gaps separating these two spheres. These gaps include [11]:

- Time gap. Consumers make a variety of purchases of certain items in a more or less discontinuous way - at certain intervals, while most companies have production on a continuous basis in order to achieve savings in production costs.
- Spatial gap. Consumers are usually scattered in the market, while the producers are located in a few places, so they always share a certain distance.
- Quantitative gap. In a certain time enterprises produce large quantities of products, while consumers need much smaller quantities, often minimal.
- Assortment gap. The range of products manufactured by the company is limited, while consumers have many needs, to meet that needs a great diversity of products is necessary.
- Information gap. Consumers do not always know about the availability of the source or on-being products that they need. Manufacturers and can often not know who they are and where they are their potential customers.

Distribution is an integrated system of information and goods – Fig. 1 presents the distribution structure. This includes creating appropriate channels for the flow of goods, which, thanks to adequate capacity will create the ability to provide a high level of customer service [1]. These channels can be created by the manufacturer, but this usually requires a large resource allocation, and resources. So often companies use the services of external providers to organize distribution of selected elements of the process or the process as a whole.

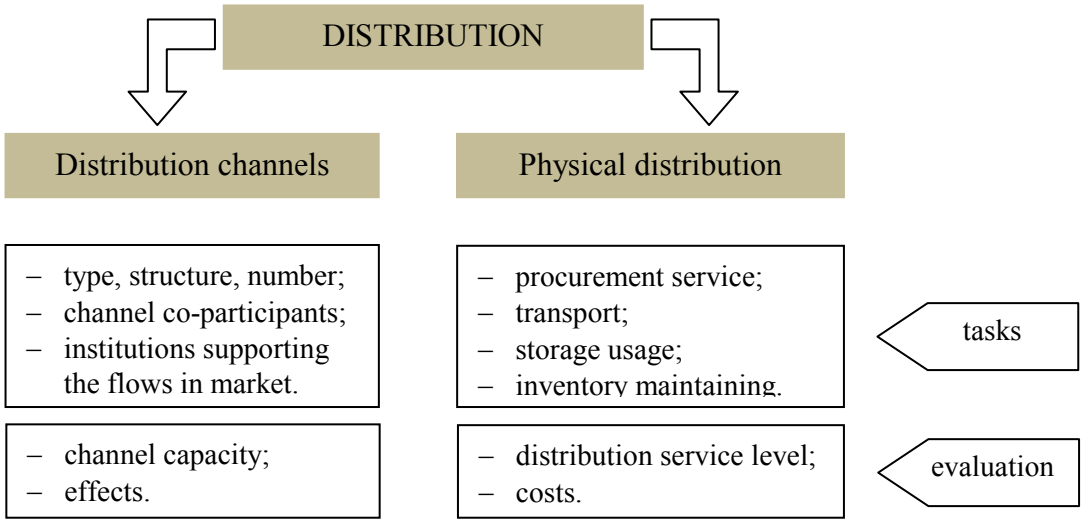

Fig. 1. Distribution structure
Rys. 1. Struktura dystrybucji

2.1. Distribution functions

The logistics distribution system performs the following functions:

- **coordination** - seek to balance supply with demand. It is based on a combination of the expectations of buyers and sellers in such a way that the buyer is able to purchase the necessary product and the manufacturer realized the objectives of his business. It consists of two steps: the collection and transmission of information on demand to the producers and concluding sale and purchase transactions;
- **organizational** – which are related to the existing product. It includes all the processes, which are done on the product in order to bring supply and demand. The

most important steps are: transport, storage, processing trade, the transformation of production range into the commercial assortment and the creation of appropriate sales conditions [6].

In another sense, considering the allocation of logistics operations the following distribution functions can be divided into [11]:

- *Pre-trade function*, which includes the collection and transmission of market information, promotion of products and companies, exploration and reporting of purchase offers, establishing business contacts and negotiating the terms of contracts posing legal basis for the flow of ownership of shipped products.
- *Functions related to transactions of purchase and sale*, which among other things include: order handling, transport, use, storage, inventories, trade processing, transformation of the production assortment into commercial range, products transfer to agents, buyers and final recipients, transfer of receivables, risk acquisition.
- *Post-trade functions* including the implementation of the rights of buyers with a warranty and guarantee to provide customers with a variety of services, installation, repair, delivery and customers satisfaction survey, collecting information about their expectations, investigating the causes of the customer's decreasing number.

These functions both in the first and second basis are carried out by distribution channels or the internal structure of the company and external institutions, with the help of which the product is moved from producers to consumers.

a) Marketing channels - an element of logistics systems

One of the definitions of the distribution channel identifies it with a set of marketing channels interdependent as a group of organizations which are involved in the delivery of a product or service to the user or consumer. Logistics channel is primarily a logistics system. There are three flow types specific for every logistics system, which are also present in the logistics channel:

- goods flow;
- information flow steering products movement - complex contracts;
- value flow - payments for products.

Distribution channel stands out against other logistics systems that are present in the other flows. These are:

- flow of commercial information, the level of demand and identify potential buyers, it affects long-term decisions made by organizations - participants of the channel does not affect the direct flow of products should therefore be distinguished from the flow of orders;
- flow of promotional information that encourage buyers to purchase certain products, specifying the terms and conditions of the transaction purchase - sale;

These flows are in the area concerned with commercial sphere and are not directly related to logistics.

For efficient functioning of the distribution channel there must be a close relationship between all the flows which takes place inside it. This implies the most important function of the distribution channel: integrating all occurring flows within the channel. When choosing distribution channels (Fig. 2 [1]) should involve not only the managers of the company, but also the departments which affect product and its distribution. These are surely the designers of products that deal with the relationship between the parameters of the product and packaging and future manipulation during storage and shipment, producers, traders and

transporters who will help to choose the appropriate means to move products and the way most favorable to the global cost.

b) The structure of distribution channels and its significance

Entities form the structure of the distribution channel usually are [11]:

- participants who make the sale and purchase of products by taking and passing on the ownership of the goods - manufacturers, wholesalers, and retail and institutional buyers,
- brokers with limited services who do not own distributed goods, but actively support the process of communication - agents and brokers,
- organizations providing different types of services to other participants in the channel, supporting their actions - banks, insurance companies, carriers, freight forwarders, advertising agencies and business information agents.

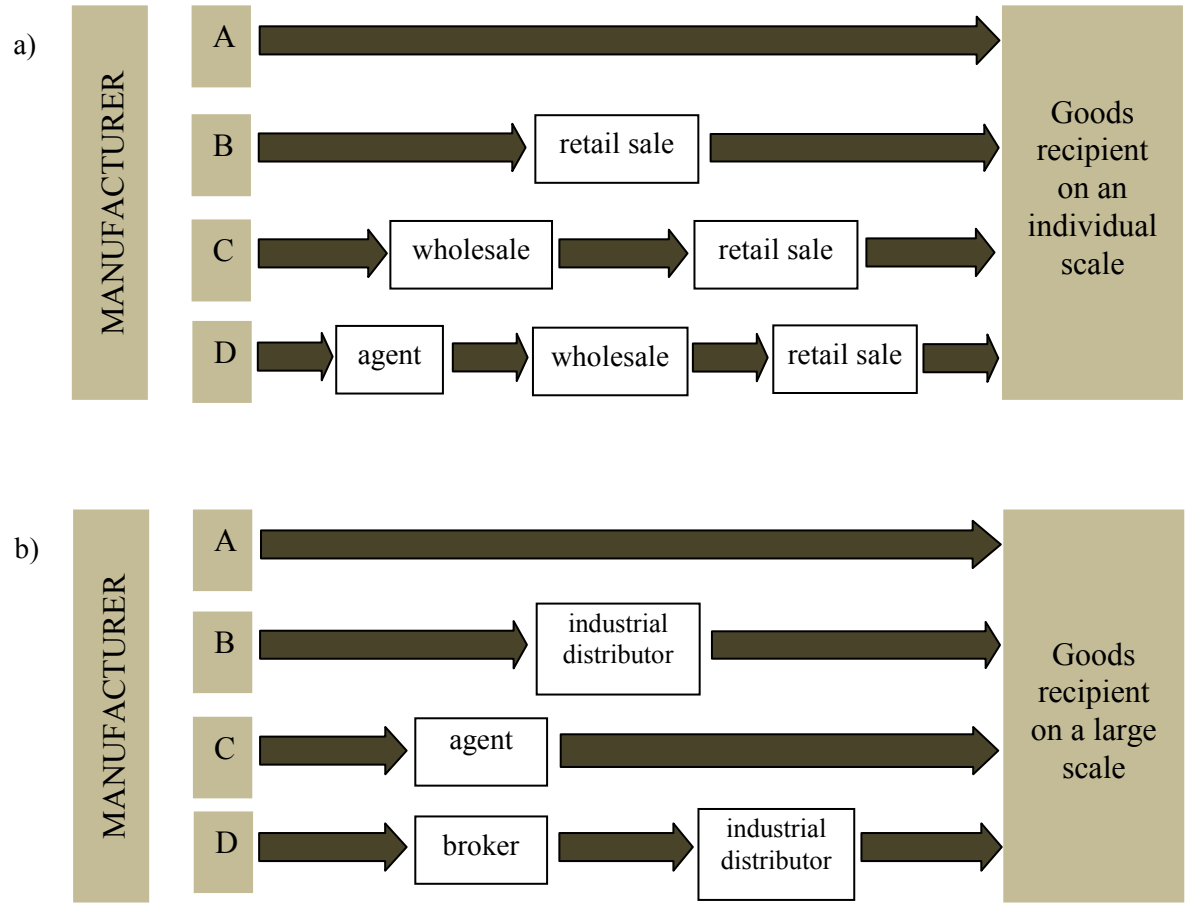

Fig. 2. Types of distribution channels: a) consumer goods market, b) production goods market
Rys. 2. Rodzaje kanałów dystrybucji: a) rynek towarów konsumpcyjnych, b) rynek towarów produkcyjnych

Selection of participants in the distribution channel is one of the most important decisions taken by the manufacturer. Participants should work together as partners, because only then it is possible to effectively implement advanced customer service systems and integrating decisions and actions in the supply chain. Co-operation seen from the position of the manufacturer requires arrangements about:

- pricing policies of individual links in the distribution;
- policies and rules replenishment;

- payment terms;
- lending policy;
- conditions of transport;
- the degree of involvement in the promotion of one's products in the context of products promotion from other manufacturers;
- participation in a market research and passing information to each other about the anticipated upgrades and technical information flows in the use of the products;
- joint training and participation in product presentations.

The expected range of activity plays a role of an intermediary distributor and must meet its specific conditions that should be checked before deciding to turn it into the distribution channel.

Since the inclusion of the distribution network is a long-term decision, it requires very careful preparation of the companies cooperation and a careful evaluation of the future intermediary.

Far-reaching co-ordination on inter-organizational and inter-functional scale allows to initiate process called Sales and Operations Planning (SOP) or aggregate planning in every link of the supply chain.

2.2. Aggregate planning

Sales and Operations Planning is a process carried out in the company, by which tactical plans for the company's functional units are to be coordinated and their implementation enables the entire business plan. The immediate objective of sales and operations planning is to enable the company to develop the best possible tactical plans (short-term, for such inventories, labor or subcontractors).

SOP balances the different needs and constraints in the supply chain partners - to take into account not only the demand from customers but also the capacity of suppliers, production facilities and logistics operators in the distribution system. The end result of the process of SOP should be a general consensus on what each interested party should do to realize the plan and how this result achieve with the highest level of customer satisfaction. By coordinating their plans, companies can significantly increase the overall efficiency of the supply chain, eliminate uncertainty and improve the synchronization of the partners, reduce the number of disruptions of movement of goods and services through the supply chain [2].

Resignation from the application of SOP results in many negative effects, as shown in Fig. 3 [3]. Among others these might be:

- not executed business plan „nervous" production (many unplanned changes in production, lower productivity, forced shutdowns),
- decline in employee morale - the risk of redundancies,
- cash flow problem,
- decline in the value of shares,
- higher procurement costs,
- low level of customer service (late or incomplete deliveries, accumulated orders),
- guilty gaps seeking,
- preventing from sudden incidents,
- large stocks.

2.3. Characteristics of the supply chain

The supply chain is defined as the flow of raw materials, components and finished products from the moment of the first acquisition until the consumption of the final product by the end user. It is a combination of various companies involved in the supply of the product to the market. The use of SOP in the example of furniture supply chain of Mebloprod company is presented in Fig. 4 [2].

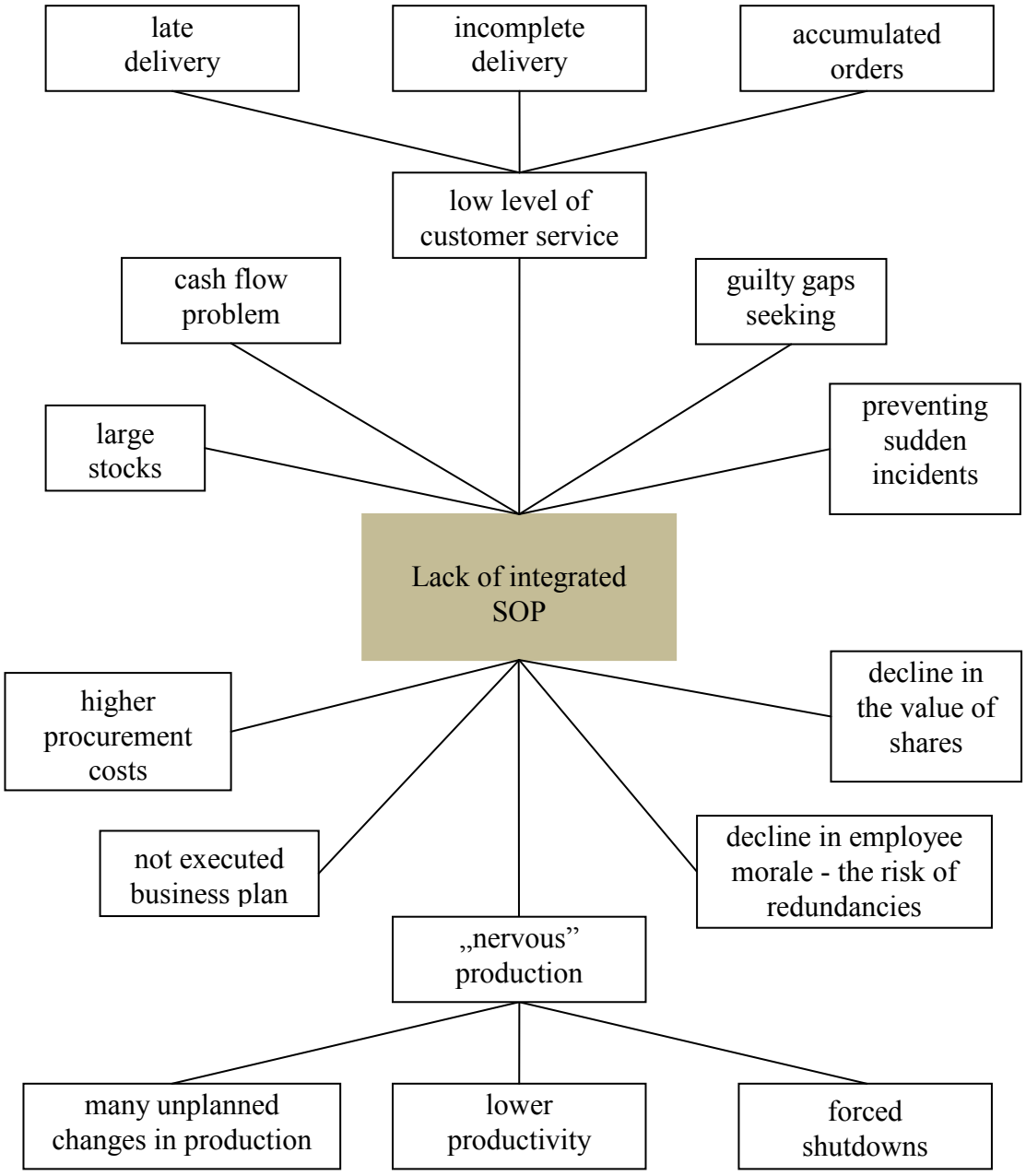

Fig. 3. The effects of the integrated sales and operations process lack
Rys. 3. Skutki braku integracji sprzedaży i procesów operacyjnych

The supply chain is connected with determined effects.

These effects not only achieves integrator of chain, but also the other participants in the chain. Global scale of effects associated with the supply chain is different for the different variants of integration of the chain, while the effects occurring is always the same. They can

be divided into two groups. The first of these is a group of direct effects occurring in the field of logistics at each of the participants in the chain [8]. Direct effects are:

- inventory reduce throughout the chain,
- shortening delivery cycles - responding more quickly to changing customer needs,
- quality of customer service increase,
- labor consumption reduce in planning and products movement control in the field of procurement and distribution - logistics costs decrease.

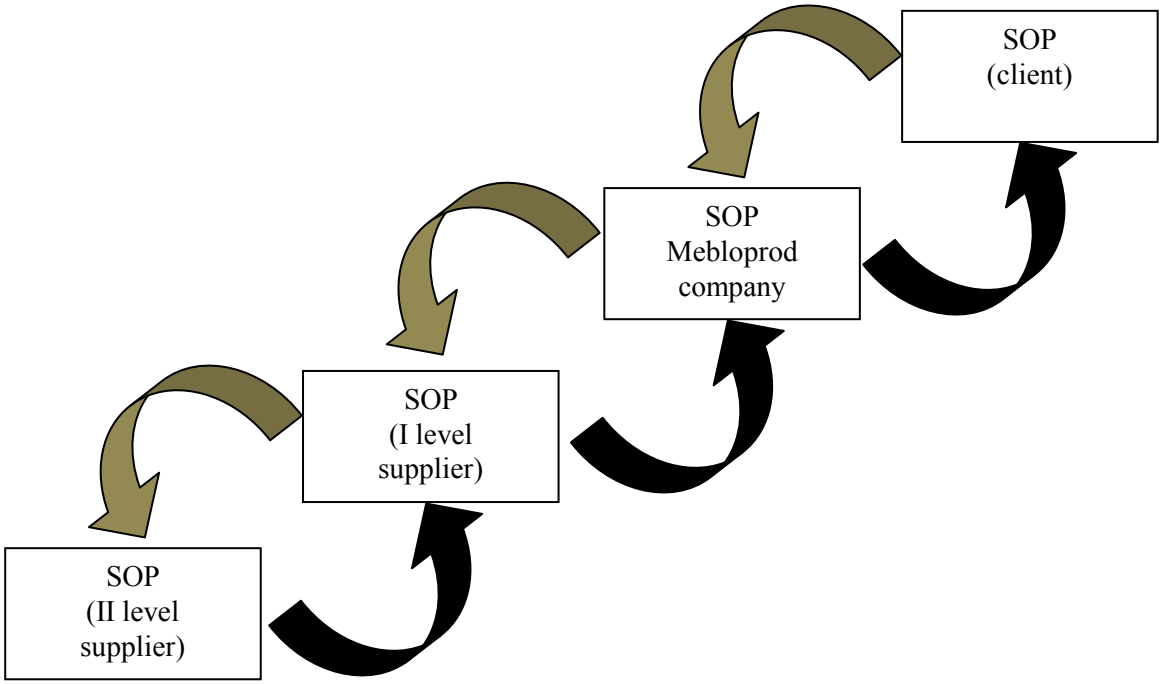

Fig. 4. Integration of sales planning and operations in the supply chain example
Rys. 4. Integracja planowania sprzedaży i operacji na przykładzie łańcucha dostaw

The second group of results from the application of supply chain strategy is a group of indirect effects. They are not directly located in the sphere of logistics, but in other areas of companies activities-supply chain participants. Indirect effects are [8]:

- acceleration of the processes of modernization and rapid introduction of new organizational solutions,
- reacting more quickly to changes in the market, for example expressed by faster implementation of new services to the market,
- faster growth of the company (the supply chain) expressed by enlarging market share and a higher increase of sales comparing to the competitors.

Fundamental role in supply chain management plays a transparency of the stocks held in the whole chain. The aim is to coordinate inventory levels across the chain, rather than moving them between the cooperating companies. Reliable and accurate flow of information between the participants in the chain ensures that production plans, planning, purchasing, and inventory can be reduced to a minimum which consequently leads to costs decrease. This system provides the opportunity to develop long-term strategic plans based on mutual partnership the companies involved [8]. For this reason, modern concepts assume a distribution channel function as a coordinated supply chain, in which cooperation and collaboration through all the participants can achieve significant benefits to better assortment managing, increasing the efficiency of the promotion and implementation of new products or reducing costs along the entire value chain. Precisely searching for cost savings, improving

the quality and shortening process which ultimately makes a total value for the customer led to the concentration of activities in the supply chain management. The supply chain is formed on the basis of the philosophy of the ECR (called: customer-demand-driven-system) which takes the consumer needs as its starting point of all the necessary activities. It is always the customer and his decision of what to buy that generates the demand and pulls the product through the chain [1].

Supply chain management is not limited to a specific company, but also takes into account its suppliers and customers. Recently it is accepted to use the term of the integrated supply chains, which are a kind of,, extended enterprise" (Fig. 5), while about its separation from the network of cooperating companies decide the enhanced nature of the partnership [11].

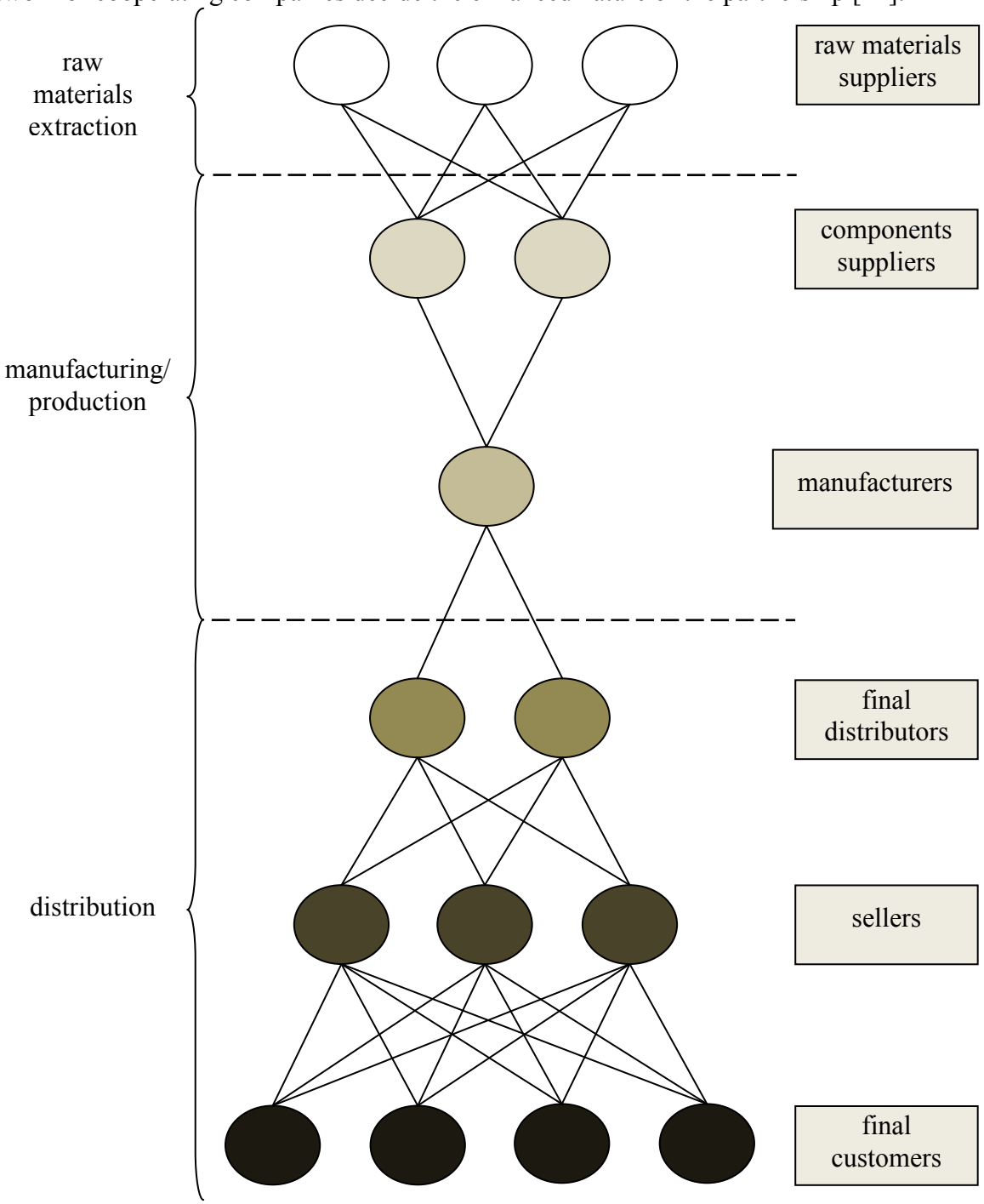

Fig. 5. Supply chain participants
Rys. 5. Uczestnicy łańcucha dostaw

Essential processes allowing for the implementation of such a system supply through are transportation and warehousing. Supply Chain Management (SCM) is the active management of the activities carried out under the chain and the relationship existing between the cells in order to maximize customer value and achieve sustainable competitive advantage. They are aware of the efforts of a company or group of companies to build and operate the supply chain in the most efficient and effective manner. Organizations in the supply chain are connected by physical, information and financial flows. These movements take place in both directions up and down the chain.

3. EXAMPLES OF TRANSPORT TASKS IN PRODUCTION ENTERPRISES

Supply distribution processes are often at the same time supply the manufacturer of the final product, so transportation tasks can be initiated by the provider or the recipient (it depends on the abilities and preferences of companies).

3.1. Delivery of malt to the brewery in Elblag (Poland)

Elblag brewery is one of the most modern and largest breweries in Poland. Due to centuries of brewing tradition it was awarded with many brand rewards. Transportation is an integral part in the activities of the brewery in Elblag. It is of strategic importance, not only in sales but also the supply of materials. Currently, transportation is only done by vehicles. All deliveries, collection of finished products is done with trucks and different trailers. The company makes use of outsourcing transport services outside the company. Such activity reduces cost by eliminating the need to finance a small department to deal with ancillary activities [9].

Choosing the right carrier is significant for the company, because in addition to the cost also the quality and timeliness of the services offered is important. The company has considered several options for the transport operation of the main ingredient for the production of brewery malt from Soufflet Poland (Poznan) malt producer and examined offers from companies interested considering cost, quality, timeliness, and the possibility of adapting the time of delivery to the expectations of the manufacturer. In the case of malt, delivery shall take place at a specific time, because the brewery is using a strategy Just-in-time and any delay in supply affects the delays in production, so it is important to determine the time at which the malt reaches a distance of approximately 300 km. It is also important to provide adequate malt storage conditions during transport as its top quality has a significant impact on beer produced from it. Ideal conditions are provided only in warehouse. While traveling, there may be variations in temperature, humidity and other parameters, which can seriously degrade malt functional properties [9]. Therefore, the shorter the time of transport, the less the likelihood of sudden and unexpected events that may delay delivery and reduced risk of deterioration in the quality of the product. Sample transport route, including paid and unpaid road sections is presented in Fig.6 [14].

For road transport tasks offer two logistics companies were considered, and for rail-road service also a railway operator was taken into account. Analysis of cost and time has shown that it is difficult to simultaneously maintain short lead times of tasks and the lowest cost of transport. In this case, the most favorable from the point of view of the cost of transport was carried out by PKP operator and DB Schenker. Table 1 presents the results of the analysis.

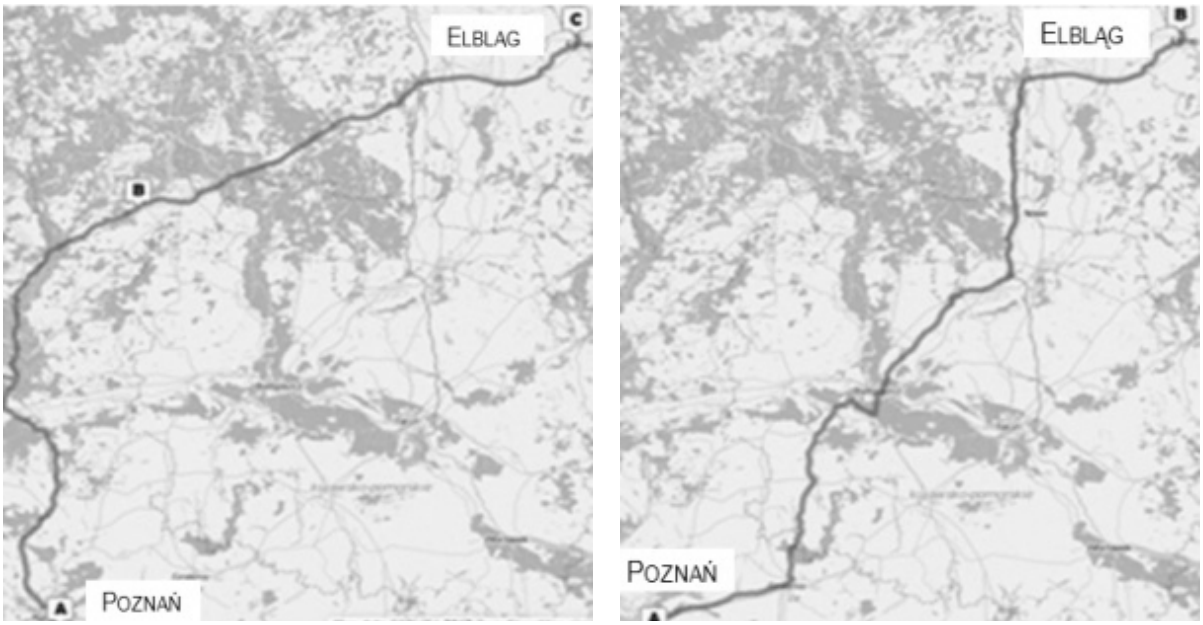

Fig. 6. Examples of malt transport routes from Poznan to Elblag including toll roads
Rys. 6. Przykłady tras transportu słodu z Poznania do Elbląga, w tym dróg płatnych

Table 1

Comparison of malt transport service offered by logistic operators

Operator	Monthly cost of supplies [PLN]	Transport duration [hours]
Road transport (DB SCHENKER)	118 008	*143,0*
Road transport (Raben Polska)	133 188	159,5
Road and rail transport (PKP S.A. and DB SCHENKER)	*87 155,64*	209,0

Taking into account the adopted criteria, the DB Schenker operator provides the best offer with an average price but the shortest time and in the case of malt is an important parameter influencing the quality of the product of the brewery.

3.2. Distribution of Fast Moving Customer Goods using logistic company

Manufacturer (ZOTT Company) of Fast Moving Customer Goods (FMCG) must demonstrate accuracy in the implementation of large distribution process due to the need to provide customers products with the expected quality. Therefore, outsourcing such tasks to logistics company who plays a role of a partner that will quickly, fairly and conscientiously perform the receipt, storage, packaging and delivery of customer product distribution to recipients is rational. The ZOTT Company has chosen a transport operator located in Gliwice (Poland) to handle with the deliveries. Wholesaler is located in Opole (Poland), where the goods are transported to Gliwice in quantities from 300 to 1000 pallets per day. The logistics operator has two methods of collecting the goods from the manufacturer [12]:

- special transportation destined exclusively for swinging between the manufacturer's warehouse and distribution warehouse of logistics company. Depending on the demand operating from 4 up to 8 vehicles. One course takes an average of 4.5 hours,

- for larger distribution customer demand vehicles from the area of Poznań, Wrocław or even "pulled" by the manufacturer's warehouse in Opole. This is also the case when the number of vehicles in the fleet planned for the next day's low and demand for vehicles is high.

The most serious problem associated with customer reception of goods from ZOTT distribution client is problematic planning of vehicles collecting goods schedule. The problem arises when there is no vehicles or when there's too many vehicles waiting to be loaded. Often it does not correspond to the size of the load capacity of waiting vehicles. In both cases, it is necessary to take alternative actions while distribution costs are rising and there is concern about the proper supply outlets in ZOTT's products. This situation adversely affects the image of the manufacturer and logistics company in the market, so special controlling measures should be implemented. These measures should ensure better information exchange between the manufacturer and logistics company to plan the size and the demand for transport vehicles more accurately. Such a solution is, for example the TISYS communication platform with TIFLOW and TiCAP modules, which brings together all of the features necessary for collaboration between client, carrier and receiver [15]. It allows to manage fleet more efficiently and reduce costs (Fig. 7). It is estimated that after a year of work savings will reach about 200 thousand in a field of transportation.

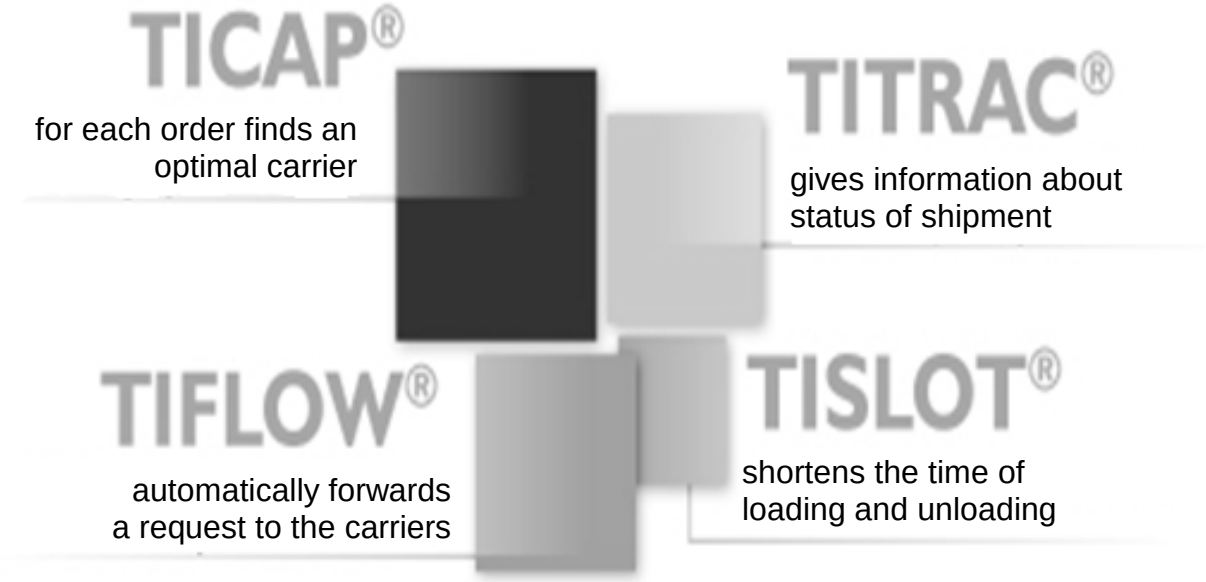

Fig. 7. TISYS - a communication platform modules
Rys. 7. TISYS - moduły platformy komunikacyjnej

The distribution in logistics company is not always an unmistakable process, mainly because enterprise of this type usually concern mainly on transport and storage activities. Possible solutions to solve these problems is mainly to ensure closer cooperation with the occasional forwarding companies, which can save several thousand PLN per month and adjust the fleet to smaller lots, which will increase the use of cargo space in trucks.

3.3. Distribution of frozen products

Logistics distribution of frozen foods requires compliance with many principles of good storage under appropriate conditions, transport by means of appropriately designed vehicles and handling in special cooling sleeves. These activities require proper management from the

moment of production process, until the transfer of the product to the end customer. Popular frozen foods are available in chain stores and local retail stores. A different strategy is used by FF company as a distributor based on its own distribution channels and networks of their own and franchise suppliers operating in the "door in door" system. The network structure is based on the distribution of the three centers - head office, distribution center and branch offices (Fig. 8, based on [11]). In such a system organization of transport processes is very important and exchange of information between all centers. Transportation of goods from the producer to the logistics center is the only movement that does not apply to the company at all.

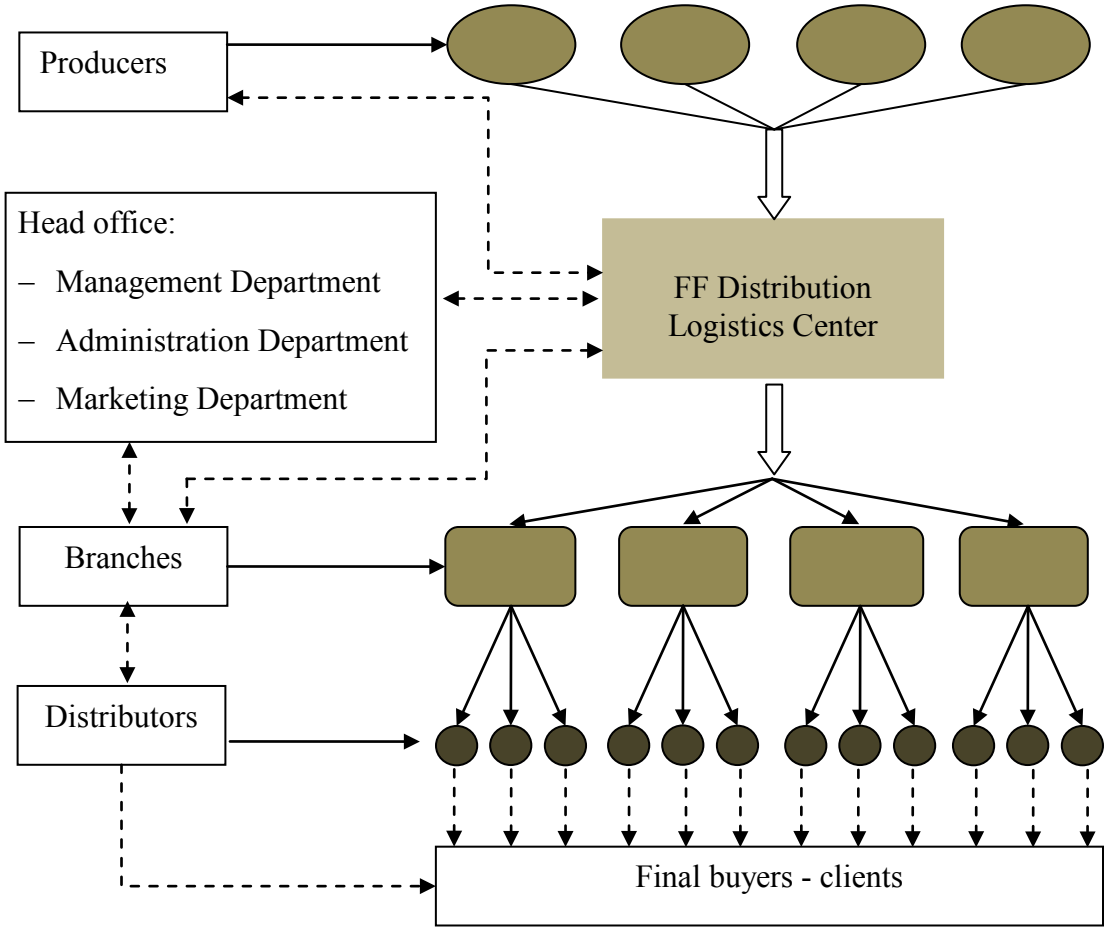

Fig. 8. Structure of the distribution network
Rys. 8. Struktura sieci dystrybucji

From the moment of taking the goods by the center the company takes over the distribution process control. For some types of product the distribution network attaches great importance to the comprehensive marketing - friendly and professional staff helps in the selection of products and is a business card reinforcing relationship with the client. For this reason, a franchisee who decide to work with a distributor must undergo thorough inspections and detailed training. Seller during his work travels that route, stops at customer homes and companies and has certain activities to do in a specific time. The intensity distribution of the process is dependent on a well-developed dealer, efficient fleet and process optimization.

Optimization begins from the seller. Then the process includes procurement, inventory, loading of goods and transportation routes. Orders executed once a week, make it possible to maintain optimal inventory levels and a loading method ensures seller's work easier, minimizes operating time, reduces customer waiting for the right product sales increasing capacity of. Route optimization allows extracting and the service areas in terms of density of

customers, demand type, sales activity in different periods. Choosing the right method of optimization and accurate market research, providing information about customers is the basis function of the distributor in the application of effective customer service strategies [13].

4. CUSTOMER SERVICE

4.1. Customer Relationship Management (CRM)

Modern distribution systems base their configuration on the client as a key element of the system. Efficient Customer Relationship (ECR) strategies are based on customer as the main pillar of the supply chain and distribution system. Therefore, the client's expectations, quickly changing over time and a high level of satisfaction with meeting the needs of the consumer should be influencing all elements of the distribution process. Customer service when widely understood can be a source of success but also the cause of the failure of any business - the link of the logistics chain.

In some organizations, the customer service term includes an offer of favorable financial conditions and credit guarantee delivery within a specified period, rescheduling invoicing to meet the demands of our customers, putting at the disposal the competent representatives of key accounts sales division, providing materials for the presentation of goods sold, product installations or even maintaining inventory of spare parts at customer satisfactory level. Talking about customer service, the company shall take into account a number of elements to support basic material product or the basic service and the client, making a choice, shall take into account the overall offer and its value [4].

Starting, retaining and building long-term partnerships with customers is a mission many companies focused on the client. To facilitate the implementation of this mission and provide value to each client individually on its own terms helps CRM. This is a business management concept based on the perfect knowledge of the customers, their needs and preferences and adapting the organization's activities and its widely understood products to these requirements, building a logistics system of a company that is capable of meeting the customer's needs in terms of time, reliability, communication and convenience. CRM is the core of interaction with the customer, which allows to build the best possible relationship between him and the organization. Noticeable increase in interest in the needs of the client and better adjustment offer more and to increase revenue with a limited increase in expenditures for sale [6].

CRM does not limit the term "client" to a group of buyers of products or services. customer is the supplier, agent, representative, distributor, or any person or organization that makes part of his destiny from the company. More accurately the company knows their needs and preferences, and then they meet, the less likely to break the link and move to competitors, as customers are reluctant to repeat the "education process" with another cooperator.

A comprehensive customer service program should include three groups of components[6]:

- pretransaction - these are the elements associated with the preparation of the organization for customer support. They play a huge role in shaping customer expectations affect his perception of the company, as well as overall satisfaction with broader offerings. These are non-routine activities that require a holistic view of a company and thus their preparation usually entrusted to chief executives. Although elements of the pretransaction are not directly related to logistics, but should be developed before the organization will proceed to implement customer

service standards (e.g., development of procedures, instructions and training courses in the field of customer service);

- transaction - they involve direct contact of the company with the client, and the proper fulfillment of them significantly determines the customer satisfaction with the offer. It is therefore recommended continuous monitoring of these elements (the availability of substitutes, the expedition of goods and other), catching company stumbles in their delivery, the search for the causes of defects and their elimination;
- post-transaction - allows extended contact with the client of the company, previously neglected by most managers, now in the era of the struggle to maintain clients have grown in importance. The most important of these is the ability to install the product, warranty and post-warranty service, a settlement of complaints.

When customers determine which controls are important from their point of view, we can proceed to develop indicators. They should be prepared in the field of both pre-trade transaction and post-transaction. Basic 4 elements of customer service in the system, which is used in the development of policy and measurement of service performance standards are presented in Table 2 [5].

Table 2

Elements and measurement of customer service

Elements	**Element definition**	**Measurement object**
Product availability	The most common measure of customer service. Usually defined as the percentage of products in stock (target performance) measured in the base unit (for example, to order, the product or monetary unit).	Percentage of products available in the basic units.
Cycle of orders length	Time between placing an order until you receive the goods ordered. Usually measured in units of time and as a deviation from a standard or fixed, target length of the cycle. Note: often product availability and cycle of orders length are combined into a single standard. For example: "95% of orders shipped within 10 days".	Speed and regularity of supply.
Distribution system flexibility	The ability of the system to respond to specific and / or unexpected needs of the customer. It includes utility and readiness vehicles and ability to substitution.	Response time for special customer requirements.
Distribution information system	Information system's ability to provide fast and accurate information to customers according to their requirements.	Speed, accuracy and detail level of information.
Mistakes in the distribution system functioning	Efficiency of procedures and the time needed to remove the effects of mistakes in the distribution (e.g. mistakes in invoices, shipments, damages and complaints).	The required mistakes response time and the time of their removal.
After-sales service	Efficiency of after-sales service, including providing technical information, customer supply spare parts or any hardware modifications.	Response time, the quality of response.

The greatest difficulty in the development and implementation of CRM concept is to provide a customer service level that is needed, at a cost that is as low as possible from the point of view of the entire logistics chain and to find the appropriate level that will maximize companies sales and minimize costs. Of the many methods that help to define the appropriate level of customer service there are these four most commonly used:

- determine the level of service based on customer response to the lack of product,
- trade-off between costs and revenues,
- ABC analysis of customer service,
- customer audits.

To test the level of logistics customer service, you can use the method of CSI (Customer Satisfaction Index), which allows to determine the validity and level of satisfaction with survey characteristics, indicating the possibility of product differentiation in the distribution process. CSI index takes into account the importance of the factor of quality, customer satisfaction assessment of this factor, the number of attributes and respondents. Using surveys to appropriately selected sample of customers allows to determine customer satisfaction index, which can be considered as a result of the aspects for which the study was conducted. Analysis of this kind may be useful in comparing similar different situations like, as well as competing to each other products or services. From the partial results it is possible to create a map of quality with the structure shown in Fig. 9 [16] by showing the validity of the features on the horizontal axis and evaluation of customer satisfaction with given aspect of the vertical axis. The result is to assign attributes to one of the groups recommending: a part of the process should be improved, the changes are not recommended, or you can spend less funds for the purpose [17].

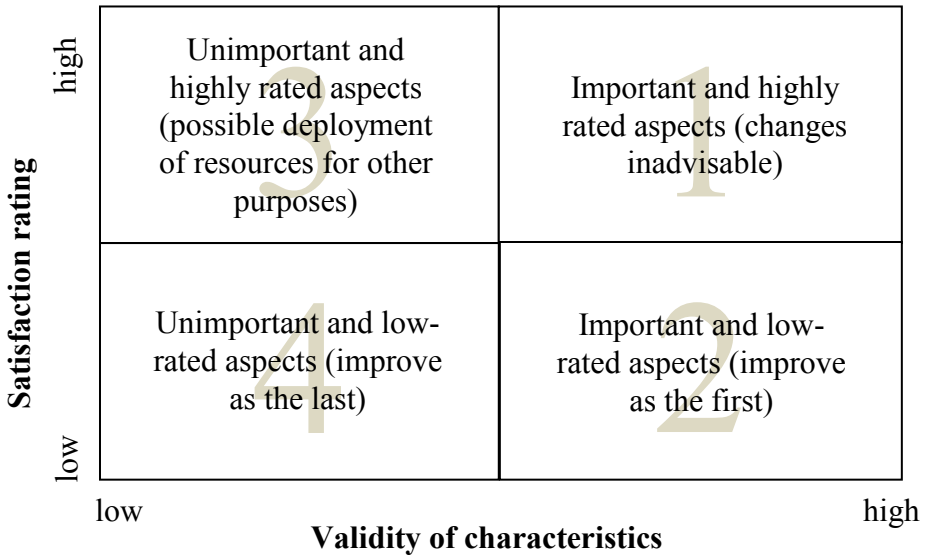

Fig. 9. Quality map in Customer Satisfaction Index method
Rys. 9. Mapa jakości w metodzie CSI (badania satysfakcji klienta)

4.2. The customer service for the selected company

Examined production company deals with the production of fittings and technical details from thermosetting plastics. To improve its relations with your customers to analyze customer service the ABC method was used and a compromise between costs and revenues. The examined company operates 74 clients. There is a group of customers who may not bring the company any profits, thus reducing its overall profitability. Therefore, the first task facing the

management of customer service, is to determine the contribution of each of the buyers in the overall profitability of the company.

Of all 74 customers selected on the basis of profit that they bring to the company the most important ones were identified. Pareto rule (Rule 80/20) was used to do so. Using this division may help to develop for different customer segments special service standards and associate them with the costs generated to provide the level of specific measures.

The analysis of the ABC / XYZ sales allowed to extract a group of customers who order and purchase the most. The results of the analysis are presented in Table 3.

In group I, there are 11 customers who brought the total of almost 80% of the profit to the company. In the second group there are 14 customers, whose share in the profits amounted to about 16%. Group III includes 15 customers who have provided approximately 4% of the profit. In final group IV there were 34 clients whose share of the profits was very low and it didn't even reach 1%. After the analysis key customers were selected, these were those customers who were in the group I. For this group special service standards were determined including time, reliability, communication and comfort at the highest level, adjusting level of satisfaction to key customers' expectations.

Table 3

The results of the analysis of customer segmentation in the company producing plastic

Customer group	**Number of customers [number]**	**Number of customers [%]**	**Share of profit [%]**
I	11	14,86%	78,95%
II	14	18,92%	16,04%
II	15	20,27%	4,04%
IV	34	45,95%	0,97%
AMOUNT	**74**	**100,00%**	**100,00%**

Factors affecting the shortening service were examined, then indicators related to complaints were calculated, finally methods of communication, and selected individual ways of packaging products were tested. This analysis was necessary to determine the appropriate level of service. It must be remembered that it brings together both the benefits and some costs. Therefore it is important to find a level of service that will maximize sales and minimize costs. Determination of customer service at a high level can lead to a sharp increase in costs, while too little can alienate customers and harm the competitive position of the company. Therefore, in order to determine the appropriate level of customer service, you should take into account both the mutual relations between logistics costs and the level of customer service, as well as the impact of a higher level of service for the sales and profits of the enterprise. This effect is shown in Fig. 10 [6, 10].

Each segment offered a different level of service. The most important customers receive a very high level of service in order to convince them to stay with the company for many years. For the last group (minimum income clients) the lowest level of service, in order to reduce costs was proposed (Table 4).

In the case of the fourth segment it would be unprofitable to storage the products, because they have a small share in value, they will be manufactured after the request from the client. Any delays or failures occurring in service purchasers of group IV does not cause such losses as the customers belonging to the first group.

Although the basic principle is to provide the customer with high quality products without any damage, do not underestimate the fact that the problems occur. It is important that they are quickly repaired [11].

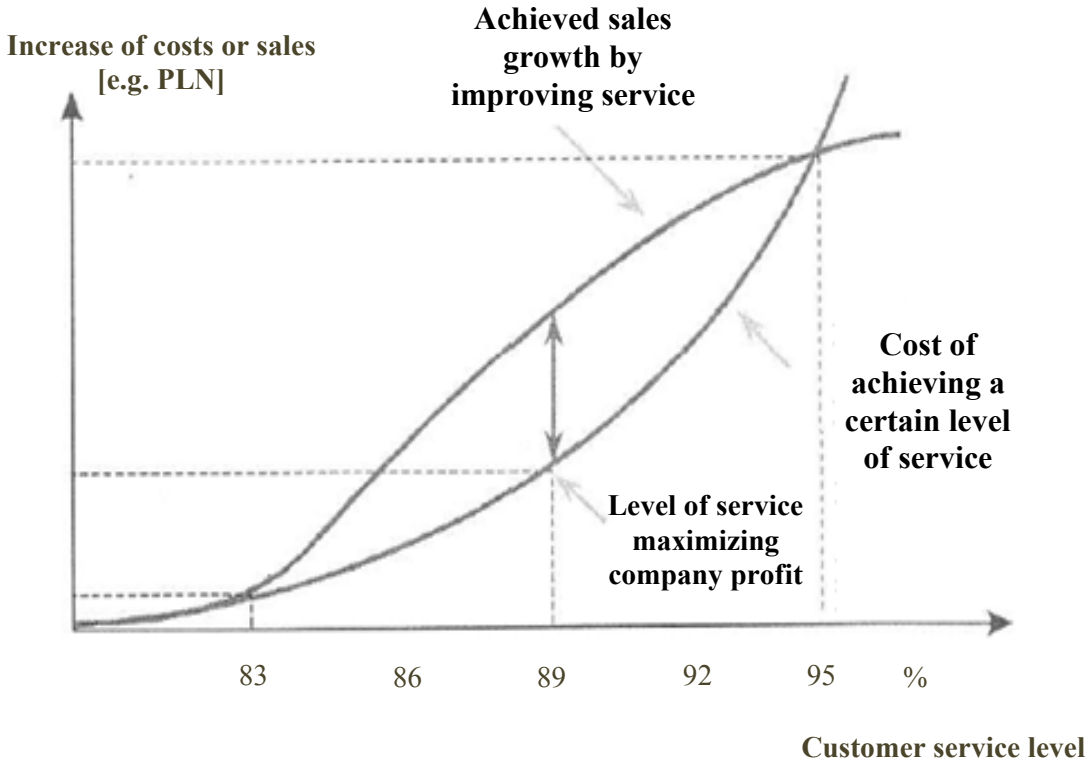

Fig. 10. The impact of customer service on sales and profits of the enterprise
Rys. 10. Wpływ obsługi klienta na sprzedaży i zyski przedsiębiorstwa

Table 4

Standards of customer service

Group	Product availability [%]	Punctuality [%]	Completeness [%]	Shipments without damage [%]	Documentation accuracy [%]
I	95	99	99	99	99
II	85	98	98	98	96
III	70	96	97	95	95
IV	-	95	95	94	93

While examining the degree of customer satisfaction for the automotive industry, setting the CSI index was selected a random sample of customers and ten characteristics defining quality: lead time, timeliness, completeness of supply, staff competencies, proper packing, payment terms and other was adopted the validity of the characteristics and evaluation of its fulfillment on a scale of 1 to 5. Questionnaire was proposed method and the results obtained made it possible to determine the CSI index for each client (from 3.74 to 4.31). Average CSI in the examined company was 4.01.

Looking at the results for all clients it can be concluded customer of a company pays the utmost importance to punctuality and the time of order realization. The least important was the term of payment and information systems. It is worth noting that all the studied characteristics were given with the importance of more than two, so none of the selected

properties were not considered valid. All the analyzed criteria are important to the customer, so for the proper functioning of the company it should not neglect any of them.

The level of customer service is one of the main factors determining the competitiveness of the company. There are important areas of customer service which are more difficult to measure. Many of these are human factors such as a secretary's telephone manner or a salesperson's conduct while visiting clients. In these areas it's crucial that to get feedback from customers about their perceptions of customer service. Confidence and reliability of the service indicates the timetable, on-time delivery, maintaining a certain, relatively low start, defects and mistakes.

5. CONCLUSIONS

The examples of different ways of distributing products and customer service processes have a wide variety of problems in the logistics business. Depending on the chosen strategy, the type of distribution channel, the characteristics of the products and the possibility of producers and distributors, companies have a range of tools to facilitate the implementation of Efficient Customer Response (ECR) tasks.

Following conclusions can be presented:

1) Decisions on the choice of carriers directly affect the development of relationships with customers (in terms of time, cost and quality of their products).
2) Outsourcing allows the distribution of transferred responsibility for transportation and warehousing to logistics company but requires careful analysis of the offers of different providers to avoid errors in the implementation of strategy.
3) The use of a communication platform, when outsourcing of logistics services significantly improves the collaboration between participants of the distribution channel and lower costs.
4) Franchising in the distribution can increase the intensity of the processes and the product can reach the "door" of the final buyer - facilitates purchases especially in suburban and rural areas.
5) Defining standards of customer service and their segmentation can help to determine the appropriate costs of the companies in the provision of the highest rates for customers and a small reduction in the key requirements for occasional customers. It also allows you to build long-term customer loyalty, and encourages those who have a smaller share of the profits to increase the activity of the group to get to the higher standards of service.
6) Examination of the level logistics customer service using the method Customer Satisfaction Index, allows to determine the validity and level of satisfaction with the examined characteristics, indicating the possibility of distinctions offered in the field of product distribution for an effective competitive enterprise. The analysis indicated that the timing and duration of the contract are the areas for continuous improvement in terms of customer priorities.

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