## ХАРКІВСЬКИЙ НАЦІОНАЛЬНИЙ ЕКОНОМІЧНИЙ УНІВЕРСИТЕТ ІМЕНІ СЕМЕНА КУЗНЕЦЯ

### ФАКУЛЬТЕТ МЕНЕДЖМЕНТУ І МАРКЕТИНГУ

## КАФЕДРА МЕНЕДЖМЕНТУ ТА БІЗНЕСУ

# Пояснювальна записка

до дипломної роботи

МАГІСТРА (освітній ступінь)

на тему: «Удосконалення збутової політики підприємства»

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Харків – 2020 рік

#### РЕФЕРАТ

## магістерської дипломної роботи на тему «Удосконалення збутової політики підприємства»

Робота містить 95 сторінок, 40 таблиць, 15 рисунків, список літератури з 70 найменувань (на 8 сторінках), 3 додатки (на 21 сторінці).

В сучасному світі компанії будь-якого масштабу є частиною багатокомпонентної та глобальної мережі розподілу, яка знаходиться під багатофакторним впливом. Дослідження структури таких систем, а також визначення місця компанії у них це важливий процес на шляху до вдосконалення ділової активності підприємств та розвитку загальної системи збуту. Прийняття рішень стосовно каналів розподілу грає важливу роль у процесі вдосконалення політики розподілу підприємства, особливо в умовах коли цей процес відбувається неефективно через брак знань про ринок.

Важливість теми дослідження полягає у тому, що особлива увага має бути приділена аналізу процесу розподілу не лише в умовах внутрішніх ризиків, але і з урахуванням такого фактору впливу як ринок. Лише комплексний погляд на розподіл може допомогти компаніям визначити недоліки існуючих систем та розробити шляхи їх вдосконалення.

Завданням дослідження є вивчення теоретичних та методологічних аспектів процесу розподілу, аналіз впливу ринку на цей процес, а також розроблення практичних рекомендацій щодо вдосконалення структури каналів розподілу на підприємстві. Особлива увага має бути приділена роботам таких дослідників як Розумей С., Розсоха В. та Панухник О., тому що в них вдосконалення політики розподілу розглядається з урахуванням специфіки та недоліків сільськогосподарського ринку України.

У теоретичному розділі дослідження автором розглядаються та аналізуються класичні та сучасні дефініції розподілу, узагальнюються основні принципи формування політики розподілу, визначається значення вибору

каналів розподілу у процесі формування загальної системи розподілу, з урахуванням факторів впливу. Зважаючи на те, що базою дослідження є виробник сільськогосподарської продукції, кон'юнктура ринку була досліджена окремо. Було визначено основних гравців на ринку, особливості взаємодії між ними, фактори впливу. Методологічні підходи щодо прийняття рішень та аналізу каналів розподілу було проаналізовано, порівняно та описано.

Третій розділ роботи узагальнює основні висновки з перших двох розділів, містить аналіз розробленої карти проблем. Було запропоновано короткотривалі та довготривалі рекомендації стосовно виявлених проблем, розраховано економічний віл ефект ïχ впровадження. Рекомендації охоплюють вдосконалення бізнес-процесу та пропонують зміну каналу розподілу. Математичні методи, зокрема експертний метод, було використано для вибору оптимального каналу розподілу для аналізованої компанії. Розрахований економічний ефект демонструє, що впроваджені вдосконалення допоможуть значно зменшити затрати на розподіл, покращити рентабельність каналу розподілу та підвищити загальні прибутки компанії.

Ключові слова: канал розподілу, політика розподілу, розподілу, сільськогосподарський ринок.

Рік виконання роботи – 2020, рік захисту – 2020.

#### ABSTRACT

#### Master's thesis

#### "Distribution policy improvement at the enterprise"

The thesis consists of 95 pages, 40 tables, 15 figures, bibliography of 70 titles (on 8 pages), 3 appendices (on 21 pages).

In modern world all types of companies, even small ones, are involved in complex and global distribution networks, which fall under multi-factor influence. Research of such systems structure and finding company place in them are important for company business activity improvement and general system of distribution development. Distribution channels decision-making play significant role in company distribution policy improvement, while lots of enterprises organize this process not in effective way due to lack of information about market conditions.

The relevance of research topic is significant due to the fact that distribution process should be analyzed not only based on internal conditions but taking into account such influence factor as market. Only complex view on distribution can help companies to find out disadvantages of established policies and develop set of steps for their improvement.

The purpose of this thesis is to study the theoretical and methodological foundations of distribution process, analyzing market influence on it, as well as to develop practical recommendations for distribution channels structure improvement. Special attention should be given to work of such researches as Rosumey S., Rossokha V. and Panukhnyk O., who studied the question of distribution policy improvement considering specifics and disadvantages of Ukrainian agricultural market.

Theoretical section of given research generalizes analysis of classic and modern definitions of distribution process, main principles of policies formulation, specifies the place of distribution channels in the overall system of distribution, while analyzing main influence factors. As base of the company is agricultural enterprise, market conjuncture is analyzed. Main market players, interrelation between them, influence factors are analyzed and described. Methodological approaches to decision-making and channel analysis are studied, compared and described.

Analytical part of given work consists of comprehensive analysis of ALLC "Mriia" activity, including financial and economic indicators calculation, finding of interrelation between them. Distribution activity of ALLC "Mriia" was analyzed as well, with accent made on channel profitability calculation. In addition to it business processes of distribution policy formation and distribution channel chose were analyzed and described.

The third section of the work generalizes main findings of two previous sections, contains the analysis of problem map constructed. Short-term and long-term recommendations for revealed problems solving are suggested, with economic effect of measures implementation calculated. Recommendations suggest business process adjustment and distribution channel change. Mathematical methods, particularly AHP, are applied to define optimal channel for analyzed company. Calculated economic effect of short-term recommendations show that their implementation will significantly decrease selling costs, while increase channel profitability and overall company profit.

**Keywords:** distribution channel, distribution policy, distribution, agricultural market.

**Year of performance** – 2020, **year of defense** – 2020.

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#### **INTRODUCTION**

Agricultural sector is considered as one of the most perspective sectors of domestic economy. In the same time volumes of Ukrainian enterprises production show negative dynamics. Under these conditions the effective sales of is important for several reasons: its volume determines such indicators of the enterprise as value of income, profit and level of profitability. In addition, it influences overall production and logistics. Thus, the main results of the enterprise's activity, aimed at expanding its activities and maximizing profits is finally determined in sales process. Due to the volatility of demand in the agri-food market, companies constantly search for more effective directions of commodities realization and price policies, channels of distribution of products, methods of forming demand and stimulating sales. The problem is inability of small enterprises to reach all information about the market, to avoid unfair intermediaries and build up strong strategy for products realization. Under these conditions it is necessary to develop comprehensive understanding of company sales activity.

Decision-making in the field of product distribution policy is to choose the system, form and distribution channels. The current infrastructure of the agricultural market is not designed for fast products realization to consumers. It the same time, producers are forced to use unorganized distribution channels with opaque terms of sale and intermediaries dictating prices, and consumers are forced to buy products at inflated prices and low quality. Therefore, the main goal is to find out the equilibrium between marketing goals, marketing opportunities and resources of firms, that is, effective distribution networks organization. Such criteria as profitability, demand and stability of ales should be considered. Therefore, the goal of research is theoretical justification of distribution organization and main distribution policy development process, considering specifics of agricultural production. It is also necessary to find out current attitude of ALLC "Mria" towards main distribution channels and check the overall effectiveness of enterprise sales activity, with distinguishing of its influence on main profitability indicators.

Considering the goal formulated, the next tasks should be solved:

 to discover theoretical background of distribution process and distribution policy improvement, to conduct morphological analysis of terms and develop own term which fits the specifics of given research;

- to consider the structure of distribution channels and main factors influencing it;

- to understand the main elements of company strategy when improving distribution policy;

- to describe the general information about ALLC "Mriia";

- to conduct technical and economical research of enterprise activity, to conduct primary research of interdependence between sales activities and financial results of company;

- to discover the conjuncture of agricultural market in Ukraine, find out main tendencies of products realization;

- to evaluate the current attitude of company towards main channels of products realization, find out main criteria of channel choice;

- to suggest the new strategy for products realization;

- to find out the effect of recommendation introduction.

In the result of research conducted it is expected to find the ways to increase the profitability of company performance. Object of research is sales activity of ALLC "Mriia", its strategy towards distribution networks development. The subject of research are methods and tools of distribution policy improvement, analysis of market conjecture, distribution channels mix optimization.

The research will be considered based on ALLC "Mriia" activity analysis. Information base of research are publications and researches of scientists, company documents and secondary statistical data collected. Methods of research used are analytical, comparative and deductive research. Among the mathematical methods analytical hierarchical process, regression and factor analysis were applied. In order to process statistical data technical and economic analysis and financial analysis were used.

# 1. THEORETICAL ASPECTS OF DISTRIBUTION POLICY AT AN ENTERPRISE

#### 1.1. Concept and essence of distribution policy of an enterprise

Under conditions of globalized market, company reaches its consumers not only by the means of direct selling, but also using a variety of distribution channels and acting as a part of global supply chain. Respectively distribution process is now evaluated and managed not only in terms of logistics, but also considering overall marketing strategy of enterprise.

Increased complexity of selling activities lead to the broad understanding of term "distribution" among scholars. To clarify the differences between classical and modern reading of term, and understand the basis of distribution activity, the morphological analysis of "distribution" definition was conducted. Key words were analyzed to define the term in a new way, which is more applicable for given research. The result of analysis is presented in tab. 1.1.

#### Table 1.1

N⁰	Definition	Key words	Author
1	2	3	4
1.	Distribution covers the act and process	Act and process	M. J. Baker, "Marketing"
	of disposing or sharing commodities, so	of disposing or	[39, p. 84]
	that they may yield benefits, or be made	sharing	
	ready to yield benefits to those who	commodities	
	give value for them.		
2.	Distribution is concerned with all those	activities required	D. Jobber, G. Lancaster
	activities required to move goods and	to move goods	"Selling and Sales
	materials into the factory, through the	and materials	Management", 8th edition
	factory and to the final consumer.		[46, p. 30]
3.	Distribution is function that create value	function that	Barton A. Weitz, Sandy O.
	by making products and services	create value	Jap "Marketing and
	available to customers in an appropriate		Distribution Channels"
	form at the right place and time.		[69, p. 305]
4.	Distribution connects the end of the	process which	M. Straka "Distribution and
	manufacturing process with the	influences on	Supply Logistics"
	beginning of fulfilling consumer needs.	goods and	[62 , p. 20]
	Distribution additionally enables the	products	
	needs of customers to be fulfilled.		

Morphological analysis of term "Distribution"

**Continuation of tab. 1.1** 

1	2	3	4
5.	Distribution deals with handling and processing of material from acquisition to delivery to the ultimate consumer. This sub-function includes the capability to identify, classify, receive, document, store, secure, maintain in storage, care and preserve, select, pack, package, ship, control in transit, and dispose of material resources	handling and processing of material	James R. Stock and Douglas M. Lambert "Fundamentals of logistic management" [60]
6.	Distribution is defined as the transportation of the product from the point of production or transshipment to the point or points where demand has been recorded, in order to satisfy the expectations of the production enterprise and the consumer	transportation of the product	P. I Serdaris "Supply chain management: a view of the distribution channel" [58, p. 484]
7.	Distribution is a combination of channel management and physical distribution management. Channel management concerns the entire process of setting up and operating the distribution network. Physical distribution management focuses more narrowly on providing products when and where they are needed.	combination of channel management and physical distribution management	Frederick E. Webster,Jr «Industrial Marketing Strategy» [68]

Analysis definitions of shows that classic understanding of distribution[39; 69; 68] deals more with an act of physical transportation, while modern authors [62; 58] stress on customer service, depicting strong connection of distribution and marketing strategy. It also should be noted that all definitions somehow mention economic utilities – possession, form, time, and place [43, p. 5], which shows the orientation of given activity on customer. Additionally, the definition by Frederic Webster strictly distinguishes two levels of company distribution process from the management point of view – tactical (represented by "physical distribution management") and strategic ("channel management"). As given thesis is aimed on the analysis of distribution policy improvement, such division seems reasonable, and in further analysis the greater attention will be given for channel management.

So, considering the morphological analysis conducted and specifics of given work, it is proposed to formulate new definition of "distribution" process, which will combine the strategic orientation on channel management and classic approaches. Under conditions of given work distribution should be understood as "process of product transformation from the point of production to the point where demand has been recorded, fulfilled through distribution channels to provide possession, form, time, and place utilities for consumer and realize company strategic goals".

Given definition underlines the importance of distribution channels management in strategic decision-making of a company. When defining distribution channel though, it should be noted that in given thesis term "distribution channel" is considered as a synonym of "marketing channel", although some scholars differ them depending on the context of studied field. In the given work, distribution channel is understood as "the route along which goods and services travel from producer/manufacturer through marketing intermediaries (such as wholesalers, distributors, and retailers) to the final user" [55, p. 59]. Such definition was chosen as it mentions the main entities involved – producer, intermediary and consumer. Respectively distribution channel management deals with designing and managing a marketing channel to enhance the firm's sustainable competitive advantage and financial performance [56, p. 3].

Distribution structure is organized in accordance with general principles, among them there are:

 principle of adaptability to external and internal factors, which includes evaluation of factors influencing distribution process and redesigning distribution structure to meet conditions;

 principle of strategic orientation, so distribution strategy should be formulated in accordance with overall company strategy and constantly changing to reach the target set;

- principle of effectiveness, by which distribution process should involve minimum resources involved with maximum profitability reached.

Principle of effectiveness can be considered as high-priority one. Distribution process is involved in sales revenue generation, amount of which is directly influences distribution channels structure and their profitability. In the same time distribution process is costs center, as it involves material, human and time resources. Therefore, when formulating distribution policy, producer considers market infrastructure, logistics and availability of transportation and storage means.

Respectively, distribution strategy should be formulated in accordance with principles listed above. It is proved notion that channel management has direct influence on marketing decisions (e.g. pricing, advertising) [50, p. 858] and so should be conducted before product realization. However, channel decisions have deeper influence on company sales volumes, cost structure and overall competitiveness [11], that is why should be considered as important distribution strategy formulation step.

When analyzing company strategy toward channel decision, the internal process of channel mix formulation should be analyzed for problem centers examination. Analysis of existed scientific works allows us to define several steps for channel mix creation. Main steps of distribution channels mix formulation is presented on fig. 1.1.



Fig. 1.1. Algorithm of distribution channels mix formulation

The process is usually started from defining the necessity of channel creation or channel mix change [17, p. 28]. Such necessity arises when enterprise no longer able to reach its planned indicators of product realization, catch the market or face negative tendencies of distribution indicators. In this case it is decision of company management to improve existed channel or introduce the new one. For necessity to be defined, company should conduct market analysis and analysis of its activity in dynamics and evaluate trends and their roots. When the necessity is defined, development of alternative sets of distribution channels should be conducted. It should be done considering company marketing budget, sales plan and market analysis conducted before. When the alternative sets are developed, optimal channel structure should be chosen based on criterions defined by company management. This algorithm will help to analyze company existed process of distribution channel mix formulation and develop recommendations for its improvement. However, it is general, and reasons for alternative distribution channels choosing should be defined.

The distribution structure is composed of chosen channels, among which there are direct (with no intermediaries) and indirect, in which retailers and wholesalers can be involved. Producing several product types and with the aim of reaching multiple target markets, companies now use multiple channels strategy. Additionally, different channel levels are applied – from zero level to multi-level channels. Such changes increase the complexity of distribution system, creating space for channels conflicts [67] and complicates channel evaluation procedure. However, another tendency connected with global, but fast changing market can be observed. It is long-term contracts conduction. Building stable and long-lasting relationships, distribution network partners share risks and reach higher competitiveness [40, p. 125], balancing the level of overall complexity.

Combination of distribution structures is organized in distribution networks. One of the most popular classification of them was suggested by M. Straka. In accordance with it there exist point, line-immediate, line-indirect, star, flower and circuit distribution network types [61, p. 83]. These are networks of simple form, which are now cannot exist due to complexity of exchange procedures. So, the most common type of distribution network for now is complex one, which combines different directions, intermediaries, and channels of distribution.

When considering intermediaries, companies are usually influenced by such factors:

- intermediaries structure realizes sales guarantee principle as it involves the

establishment of long-term relationship between contractors and guaranteed fulfilment of agreement obligations;

 as intermediaries has own distribution infrastructure, it can involve less costs for producers to sell through intermediary than to build up own distribution network with storage and transportation means involved;

 involving intermediary in distribution process means sharing commercial and financial risks, and so their minimization for company;

 management of producing company can be not informed about market infrastructure and conjuncture, and so involve more informed intermediaries with already established network.

Main criteria analysis showed that the most important criteria for intermediary choosing by companies are cooperation, management planning strength, coverage and payment terms [45, p. 61]. However, each company can set its specific criteria in accordance with the targets it has.

Distribution channel structure falls under the influence of multiple external and internal factors. Let us consider external factors influencing distribution channel structure choice. Bruce Mallen noted that among them there could be market, marketing mix and resources [52].

Depending on the level of market competitiveness, its infrastructure development and diversification, the functions of distribution channel differ which influence the choice. Another factor impacting distribution channel structure is product type for which different types of distribution intensity (intensive, selective, and exclusive) can be applied. Legal regulation is another factor to be considered. Ownership restriction, government regulation of business activities, government support of industries and international laws define infrastructure for channels to develop.

Generalization of influencing factors is presented in tab. 1.2.

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Factor	Characteristics	Influence
	Competition, infrastructure,	Need in intermediaries, availability of
Market	monopolization, segmentation,	government regulation, dependence on
	balance of demand	informational technologies
Product	Elasticity, seasonality, transportation	Duration of contracts, export
Floduct	costs	conditions, channels interrelation
Legal regulations and politics	Ownership restrictions, government support of industries, international trade laws, pricing	Availability of channel, international channels
Social and	Consumption habits, information	Channels variety, intermediary's
cultural	technologies awareness, level of life	necessity, pricing

External factors influencing the structure of distribution channel

Among others external factors influencing the structure of distribution channel, cultural aspects, customer service, internet, transaction costs can also be defined [63, p. 68 - 70].

When considering internal factors influencing distribution channel structure choice, it should be noted that they are highly interdependent. The very first factor to consider is availability of marketing department at the enterprise and main performers of marketing activities. If marketing department is not available and marketing is performed by company management, company has low understanding of market and its conjuncture and so distribution channels structure is mainly based on intermediaries' contacts and performed on lower budgets. When marketing is performed, company has resources to conduct marketing activities and so direct channels of distribution are used.

Another factor to consider is availability of storage facilities and transportation means. It relates to the size of company. Large-scale companies have complex distribution networks and no need of intermediaries' facilities usage. However, large size of company does not lead to multichannel strategy implemented [41].

Order size also has influence on distribution channel chosen. With order size increase, it is more profitable for company to use direct distribution [51, p. 198].

Main internal factors influencing the structure of distribution channels are presented in fig. 1.2.



#### Fig. 1.2. Internal factors influencing the structure of distribution channel

Analysis of internal and external factors influencing distributional channels choice increases company awareness of distribution costs involved, ways of expenditures reduction and customer service improvement. In the same time well-planned distribution strategy diversifies risks of distribution activity, open opportunities for company to discover new markets, decrease transactional costs and set optimal distribution channel for each product category. When choosing distribution channel, company deals with various risks. Generalized set of possible risks is presented in fig. 1.3.

So out of analysis of external and internal factors influencing distribution, risk structure was formed. When developing or improving distribution policy, special efforts should be given for risk minimization procedures.

However, markets of different product categories have specific characteristics, having great influence on distribution process. As the base of research is agricultural producer, the specifics of market should be considered in detail.

Morphological analysis of term "distribution" demonstrated that this activity is highly connected with economic utilities of possession, form, time, and place and can be defined as a process which supports product transformation from the point of production to the point where demand has been recorded by distribution channels means. So distribution process is oriented on customer satisfaction goal [53].



#### Fig. 1.3. Distribution risks which can influence company distribution policy

In the same time distribution channel decisions is important component of company distribution process as it has influence on strategic decisions such as price setting and advertising, and in the same time influences financial results through connection with sales volumes and cost structure.

When choosing distribution channel company is influenced by various internal factors such as availability of marketing department, storage facilities and transportation means, size of average order and availability of information about market. Among external factors there are market conjuncture, product specifics, legal regulations, social and cultural aspects.

# **1.2.** Specifics of distribution and channel management in Ukrainian agricultural enterprises

For better understanding of distribution process specific on Ukrainian agricultural market, it is important to analyze its conjecture and ways by which it influences channel management. Ukrainian agricultural market has great development potential, as in the beginning of 2019 there were 41,4 mln. hectares of agricultural land available, which makes 19% of Europe territory. In the same time, share of plowed land in Ukraine makes 54% while it tales only 35% in Europe [8, p. 3].

By its essence Ukrainian agricultural market can be considered as one with pure competition, as lots of independent producers are selling on it [5, p. 26 - 27]. But despite natural potential and competitiveness, conjecture of market remains complex, which negatively influences the distribution activity of companies operating on it. As it was described before, there are several principles of distribution – strategic orientation, adaptability to internal and external factors, effectiveness. However due to specifics of agricultural production, it is necessary to highlight some more. One of them is principle of sales guarantee.

As companies deal with long-term production cycles, long-term contracts with contractors are established. Distribution process should be based on distribution risks minimization. Another principle to be considered is orientation on regional market which defines structure of entities involved in distribution process.

For further distribution process analysis, it is also important to consider main players of distribution channels. Agricultural products manufacturers are mainly involved in raw materials production. They are represented by agricultural enterprises (state and private), production cooperatives and farm households. Based on research done by State statistical service of Ukraine research [28, p. 171], tab. 1.3 was constructed.

It shows number of entities involved in agricultural production in dynamics. Due to restructuring process in statistical service structure, statistics for given category stopped to be collected in 2018. However, dynamics of entities can still be observed and analyzed, with main trends defined. It can be observed that main entities are business partnerships, private enterprises, and private farms, while state enterprises and cooperatives are not so widespread. Let us consider the structure and its dynamics in detail.

#### **Table 1.3**

# Number of enterprises engaged in agricultural activity, by the organizational and the legal forms of business (%)

Туре	Year				
	2014	2015	2016	2017	
Business partnerships	16,8	17,0	18,2	15,3	
Private enterprises	8,2	8,0	7,9	7,1	
Cooperatives	1,4	1,3	1,5	1,0	
Private farms	71,6	71,2	70,6	74,9	
State enterprises	0,5	0,5	0,5	0,4	
Enterprises of other types of business	1,5	2,0	1,3	1,3	

During 2012 – 2017 years number of agricultural producers decreased from 49,4 thousand to 45,5 thousand entities, while output increased from 307 mln. UAH to 707,8 mln. UAH. The greatest share of agricultural producers is given to private farms, with the slight changes in its share during analyzed period. State enterprises make the lowest share in enterprises structure. Among the main consumers there are processing enterprises, population, and government. Exchange process is performed via trading companies, cooperatives, auctions, exchanges. Processing enterprises are considered the biggest consumer of agricultural products.

Realization to population is mainly organized through local markets and fairs, own shops and as payment for wages (including realization through catering). The dynamics of distribution channels of agricultural enterprises is presented in tab. 1.4 and is based on State statistical service of Ukraine research [18].

It should be noted that "on other channels" field includes realization to intermediaries, public organizations (kindergartens, schools, and hospitals), other enterprises and export. During 2012 - 2017 the great share of "on other channels" even increased up to 84%. Realization to processing enterprises and on markets show negative trend, with realization on marked decreased to 2,5%.

Table 1.4

Channel of realization		Year				
	2012	2013	2014	2015	2016	2017
Processing enterprises	16	15,9	16,0	11,8	15,0	10,8
On market, through own shops	6,6	5,3	5,2	5,1	4,6	2,5
On other channels	74,5	76,3	75,5	79,9	77,9	84,4
Other	2,9	2,5	3,2	3,2	2,6	2,3

Distribution channels of agricultural enterprises of Ukraine in dynamics, %

So, the distribution process through intermediaries becomes more popular among producers, while direct realization and realization on wholesale and retail markets has low share. It signals undeveloped infrastructure of agricultural market. Market is also unbalanced in terms of producers to intermediaries' rate. As number of latest is much lower than the number of manufacturers, intermediaries are often considered as monopolists and so price setters.

Ukrainian agricultural market distribution channels are depicted in fig. 1.4.



Fig. 1.4. Distribution channels structure of internal Ukrainian agricultural market

Another peculiarity of distribution in agricultural market is unstable demand due to seasonal production and weak market infrastructure. It highly influences price fluctuations, which also has impact on distribution process. Companies realize products by multiple channels approach. Different product types are realized through different channels to different consumers, which makes distribution structure complex and not transparent.

Depending on type of product distributed, companies formulated distribution habits. There are several agricultural markets presented in Ukraine. Among them there are markets of crops, meat, and dairy products. Crop farming produces 73% of agricultural output [1, p. 19 – 26]. Inside crop farming the greatest shares of production are given to grain and oilseeds. Distribution on these markets is mainly performed via multi-level channels, not directly. V. Rossoha explains this by inequality in infrastructure of producers and resellers. Producers have no ability to form large-scale bunches of product [24, p. 32 - 33]. There could be added that producers are provided with incomplete information about market, and so cannot choose between channels objectively. The vast majority of agricultural producers don't have marketing departments in their organizational structures, so most of marketing decisions are made by company management [34, p. 223] and based on own experience. That is why one of first steps suggested when dealing with distribution activity improvement is creation of marketing departments and marketing strategy development [33, p. 130].

At the same time, due to specifics of production the most widespread type of distribution on other crop markets is direct one, which involves long-term relationship between contractors.

Analysis of regional agricultural market conducted by Romaniuk N. D. also showed that distribution through intermediaries negatively influences financial result of enterprises operating in the fields of stockbreeding and vegetables growing [23, p. 104]. The best distribution channel for such companies are cooperative structures.

However, when talking about animals and milk realization, the most popular

channel of distribution is to processing enterprises. However according to analysis done by Ukrainian statistics service, volumes these products realization decreases from year to year.

Supply of animal production to processing enterprises is described in tab. 1.5.

#### Table 1.5

		Increase rate,			
Distribution	2015	2016	2017	2018	2018/2015 (%)
			Anima	als	
Purchased – total, thousand tons	395,2	353,7	341,8	327,5	-17,13
from which: acquired on tolling conditions	36,7	39,9	40,3	44,0	19,89
	Milk				
Purchased – total, thousand tons	4089,8	3709,7	3927,8	3808,5	-6,87
from which: acquired on tolling conditions	137,8	440,9	395,9	345,7	150,87

Supply of animal production to processing enterprises

Tab. 1.5 is based on data from "Agriculture of Ukraine 2018" [27, p. 198] statistical yearbook. Tab. 1.5 shows that volumes of production delivered to processing enterprises have negative tendency, with animals' volume decreased on 17% in 2018 comparing to 2015 and milk volumes decreased on 7% for the same period. However, in internal realization structure, share of distribution on tooling basis increases for both categories. General decrease in realization volumes is explained by decreasing of companies' interest to produce animal products, as plant growing field is more profitable. At the same time tolling basis distribution increase shows ineffective agricultural market functioning. Such orientation on profitability makes overall structure of agricultural production not balanced and negatively impacts agricultural market development [35, p. 721].

Therefore, we can see that distributional habits are formed not only due to specifics of production, but also due to complex infrastructure of market itself. Chose of distribution channel depends on several more factors. Among them there are profitability level, procedure transparency, stability of sales, availability of infrastructure for storage and transportation, demand, information about market. It should be noted that list of influencing factors is not limited to listed above, it is also individual for each enterprise. In general, the greater priority is given to stability of sales factor, as it directly influences volumes of production. Despite the great importance of transparency for market development, such factor is frequently ignored by producers due to lack of information.

As it was stated before, distribution through wholesale markets and exchanges has low share in structure of distribution. Jurakovska L. A. defines several reasons of ineffective activity of agricultural exchanges. Among them there are [16, p. 3 - 5]:

 as exchange activity is allowed only for registered brokerages, agricultural producers should pay additional charges for broker activity, and so are not motivated to distribute products through exchanges;

- low demand on local exchange due to low motivation of intermediaries;

- no futures and options contracts on local exchange market.

Exchanges are perceived as one more intermediary on market, and so is not attractive for agricultural producers [36, p. 51]. Despite low motivation of producers to distribute products through exchanges, they have advantage of higher prices and so could be used by producers for sales revenue increase in long-term.

Another structure in wholesale distribution structure is presented by markets. Despite the presence of government target programs, wholesale markets are still cannot be considered effective places for market price formation. Among the main disadvantages of local markets there are [3, p. 93 - 98]:

 tariff policy does not support middle and small size producers to realize their products, as tariffs are high and not controlled by executive authorities;

- due to low number of wholesale buyers on markets, retail trading become widespread;

 bidding is not presented on local market, even though it is the most popular trading mode on international markets;

- wholesale market has no effect on retail market prices, the influence is situational.

In addition to listed disadvantages, it should be noted that vast majority of markets are private, and that is why interested only in profit maximization, not market development [12, p. 108]. In addition to it, analysis of market infrastructure shows great influence of government on distribution process in agriculture. Generally state controls sector development by means of prices policy, taxes policy, budget and financial support. Government regulation is performed via set of laws and programs among which "State target program of agricultural sector development until 2022" is presented. It declares activities oriented on increase of crediting availability, development of market and exchange infrastructure, stimulation of sector diversification.

Among other factors, government provides target programs for agricultural sector development, which influences market infrastructure and so distribution process itself. In fact, government support of agricultural sector has disadvantages. In 2019 more than 5 908 mln UAH were provided to main agricultural sector support programs. However only 2 580 mln UAH were realized [31], which makes 44% out of planned charges. As for financial support of agricultural producers, 8,81 mln UAH were planned, but in fact only 5,8 mln UAH (or 66%) were realized. Low realization of budget can be explained by complicated procedure of financing, low awareness of agricultural producers about supporting programs.

Price policy is another factor, which can be influenced by government. However, prices on agricultural products are unstable, with considerably lower prices on wholesale distribution. For example, according to the research done by L. Mikhaylova [13, p. 43 - 44], wheat is mostly realized in summer, with small share of it realized in second part of the year. Such situation creates unbalanced supply which lead to price decrease in this period.

Demand for local products is low due to high quality of imported products. Additionally, agricultural products are highly interchangeable and so demand is unstable. Supply is also unstable as is dependent of weather conditions and lowered by complex market infrastructure.

In the analysis, which studied government agricultural policy, conducted by

National institute for strategic studies, several main problems of Ukrainian agricultural sector were defined, among them there are [52, p. 5 - 9]:

- absence of government program regulating the development of agricultural sector;

- underperformance of government support programs;
- unavailable bank crediting for agricultural producers;
- weak social infrastructure in villages.

Re-analysing fig. 1.2 we can conclude that distribution process of agricultural enterprises in Ukraine is highly dependent on market infrastructure. Great share of agricultural producer does not have marketing departments in their structure. Due to this fact financial resources for marketing activities is low, with weak governmental financial support. Generalization of market conditions influencing distribution process is presented in tab. 1.6.

#### Table 1.6

Factor	Characteristics	Influence
	disbalance of producers and	price disparity,
	intermediaries/consumers,	indirect distribution preferred,
Market	unstable demand,	low availability of information about
	not effective wholesale market	market,
	and exchange structure	complex distribution structure
	unstable supply,	long-term contracts,
Product	seasonal production,	production based on sales guarantee,
Flouuci	low elasticity,	low budgets on marketing activities
	no marketing departments	(market research)
Legal regulations	government regulation and	weak price policy,
and politics	support available	subsidies available
Dependence on	high dependence, but low	intuitive choice of distribution channels,
market	awareness	low share of direct distribution
infrastructure	awareness	

Effect of agricultural specific factors on distribution process in Ukraine

Because of low availability of information about market, the most widespread type of distribution is through intermediaries. In the same time wholesale markets and exchanges, which are classical distribution channel for agricultural products, are not effective enough and have no impact on retail prices. That is why agricultural producers sell product for lower prices.

Considering difficult organization of local agricultural market, companies should conduct marketing activities to build up strong and profitable distribution policy.

As the base for research is agricultural company, Ukrainian agricultural market conjuncture was analyzed to find out main factors influencing economic activity of companies operating in it. The main players on this market is agricultural producers mainly represented by large holdings [4] and private farms. Their main consumers are processing enterprises, population, and government. As intermediaries trading companies, cooperatives, auctions and exchanges are existing. Multichannel approach is common for given market, while specific product category is mainly distributed through one channel. Among market peculiarities influencing company activity there are complexity of organization, not developed wholesale market and auction structure, low awareness of producers about market functioning specifics and price disparity. It leads to increased realization through intermediaries and prices lowering. Market is dependent on government support, however it is weak.

#### **1.3.** Strategies of distribution network improvement

As it was mentioned in subchapter 1.1 and subchapter 1.2, one of distribution principles is strategic orientation, according to which distribution channel structure should be coordinated with overall company strategy. Review of scholarch researches, in which distribution process is analyzed considering given principle, shows that such approach involves evaluation of channel financial characteristic, main distribution indicators, market coverage business reputation, storage facilities [22, p. 169]. However, distribution channels analysis should be performed as a part of company distribution strategy.

According to Rossoha research, there are several methods of increase of distribution effectiveness, among them there are risks diversification, search for perspective markets, decrease of production costs and optimal selling volume for each channel calculation [25, p. 71]. However under the conditions of complex organization

of agricultural products market, factor of market adjustment should also be considered while distribution improvement, That is why among studied methodological approaches to improve distribution strategy of enterprise there was chosen one, which involves three major stages – analysis of existed structure, benchmarking, and implementation of new structure. Each of listed steps is decomposed on several stages. The preliminary stage is coordination of suggested distribution structure with existed strategic orientation of company. As a reference, the model by B. Rozumei [21] was used. He suggests several possible distribution strategies to be implemented. Such strategies should be applied in accordance with overall strategy implemented by company. Interrelation of strategies is represented in tab. 1.7.

#### **Table 1.7**

	e	· ·	<b>·</b> · ·	• 4 1	1. 4 .1 4.	<b>·</b> · ·	<b>FA11</b>
Coordination	OT A	enternrice	strategies	with	distribution	strategies	1/11
Coordination	UL V	chitci pi ist	suatero	** 1 1 1 1	usumunu	suaters	

N⁰	Company strategy	Distribution strategy
1.	Sustainability	Increase/sustain of sales volumes
2.	Market share leadership	New distribution channels introduction, increase of sales volumes
3.	Keeping market positions	Expenditures management, decrease of distribution costs
4.	Profit maximization	Distribution channels profitability increase
5.	Sales effectiveness increase	Sales volumes increase, expenditures control

The hypothesis of interrelation between company overall strategy and distribution strategy is also stated by O. O. Bruch, with accent made on profit maximization strategy. It is noted that this strategy can be realized only by right distribution channel selection and minimization of overall costs [2, p. 115].

After distribution strategy is set, it is necessary to consider distribution channels mixes available. For this stage performing, it is necessary to:

- 1) reason the need of new distribution structure setting;
- 2) set alternative variants of distribution channels mixes;
- 3) chose optimal distribution channels mix.

On this step several mathematical and statistical tools can be applied. As the analysis will be conducted from outside, it is important to understand company's vision

of distribution channels. When choosing, company management evaluate marketing channels by bunch of criteria, respectively multiple-criteria decision making (MCDM) models should be considered, with one of them chosen for future analysis.

Taking into account the problem of given thesis, MCDM models for choosing one variant among several available were reviewed. Among them simple multi attribute rating technique (SMART), measuring attractiveness by categorical based evaluation technique (MACBETH) and analytic hierarchy process (AHP) were chosen. Let us consider each of them in detail.

SMART technique is simplest among MCDM models, as it involves assignment of weights to each criterion and converting it in numerical scale. Such conversion can be done applying linear model. Result value is calculated simply by multiplying each value attribute by weight. Considering its simplicity, this model is widely used for logistics, manufacturing, environmental and assembly problems solving [66, p. 61].

MACBETH method involves measuring alternatives in term of their relative attractiveness, with pairwise comparison technique applied. During analysis, the decision matrix must be constructed, with judgment scale pre-defined and consistency analysis foreseen. Given decision-making technique also involves usage of software for future analysis. Due to model usefulness it is also widely used in supplier selection manufacturing systems evaluation, industrial performance measurement [64, p. 38].

Another popular technique is AHP, which is widely applied for making decisions in fields of supply chain management such as supplier selection, supply development, performance measurement, value chain and distribution network [65, p. 441]. Analytic hierarchy process is multi-criteria decision-making method, which is based on pairwise comparison of established set of alternatives by decided criteria. The analysis involves expert opinions to be collected. As MACBETH technique, it involves construction of decision matrix and consistency analysis conduction. Even though AHP and MACBETH seem similar, they have different judgment procedures.

When comparing SMART with AHP and MACBETH, it should be noted that latest are used for more complex problems solving, as they decompose problem on several hierarchical levels, while SMART deals only with linear structure. At the same time as SMART has simple structure, the probability of inconsistent results occurring is lower.

Comparison of three chosen methods was conducted. It was studied that MACBEHT and AHP methods have similarities by criteria comparison. At the same time SMART model is too simple to be applied for problem analyzed. It should be noted that each of considered models involves usage of specific software, which is available and easy to use. That is why comparison of software was not conducted to decide among alternatives. Final criterion for making decision was combination of method complexity and its applicability to the problem of given research. As sphere of application of AHP model is closer to one considered in given thesis, it was suggested to apply analytic hierarchy process. Tab. 1.8 summarizes comparative analysis of three models.

#### **Table 1.8**

Comparison of chosen multiple-criteria decision making models by criteria

Model	Complexity	Data intensity	Probability of results inconsistency	Software
SMART	Low	Low	High	Yes
MACBETH	Moderate	Moderate	Moderate-low	Yes
AHP	Moderate	Moderate	Moderate	Yes

T. L. Saaty suggests four steps of decision-making process using given model [57, p. 85], among them there are:

1) to formulate the problem and its scope;

2) construct hierarchical structure, starting from goal on top, with criteria as intermediate level and set of alternatives on lower level;

- 3) construct pairwise comparison matrices;
- 4) weighted priorities setting to receive global priority.

For comparison matrix construction it is necessary to have one or more experts chosen and interview questions defined. Evaluation of alternatives is conducted by predefined scale of absolute numbers, where 1 means "equal importance" and 9 means "extreme importance". When constructing matrix, next formula is used:

$$a_{ji} = \frac{1}{a_{ij}} \tag{1.1}$$

where  $a_{ji}$  is evaluation of alternative j in comparison with alternative i;

 $a_{ij}$  is evaluation of alternative i in comparison with alternative j.

Pairwise comparison matrix can be depicted as follows:

$$A = \begin{bmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \cdots & \cdots & \cdots & \cdots \\ a_{n1} & \cdots & \cdots & a_{nn} \end{bmatrix} = \begin{bmatrix} 1 & a_{12} & \cdots & a_{1n} \\ \frac{1}{a_{12}} & a_{22} & \cdots & a_{2n} \\ \cdots & \cdots & \cdots & \cdots \\ \frac{1}{a_{1n}} & \cdots & \cdots & 1 \end{bmatrix}$$
(1.2)

After comparison matrix is constructed, it is normalized, and weight of each criteria is calculated by arithmetic mean of each matrix raw. As given decision-making technique is based on qualitative values analysis, it should be checked on consistency. Both internal and external consistency should be values – how experts agree with each other and how different judgment of one expert are agree with each other. For this reason, consistency ration (CR) is calculated by formula:

$$CR = \frac{CI}{RC} \tag{1.3}$$

where CI is consistency index;

CR is random consistency.

Random consistency is tabular value, which is completely inconsistent number and can be received, when matrix is filled with completely random values. Consistency index shows the actual mistake presented in matrix and is calculated as:

$$CI = \frac{\lambda - n}{n - 1} \tag{1.4}$$

where  $\lambda$  is total weighted priority index;

n is matrix size.

When comparing with greatest possible mistake, consistency of matrix is evaluated. According to the theory by Saati, CR should not be greater than 20%. When all matrixes are calculated, importance index for criteria and alternative are multiplied. Selected channel will be those with higher classification.

It should be noted that this method gives us possibility to review which criteria has the greatest priority for company management and how it correlates with actual distribution policy of company. However actual distribution policy of company should also me measured quantitatively and qualitatively.

First of all, it is important to understand how distribution process is organized on the level of organizational units interaction. To do it, technic of business process modeling is planned to be applied. Business process modeling can be defined as "activity aimed at the representation of all or some of the above elements in order to produce a cohesive model of the behavior required to deliver a service and/or product to a customer or another part of the organization" [38, p. 3]. It is planned to describe existed process in two notation – IDEF0 and EPC, using Ramus and Aris software, respectively. IDEF0 notation will be used to describe process of channel choosing in general, while EPC model will include specifics.

IDF0 can be applied as for new structures modeling, as for existed one's analysis. When applying to existed structures, given notation helps to "analyze the functions the system performs and to record the mechanisms (means) by which these are done" [44].

Building blocks of given notation are boxes and arrows. Process or activity are represented by boxes. Transformation of activities are presented in form of 4 arrows – input, output, control, and mechanism. As an input and output categories, material or informational resources can be stated. Control arrow involves standards, procedures, technologies, rules by which process is performed. Mechanism deals with employees, equipment, software etc. involved in process performance [59, p. 133 – 134].

Several building blocks are connected to create chain, which represents business process. Among the main notation advantages there is precise definition of each component, which makes diagram simple and understandable. Among the drawbacks there are busy placement of boxes and considering business process as a sequence only.

Graphical representation of model building block is presented on fig. 1.5.



Fig. 1.5. Building blocks of IDEF0 notation

Another notation to be used is event-driven chain method (EPC). It is designed as activity-event chain, with event considered as a trigger of business activity [54, p. 2]. Despite IDEF0 model, this notation allows several events occur simultaneously. However, three rules are to control character of event-activity interaction ("or" "and", "exclusive or"). "And" rule states that both events must occur, "exclusive or" requires only one event to occur, while "or" considers all possible combinations. EPC model can also be widened by database, responsibility, IT-systems shown.

Therefore, business process modeling will help to define real performance of distribution process and to find out window for process improvement. However economic analysis of marketing strategy and channels performance should be conducted for deeper understanding of cost and profit centers. It is suggested to firstly analyze indicators of economic and financial performance of company in a general. It is important to analyze not separate but set of indicators in order to find evaluate the dynamics of given indicators for a specific time period. In accordance with the results

of analysis, indicators which demonstrate the need for situation improvement can be defined. Among them there are profitability of marketing activities, speed of decision-making, level of plan fulfilment [29, p. 4] etc. Selected set of indicators will be used for such purposes.

When analyzing company distribution activity special attention should be given to such indicators as commercial product, inventories and accounts receivable turnover. Dynamics of CP shows the scope of production, while inventories demonstrate effectiveness of produced products distribution. Accounts receivable turnover reviles how long company production cycle is. Profit on sales and return on sales are indicators that show direct financial results from distribution, so dynamics of these indicators should also be analyzed. In addition to it such indicators as return on sales, share of non-distributed finished goods, marketing costs effectiveness are important when analyzing overall company competitiveness in distribution activity [20, p. 66].

Tab. 1.9 generalizes selected indicators, which can be used for different aspects of company activity measurement.

#### **Table 1.9**

Name	Formula	Description
1	2	3
	Indicators of company sales activity	
Commercial product (CP), shows total value of finished products produced	$CP = SR + FG_c - FG_o$	SR – sales revenue $FG_o$ – opening value of finished goods $FG_c$ – closing value of finished goods
Gross product (GP), shows total value of finished products produced – finished and unfinished	$GP = CP + \frac{SR}{CoGs} * (WiP_c - WiP_o)$	$CoGs - cost of goods sold$ $WiP_o$ - opening value ofwork in progress $WiP_c$ - closing value ofwork in progress

Indicators for company economic analysis

#### **Continuation of tab. 1.9**

1	2	3		
Turnover indicators				
Total assets turnover $(TA_t)$ , shows how many UAH of sales revenue are generated by each item of total assets	$TA_t = \frac{SR}{TA_{avg}}$	$TA_{avg}$ – average value of total assets for period		
Inventories turnover $(I_t)$ ,	$I_t = \frac{CoGs}{I_{avg}}$	$I_{avg}$ – average value of inventories for a period		
Accounts receivable turnover $(AR_t)$ , shows number of turns each UAH of AR makes during a specific period	$AR_t = \frac{SR}{AR_{avg}}$	$AR_{avg}$ – average value of accounts receivable for a period		
P	rofit and profitability indicators			
Gross Profit ( $P_g$ ), shows results of company main activity considering mostly production costs	GP = SR - CoGs			
Profit on Sales $(P_s)$ , shows the financial result of company sales activity considering all the related costs	$P_{s} = SR - TC,$ where $TC = CoGs + C_{a} + C_{c}$	$C_a$ – administrative costs $C_c$ – commercial costs TC – total costs		
Return on sales (ROS), shows the share of profit in sales revenue	$ROS = \frac{P_s}{SR} * 100\%$			
Product profitability $(P_p)$ , shows how many UAH of profit company generates over each UAH of total costs	$P_p = \frac{P_s}{TC} * 100\%$			
Enterprise profitability $(P_e)$ , shows how many UAH company generates over each UAH of assets involved in main activities	$P_e = \frac{P_s}{PPE_{avg} + CA_{avg}} * 100\%$	$PPE_{avg}$ – average value for property, plant and equipment for the period $CA_{avg}$ – average value of current assets for the period		

Another non-calculative indicator to be considered is company sales volume as it influences change in costs of goods sold, product profitability, general financial results of a company and its overall competitiveness [30, p. 133]. However, it is important to notice that increase in production volumes will lead to proportional increase of costs involved, with rising importance of their structure for costs of goods sold [1]. After general overview of company is done, it is possible to analyze its distribution activity in context and find out main interdependencies of results. Based on literature research concerning marketing activities effectiveness measurement [14; 19], tab. 1.10 was constructed. It summarizes indicators used to measure company distribution activity. Most of the indicators are great for company competitiveness measurement in terms of distribution.

#### **Table 1.10**

Name	Formula	Description
Company market share, %	$R_s = (\frac{S_i}{\sum S_{is}}) * 100\%$	$S_I$ – sales volume of company i, UAH $\sum S_{is}$ – sales volume of all companies in the market, UAH
Marketing costs growth rate	$\Delta Mc = \frac{Mc_1 - Mc_0}{Mc_0}$	$Mc_1$ – company marketing costs, analyzed year $Mc_0$ – company marketing costs, previous year
Marketing costs intensity	$Mc_i = ({^{Mc}/_{GP}}) * 100\%$	GP – gross product
Marketing costs productivity	$Mc_p = ({^{GP}/_{Mc}}) * 100\%$	GP – gross product Mc – marketing costs
Relative speed of increase of marketing costs comparing to sales volume	$\Delta Mc = \frac{\Delta MC}{\Delta SR}$	$\Delta SR$ – sales volume increase $\Delta MC$ – marketing costs increase
Marketing costs profitability	$P_{Mc} = \frac{P_s}{MC} * 100\%$	$P_s$ – profit on sales MC – marketing costs

Indicators of distribution policy effectiveness measurement

Listed indicators will help to evaluate present distribution policy performance, while being good source for future comparison. Panukhnyk O.V. states that final KPIs which can show the effectiveness of distribution policy improvement are number of orders increase, demand stabilization, marketing and transportation costs decrease [15, p. 187].

It should be noted that effectiveness of distribution channels should be calculated separately. Among the indicators, which allow to analyze channel performance there are channel profitability, plan realization, share of product sold through specific market channel, product profitability by channels of distribution. Given indicators are comparable and so could be used for future analysis. Distribution channel effectiveness change may influence overall financial indicators of company and be an effective tool of reaching company goals of profit maximization or costs decrease. It should be noted that sales volume and costs of goods sold are interconnected and so should be improved separately. Profitability of channel is the main indicator to be considered when making final decisions. It is proposed to analyze different distribution channels by product type and compare their profitability. Formulas and description of suggested indicators is presented in tab. 1.11.

#### **Table 1.11**

Name	Formula	Description
Index of plan realization	$P = \frac{SR_{ch}a}{SR_{ch}pl}$	<ul> <li><i>P<sub>s</sub>a</i> – sales revenue on marketing channel, UAH</li> <li><i>P<sub>s</sub>pl</i> – planned sales revenue on marketing channel, UAH</li> </ul>
Share of product distribution through specific marketing channel	$P_{sh} = \frac{SR_{ch}a}{SR}$	SR – sales revenue, UAH
Distribution channel profitability	$Ch_p = \frac{P_s}{SR_{ch}a}$	<i>P<sub>s</sub></i> – profit on sales through marketing channel
Product profitability by channel	$P_p = \frac{Pr - CoGS}{Pr}$	Pr – price per unit on marketing channel, UAH; CoGS – cost of goods sold, UAH

Economic indicators of distribution channel effectiveness

Analysis of listed indicators show that profitability of product will increase with the increase of product price. It seems reasonable to check price for product produced on different markets available and consider price factor when making channel choice. After analysis of economic background of market and theoretical basis of distribution process it was decided to use business process modeling technique. It was suggested to use IDEF0 notation for general process construction and EPC notation for more specific process modelling. As for recommendation suggestion it was necessary to receive company management internal understanding of distribution channels advantages and disadvantages, multiple-criteria decision making models were compared, with AHP one chosen as the most appropriate for given case. For better understanding of company financial and economic result, it was necessary to conduct technical, economic, and financial analysis of company activity. For given purposes analysis of existed indicators was conducted and set of indicators to be calculated was defined. All listed methods will be used in future analysis.
# 2. COMPREHENSIVE ANALYSIS OF ALLC "MRIIA" ACTIVITY

#### 2.1. General characteristics of enterprise

The base of given research is local agricultural company "Mriia", with economic center situated in Petrivka village. It was founded in 2000 year [6] and has limited liability legal form. Main specialization of enterprise is grain and dairy products production. Farm property occupies several settlements in Kharkiv region, particularly covering Lozivsky, Sakhnovshchansky, Kehychivsky, Novovodolahsky, Krasnogradsky and Valkivsky districts.

According to the company charter, among company's activities there are growing of cereals, legumes, oilseeds, other annual and biennial crops; breeding of cattle dairy breeds; supporting activities in crop production; production of meat; processing of seed for reproduction; wholesale trade of grain, raw tobacco, seeds and animal feeds. As grain crops occupies 70% of sown areas, the main type of economic activity is "growing of cereals (except rice), legumes and oilseeds seeds" (code 01.11 in the National Classification of type of economic activity).

The statutory capital of the company consists of contributions from two participants and makes 188 674 784,32 UAN. Analysis of company participants and their shares in statutory capital shows that "Mriia" is a part of Kernel group, as 99% of statutory capital is made by limited liability company "Jerste BV" which is Kernel Holding S.A. subsidiary. Another 1% share in statutory capital is made by limited liability company "Ukroagrobiznes.

Kernel is the world's largest producer and exporter of sunflower oil, which supplies agricultural products to more than 60 countries in the world. In Ukraine it operates in 11 regions and possesses 530 thousand hectares of land. In 2020, it took the first position in the ranking [32] of the largest landowners in Ukraine. In 2020 fiscal year Kernel totally produced 3.1 million tons of key crops [49, p. 26]. As it stated in company financial report, distribution of crops in acreage is 45% attributable to corn, 27% to sunflower, 19% for wheat, 5% to soybean, and other minor crops [48, p. 26]. Kernel-Trade is the first corn exporter in Ukraine, with 3,5 mln ton of corn exported worldwide in the first half of 2020 [42]. As for wheat export, Kernel-Trade is ranked fifth with 338 th. tons exported for the same period [70].

So while analyzing the competitive environment of ALLC "Mriia", the competitors of Kernel Holding in Kharkiv region should be depicted. PLC "UkrLandFarming" is considered as one of the greatest competitors of Kernel Holding. It possesses 500 thousand hectares of land and operates in 22 regions in Ukraine. However, its specialization is differed, as crops mix produced includes 60% of acreage used for canola growing. Additionally, in Kharkiv region the percentage of land in company ownership is low. The main point of competition is land fund, as "UkrLandFarming" took the first place in rating for several years. So PLC "UkrLandFarming" could not be considered as a direct competitor.

Another great competitor is Agroprosperis group, with 300 thousand hectares of land in use and operating in 11 regions of Ukraine, including Kharkiv. Company is specialized on the production of grain. Due to smaller scope of land in use, company does not take leading positions in producers and exporters ratings and so is not compatible for Kernel.

The greatest competitive advantages of company over its competitors is advanced technologies, process optimization techniques, modern equipment in use and integrated structure of company, which covers all the steps from the production to wholesale trade with minimal external sources involvement. According to company annual report, Kernel is presented in seven segments, with own farming, procurement, silo network, processing of oilseed and bottled oil, and export of products produced [47, p. 10].

Under this vertically-integrated structure, ALLC "Mriia" covers two steps – production and silo storage, with the latest one added in the recent process of restructuring. Elevator is situated in Lozova city, having its own laboratory. It deals with products quantity and quality certification for further electronic bidding on internal and external markets.

As for production, the structure of company's commercial product was analyzed based on financial reports data for 2017, 2018 and 2019 years (Report on the main economic indicators of agricultural enterprises activity) concerning the structure of cost of goods sold (CoGS).

The structure reviles main company's activities. Among stockbreeding and plant growing the dominating is latest one, making 78% of all CoGS in 2019. It should be noted that in dynamics plant growing field shows increase during analyzed period, while stockbreeding volumes decrease in 2019 year comparing to 2017. It shows that company strengthen its specialization on plant growing, while keeping stockbreeding on the same level.

However, comparing with 2017 CoGS for both fields show increase, particularly costs for cereals and legumes increased on 179%, while cattle-breeding costs increased on 235%. Such great dynamics in costs of goods sold show company growth and increase of its production volumes.

The results of given analysis are represented in tab. 2.1.

#### Table 2.1

Indicator	Ţ	Value, th. UAH	Dynamics, comparing to base year		
mulcator	2017	2018	2019	Increase, th. UAH	Increase rate, %
CoGS (plant growing) <i>including:</i>	89 304,0	108 530,5	210 784,8	121 480,8	136,03
cereals and legumes	70 177,4	106 777,8	195 622,7	125 445,3	178,75
CoGS (stockbreeding) <i>including:</i>	40 466,3	53 790,6	60 952,8	20 486,5	50,63
cattle-breeding	11 222,2	8 928,1	37 565,6	26 343,4	234,74
Milk	29 244,1	44 860,6	23 387,2	-5856,9	-20,03
Services	2 110,3	-	-	-	-
Total CoGS	131 880,6	162 321,1	271 737,6	139 857	106,05

Structure of cost of goods sold by production categories in dynamics

Analysis of agricultural products balance show great increase in cereals and legumes category. In 2019 the cost of goods sold in this category increased by 178%, comparing with 2017 and by 83% comparing with 2018 year. In the same time during

the year it was realized 562 896 hundredweight of cereals and legumes, comparing with 485 959 hundredweight in previous year (increase of 16%) and 284 272 hundredweight in 2017 (increase of 98%). In average the realization of main categories of goods increased in dynamics, influencing the increase of costs of goods sold. Therefore, it could be concluded that ALLC "Mriia" is an agricultural company with big area of land in use. Its production facilities are spread within the region. Company is specialized in sever types of agricultural activities and operates in favorable conditions on the competitive market.

Internal structure of roles was analyzed additionally as company chart is not documented. According to the charter, the management of the company is provided by the management bodies such as general meeting of participants, director and auditory commission. Director is the sole executive body of the company, who manages its current activities. Person on the position of director of ALLC "Mriia" is chosen on general meeting and must have more than 5 years' experience in the agricultural field and not less than 3 years of managerial experience.

Among the main responsibilities of the position there are achievement of planned indicators on yield and cost; organization, control and coordination of the company's activities; maintenance and increase of the areas of land in the company use. Additionally, he takes responsibility for under fulfillment of budget indicators for costs and yield by more than 10%; loss of more than 2% of the land in company use. Also, director is responsible for the provision of qualification level of working personnel enough for achieving financial and strategic goals of the company.

Working community is composed of employees who are involved in company production process and act based on employment contract. Payment conditions and social grants are assigned to working community members based on legislation. In addition to employment contract, internal regulations are done via collective agreement, internal regulations act and job descriptions. The company is organized by functional (plant growing, stockbreeding) and location departmentalization. Among the direct subordinates of director, who makes up the administrational body of the company, there are deputy directors on production and plant growing, heads of local departments.

The direct observation and analysis reviled that ALLC "Mriia" has the organizational structure common to the majority of agricultural enterprises in Ukraine. There are production, auxiliary, service and administrative divisions in it. Production division is specialized on production process itself and divided by the fields of plant growing and stockbreeding. Each division has its own structure. Auxiliary division is aimed on providing the production process with all necessary resources, such as warehouses, transportation and repairing. The generalized organizational structure is represented in fig. 2.1.



Fig. 2.1. The organizational structure of ALLC "Mriia"

The departmentalization of first hierarchical level is locational, having Lozova business unit specialized on silo storage, while the main production activities are represented in two other regions. The departmentalization for the second layer is functional. Division by location assumes that each BU has two direct superiors – deputy director on production and head of the region. In general, company has typical hierarchical structure of authority.

Considering general specifics of agricultural production process, internal and external influence factors can be analyzed using SWOT analysis. Before analysis conducted, risks defined by "Kernel group" management were considered. Among such risks there can be defined:

competition increase;

- failure in ecological standards compliance;

- economic risk, connected with international and local market growth;

- government policies in legal, political and economic spheres change or ineffectiveness;

financial risks connected with exchange rate fluctuations;

risk of losing control over integrated system of subsidiaries and joint ventures;

- risk connected with operational activity – manufacturing operations disruption.

As "Mriia" operates in integrated structure of Kernel, most of risks defined are applied to it. However, they are mostly external, as internal risks defined are strategic and managed by "Kernel itself". Such fact was considering while preparing SWOT analysis. Results of analysis are presented in tab. 2.2.

As the enterprise exists in infrastructure created by Kernel Group, own resources in use are the main strength of the company. As all the processes are done internally, the outside risks connected with suppliers' relationships are minimized. As big corporation has already established reputation and market share, developed distribution channels are also the point of strength.

At the same time the analysis shows that company revenue and performance indicators are highly related to weather conditions, so this indicator has the greatest score. As company is involved in production of agricultural products intended to sell internationally, the world agricultural market prices dependence is also the point of weakness. Additionally, as company is small and local, it does not have marketing staff. It can negatively influence on company performance if distribution channels are not adjusted to local conditions. Among the opportunities, which company can face in external environment the most valuable are increase in demand and so production volumes of company. Generally, opportunities field is not strong enough as has the lowest score, but it can be compensated by the highest score contributed to company strengths.

### Table 2.2

Strengths	Score	Weaknesses	Score
Usage of own resources for major production processes (transportation,	1,35	Dependence on weather conditions	1,2
storage) Stable demand for produced products	0,45	Dependence on world price changes	0,5
Strong social responsibility policy	0,1	High material and energy consumption of production	0,1
Availability of own sales channels	0,45	Lack of marketing staff due to small size of the company	0,5
The proper condition of the technical base	0,2		
Qualified staff involved in management and production	0,2		
	2,75		2,3
Opportunities	Score	Threats	Score
Increase of production volumes due to demand increase	0,8	Competition increase on international market	0,6
Oil demand increase on international market	0,6	Weak development of local agricultural market infrastructure	0,6
political support for agricultural enterprises	0,15	Demand decrease for vegetable oil	0,2
Legal regulations improvement	0,15	Negative influence of labor reform	0,3
		Unstable situation on international market, economic crisis	0,45
	1,7		2,15

# SWOT analysis of ALLC "Mriia"

It should be noted that company is highly dependent on external threats, as they have great score. World economic crisis can have great impact on company performance as it produces goods for export. Additionally, local market infrastructure is still on its development stage, which influence on company production cycle increase. In combination with the absence of marketing staff, which can redesign the company distribution channels, this factor can have the strongest negative influence on company performance.

So the SWOT analysis shows that company is strong enough to be competitive on market, it also has opportunities to growth. But in the same time external threats have the great influence on company performance and cannot be ignored, the most important factor company can work with is improvement of own distribution channels.

ALLC "Mria" is local agricultural company, which is specializes on plant growing, while keeping stockbreeding field on its constant level. It has own transportation and storage facilities, as it belongs to Kernel Group with highly developed infrastructure. As Kernel has horizontal structure, "Mria" is involved on lower levels of production and storage.

#### 2.2. Technical, economic, and financial analysis of company activity

General analysis of company main activities and characteristics shows availability of negative influence factors such as market infrastructure, lack of marketing staff etc. To find out roots of existed problems, economic and financial analysis of company activity should be performed. For given purposes vertical and horizontal analysis of financial statements was conducted. In addition, indicators of company sales activity, turnover, profitability, liquidity, soundness, and leverage were calculated based on statements provided.

Horizontal and vertical analysis of company balance sheet was performed for 2019 and 2018 years for assets and liabilities separately. Results of vertical and horizontal analysis of assets for both years is presented in tab. 2.3.

Analysis for 2019 shows that in the structure of company assets for given period the greater share was given to current assets (73% in the end of the period), while noncurrent assets made 26,6% of total assets by the end of the period. It should be noted that in 2018 current assets made 92% of total assets in the end of the period, with other accounts receivable share of 52% out of all assets.

In the end of 2019 share of other accounts receivable in the total structure decreased to 20%. Inventories also has great share increase from year to year. If by the end of 2018 it made 19,6% of total assets, in 2019 it increased to 27,81% by the end of the period. In addition to it, there is the high share of finished goods stored, with the

increase from 13,5% of total assets in the beginning of the period to 17,7% by the end of the year.

# Table 2.3

Item		Absolute value (\$ mln.)		veight, %	Change for the period		
Item	Period beginning	Period ending	Period beginning	Period ending	\$ mln.	%	
		Non-Current	Assets				
Intangible assets	26 318	99 410	1,89	9,76	73092	277,73	
initial value	28 737	102 869	2,0667	10,1037	74132	257,97	
accumulated deprecation	2 419	3 459	0,1740	0,3397	1040	42,99	
Incomplete capital investments	5 642	10 897	0,41	1,07	5255	93,14	
Property, plant and equipment	62 302	78 077	4,48	7,67	15775	25,32	
initial value	115 632	129 794	8,32	12,75	14162	12,25	
wear and tear	53 330	51 717	3,84	5,08	-1613	-3,02	
Long-term biological assets	16 550	155	1,19	0,02	-16395	-99,06	
Long-term financial investments	-	82 075	-	8,06	-	-	
Total Non-Current Assets	110 812	270 614	7,97	26,58	159802	144,21	
		Current A	ssets				
Inventories	272 889	283 149	19,63	27,81	10260	3,76	
Production inventories	34 286	35 123	2,47	3,45	837	2,44	
Unfinished production	47 404	64 198	3,41	6,31	16794	35,43	
Current biological assets	14 904	0	1,07	-	-	-	
Promissory notes received	11 646	11 646	0,84	1,14	0	0,00	
on budgets	20065	9 234	1,44	0,91	-10831	-53,98	
Other accounts receivable	688 755	216 395	49,53	21,25	-472360	-68,58	
Money and their equivalents	22	1189	0,00	0,12	1167	5304,55	
Cash	5	12	0,00	0,00	7	140,00	
Cash on bank accounts	17	1177	0,00	0,12	1160	6823,53	
Deferred expenses	242	388	0,02	0,04	146	60,33	
Other current assets	100 455	73 760	7,22	7,24	-26695	-26,57	
Total Current Assets	1 279 697	747 523	92,03	73,42	-532174	-41,59	
Total Assets	1 390 509	1 018 137	100,00	100,00	-372372	-26,78	

Horizontal and vertical analysis of "Mriia" asset items in 2019

Such high share of inventories finished goods stocked and accounts receivable can be explained by specifics of agricultural production, with long cycles and long-term contracts with client. In the structure of non-current assets, the greatest share is made by property, plant, and equipment, which is common for agricultural production. By the end of the period PPA share in total assets increased from 3,5% to 7,7%.

Let us now analyze dynamics of important assets categories. In general company's total assets decreased on 27% during analyzed period. Such decrease was influenced by significant 67% decrease of other accounts receivable. It also influenced the decreasing of this item share in total structure.

Generally, all accounts receivable items demonstrate negative trend for giving period. However, such categories as money and their equivalents, cash and cash in bank deposits increased significantly, which shows that contractors pays out their debts. Finished goods decreased on 4%, while production inventories and unfinished production increased. Most likely the stored goods will be sold in the next period because share of accounts receivable is still significant. Current biological assets were sold in given period, which also explains money inflow.

Considering all changes by the end of the year company's current assets decreased on 41,6% or 532 174 th. UAH. During the period, analyzed considerable increase of non-current assets can be seen (increased on 159802 th. UAH or 144,2%). By categories, the greatest increase is seen in intangible assets (277,7%), which signs company development. Incomplete capital investments increased on 93%, which signals that company will be increased in future. PPA also increased on 25%. During the year company also increased long-term financial investments. Generally, company assets structure shows operational process and internal development.

Horizontal and vertical analysis of balance sheet shows significant decreasing of accounts receivable. It may signal decreasing of sales activity and number of contracts. However, it may demonstrate finishing of existed contracts with long-term payments. To find out reason for such changes, analysis of sales activity will be done.

Horizontal and vertical analysis was also performed for company equity and liabilities. Results of analysis are presented in tab. 2.4.

In 2018 equity and liabilities occupied close share in total structure with 54% belonging to liabilities and 46% belonging to equity.

#### Table 2.4

# Horizontal and vertical analysis of the equity and

	Absolute value (UAH mln.)		Specific weight, %		Change for the period	
Item	Period Beginni ng	Period ending	Period Beginning	Period ending	UAH mln.	%
		Current liab	ilities		•	
Current accounts payable for: goods, works, services	100 444	35 496	7,22	3,50	-64948	-64,66
on budgets	2 249	1 809	0,16	0,18	-440	-19,56
on insurance	149	97	0,01	0,01	-52	-34,90
on labor	604	526	0,04	0,05	-78	-12,91
Current accounts payable on advances	599 436	435 469	43,11	42,98	-163967	-27,35
Current provision	5 960	8 653	0,43	0,85	2693	45,18
Other current commitments	36 219	16 246	2,60	1,60	-19973	-55,15
Total Current Liabilities	745061	498 296	53,58	49,18	-246765	-33,12
		Equity				
Share capital	62 328	188 676	4,48	18,62	126348	202,71
Capital in revaluations	34 153	26 385	2,46	2,60	-7768	-22,74
Additional capital	1 660	1 660	0,12	0,16	0	0,00
Capital reserves	8 241	8 241	0,59	0,81	0	0,00
Retained earnings	539 066	289 906	38,77	28,61	-249160	-46,22
Total Equity	645448	514 868	46,42	50,82	-130580	-20,23
Total Equity and Liabilities	1390509	1 013 164	100,00	100,00	-377345	-27,14

# liabilities of ALLC "Mriia" in 2019

However, in 2019 equity share increased to 51% making structure more stable. The greatest share of equity is made by retained earnings, with 39% in the beginning of the period and 28% in the end. By the end of the year share of shared capital was18,6%, while in 2018 it made only 4%.

In the structure of liabilities, long-term liabilities are not presented, while all current liabilities items show structural decrease. The greatest share belongs to current accounts payable on advances (42% of total share by the end of the year), with not significant structural decrease comparing with previous year.

When analyzing dynamics, it should be noted that greatest decrease was demonstrated by current accounts receivable for goods, works and services (decreased on 64 948 th. UAH or 65%). It signals that company payed out its debts to contractors or number of contracts decreased. Total current liabilities demonstrate negative dynamics by most of categories, in general decreased by 33%. In the same time retained earnings field show decrease in 46%, while share capital increased on 202%. In the same time in 2018 retained earnings increased on 13,34%, while share capital increased on 15% too. It shows that company redistributed its net earnings. Total equities of company also show negative dynamics by all categories, with overall decrease on 20%. Company liabilities decrease faster than company equities, so the riskiness of being unable to repay the debts is lowering.

To prove conclusions received, financial indicators were calculated. The result of calculations is presented in tab. 2.5.

# Table 2.5

Ratio	Year					
Katio	2019	2018	2017			
Liquidity ratios:						
Current	1,63044	1,72134	1,86132			
acid-test	1,18323	1,41019	1,58943			
Leverage ratios:						
debt-to-equity ratio	1,07157	1,17726	1,01622			
debt to total assets ratio	0,51621	0,54071	0,50402			

Financial ratio analysis of ALLC "Mriia" for three years

Current ratio analysis shows that after 2017 company liquidity is decreasing but is still good. As all current ratios are greater than 1 and close to 2, we can conclude that the company has the financial resources to remain solvent in the short-term. Acid-test, which is higher than one for all years, shows that company can meet its current debt obligations without selling inventory. But acid-test values have negative dynamic decreasing year by year.

For all years debt to equity ratio is near 1,1, indicating that creditor financing (bank loans) is used in equal share with investor financing (shareholders). Debt to total assets ratio demonstrates that about 50% of total assets are financed by creditors in 2019 and 2017 years. In 2018 this value was higher due to significant increase of AR.

These indicators demonstrate that company has financial leverage and the greater the risk. Company do not use bank debts, so there is no interest coverage calculated. Such values are present because of contracting nature of agricultural products selling. In general, most of company's assets are financed by creditors, but company still can afford it.

To analyze general performance of company in terms of sales and output generation, output and sales indicators were calculated. Results of analysis are presented in tab. 2.6.

#### Table 2.6

	Value, tl	h. UAH	Dynamics		
Indicator	ator 2018 2019		Increase, th. UAH	Increase rate, %	
Sales Revenue (SR)	418 960	519 874	100 914	24,09	
Commercial product (CP)	519 789	514 181,083	-5 608	-1,08	
Gross product (GP)	529 282,7392	535 719,0078	6 4 3 6	1,22	
Value-added (VA)	209 868,9494	315 565,0416	105 696	50,36	
Net output (NO)	254 095,82	296 663,4243	42 568	16,75	

Output and sales indicators of ALLC "Mriia"

In 2019 the total value of finished products produced by the company was amounted in 514 118 th. UAH, comparing with 520 023 th. UAH in 2017. It should be noted, that while sales revenue of company was increasing, commercial product decreased. Comparing with 2018, in 2019 sales revenue increase rate was 24%, while commercial product decreased on 1,08%. So, it can be concluded that sales revenue increased due to stocked options sold, not due to increase in production.

For two years, the value of gross product was greater than the value of commercial product, meaning the great closing amount of work-in-process in the company. Considering that GP demonstrated growth, while CP decreased, it can be concluded that amount of unfinished goods increased. As accounts payable and accounts receivable decreased, we can assume that operational cycle of company decreased. And so high value of stocked products signals not effective distribution policy of company. More than half of SR was generated by company itself for both years. In 2018 value-added was accounted with increase of 50% comparing with the previous year. Totally company shows the positive dynamics of all output and sales indicators.

Company financial results depends on operational cycle and efficiency of assets and inventory usage. To prove the assumption of operational cycle decrease and tendencies connected with it, turnover indicators were calculated. Results of calculations are presented in tab. 2.7.

### **Table 2.7**

	Va	lue	Dynamics	
Indicator	2019	2018	Increase	Increase rate, %
Total assets turnover, turns	0,43	0,31	0,12	37
Total assets outstanding, days	845,59	1159,15	-313,55	-27
Current assets turnover, turns	0,51	0,34	0,17	52
Current assets outstanding, days	711,69	1078,87	-367,18	-34
Accounts receivable turnover, turns	0,83	0,47	0,35	75
Accounts receivable outstanding, days	441,26	772,63	-331,37	-43
Accounts payable turnover, turns	0,69	0,46	0,23	51
Accounts payable outstanding, days	529,57	797,84	-268,27	-34
Inventories turnover, turns	1,46	1,39	0,07	5
Inventories outstanding, days	250,33	262,66	-12,33	-5

Turnover indicators of ALLC "Mriia"

Total assets turnover indicator demonstrates that during 2019 year each hrivna of total assets generated 0,4 hrivna of sales revenue (with 37% increase of this indicator comparing with 2018 year). But such amount also shows that company's total assets cycle is long (2.3 years in 2019).

This turnover ratio is highly influenced by slow current assets turnover. Specifics of agricultural production involves long-term contracts with contractors, which is

proved by assets outstanding indicator. However, the duration of cycle decreased comparing with previous year.

In 2019 it took 1,2 years, which is 34% lower than in previous year (with almost 3 years cycle). Changes in cycle duration are explained by 67% accounts receivable decrease in 2019 comparing with previous year (in 2018 other accounts receivable made 63% of total assets, while in 2019 this value decreased to 34% of total assets).

In the same time accounts receivable turnover shows that in general each hryvna of AR makes 0,8 turns during the year, with the increase of this indicator in 2019 on 75%. It means that company is collecting its money from customers faster from year to year. During analyzed years average collection period is decreasing, with 442 days or 1,2 years of turn in 2019.

However, accounts payable turnover increased in 2019 from 0,46 to 0,69 turns in a year, which decreased cycle on 34%. So, contractors will allow less time for company to pay out contracts signed, while company also shortened payment period time. In general, operational cycle become faster due to such changes.

Inventory turnover indicator shows that in general inventories made about 1,4 turns during the year for all analyzed period with positive dynamics. At the same time in 2018 the duration of one turn was 263 days, while in 2019 it decreased to 251 day. So turnover analysis demonstrates increase in inventories.

Despite the positive dynamics of all indicators, assets turnover highly depends on client's debts for company products provided. It also should be noticed that company has great amount of accounts payable for advances.

Results of company operational activity are reflected in profit indicators calculated. Analysis of "Mriia" profits are presented in tab. 2.8.

In 2019 the company earned 114 507 th. UAH of profit, subtracting costs spent on production. Comparing with the previous year, the amount of profit increased only on 6,13%, while total costs of goods sold grew faster then the total value of goods sold. Respectively profit on sales decreased in 2019.

T. P. A.	Value, th. UAH		Dynamics		
Indicator	2019	2018	Increase, th. UAH	Increase rate, %	
Gross Profit	114 507	107 896	6 611	6,13	
Profit on Sales	62 516	66 775	-4 259	-6,38	
Operational profit	93 599	63 021	30 578	48,52	
Profit before tax	107 914	60 517	47 397	78,32	
Profit before interest and tax	108 270	60 517	47 753	78,91	
EBITDA	123 716	68 601	55 115	80,34	
Net profit	107 914	60 517	47 397	78,32	

**Indicators of ALLC "Mriia" profit** 

If in 2018 it was 66 775 th. UAH, in 2019 it dropped on 6,4% to 62516 th. UAH. Such decrease of profit can be explained not only by increase of costs of goods sold, but also by increase of commercial costs on 49,7%. But in the same time the financial results of company's operational activity increased significantly in 2018, provoking the increase of company's net profit.

If in 2018 the company operational profit was 63 021 th. UAH, in 2019 it increased in a half up to 93 599 th. UAH. In previous years operational profit of company demonstrated negative dynamics due to weather conditions. In 2019 weather conditions were favorable, influencing company's financial results, leading to insignificant increase of total costs, particularly operational expenses.

In 2019 company had financial expenses of 356 th. UAH with had influence on small increase of EBIT comparing to EBT. In the result of all changes company net profit increased on 70% (from 60 517 th. UAH in 2018 to 107 914 th. UAH in 2019) mainly due to increase of operational profit. To find out roots for profits increase (internal or external), profitability indicators should be analyzed separately.

According to the analysis represented in tab 2.9, in 2018 the company generated almost 16 kopeks of profit from each hryvna of sales revenue, while in 2019 this value dropped on 25% to 12 kopeks of profit.

If in 2018 over each hryvna of total costs company generated 19 kopeks of profit, in 2019 the company generated only 13 kopeks, demonstrating 28% decrease. Such indicator has negative dynamics for several years.

Table 2.8

In 2019 product profitability decreased due to fact that company total costs including costs of goods sold, administrative and commercial costs grew faster than profit on sales. Product profitability is an important factor when analyzing company distribution strategy, so it should have positive dynamics to demonstrate company internal processes improvement.

### Table 2.9

	Val	ue, %	Dynamics		
Indicator	2019	2018	Increase, th. UAH	Increase rate, %	
Return on sales	12,03	15,94	-3,91	-24,55	
Product profitability	13,67	18,96	-5,29	-27,90	
Enterprise profitability	5,77	5,17	0,59	11,49	
Return on assets	8,96	4,55	4,41	97,00	
Return on equity	18,60	9,90	8,70	87,83	

**Indicators of ALLC "Mriia" profitability** 

Also, in 2019 per each hryvna involved in the production activity, company generated only 5,7 kopeks of profit, with small increase of 11% comparing with the previous year. As for assets involved in all types of activity, in 2019 company generated almost 9 kopeks of profit comparing with 4 kopeks generated in 2018.

Per each hryvna of money invested by the company owners in the enterprise's activity in 2017, 18 kopeks of profit were generated, with 87% increase comparing with previous year. Despite increase of indicator, it represents the situation when for the company owners the alternative ways of money investment can bring more profit.

Despite of significant increase of company net profit, profitability indicators demonstrate negative dynamics, which signals internal operational problems to be worked on.

Particularly almost all indicators are lowering due to total costs increase, so components of costs should be reviewed. Analysis of material costs efficiency is presented in tab. 2.10.

In 2019 the company spent 40 kopeks of material costs for production of 1 hryvna of commercial product, with the decrease of 20.8% comparing with the previous year. This shows that in 2018 each unit of product produced became less capital consuming.

If in 2018 company earned almost 25 kopeks per each UAH of material costs, in 2019 this value increased on 17%, with 29 kopeks earned per each hryvna of material costs.

# **Table 2.10**

	Value		Dynamics	
Indicators	2019	2018	Increase	Increase rate, %
Material costs productivity, UAH/UAH	2,545	2,016	0,529	26,22
Material costs intensity, UAH/UAH	0,393	0,496	-0,103	-20,78
Material costs profitability, %	29,69	25,28	0,044	17,46
Relative speed of increase in MC comparing with CP		0,8	80572495	

Material cost efficiency of ALLC "Mriia"

So it could be concluded than in 2019 the material costs of company were used more effectively than in 2018. Each unit of commercial product produced became less capital consuming, with the increased share of profit per each UAH of material costs.

In 2019 material costs increased slower than commercial product, which positively impacts company results. As material costs were used more effectively than in previous years, other components of costs should be analyzed.

Effectiveness of labor resources and labor costs were calculated. The result of analysis is presented in tab. 2.11.

As the number of employees grew smaller than company's commercial product, calculated labor productivity of workers increased, but not significantly (1,63%). If in 2018 one worker generated 10007.8 UAH of product, in 2019 such figure decreased, with 1024.27 UAH of CP generated by each worker. However, the amount of profit generated by one worker decreased. In 2018 it was 124.53 UAH per year, with the 3,77% decline comparing with the previous year.

In 2018 company hired 39 workers more than it was needed. In 2019 company hired just needed number of workers, with index of -0.24 of relative release of employees. So, decrease of the number of employees involved in company activity had positive effect on labor productivity.

However, labor costs profitability have negative dynamics, decreasing from 8,6 UAH/UAH in 2018 to 8,4 UAH/UAH in 2019 (it made 0,23 UAH/UAH or 2,66% decrease in dynamics).

#### **Table 2.11**

	Va	lue	D	ynamics	
Indicators	2018	2019	Increase	Increase rate, %	
Labor productivity (CP), UAH / worker	1007,8	1024,27	16,47	1,63	
Labor productivity (NO), UAH /worker	492,43	590,96	98,53	20,01	
Labor cost profitability, UAH / UAH	8,60	8,37	-0,23	-2,66	
Labor intensity, worker / UAH	0,00099	0,00098	0,00	-1,38	
Labor cost intensity, UAH / UAH	0,116	0,12	0,00	2,98	
Profitability of employee, UAH / person	129,41	124,53	-4,88	-3,77	
Profitability of labor costs, %	110	102	-0,08	-7,47	
Relative release of employees, workers			-0,24		
Relative economy of labor costs, UAH			-2137,84		
Relative speed of increase of number of employ commercial product	0,99272267				
Relative speed of increase of labor costs compa product	1,00499073				

Labor resources efficiency of ALLC "Mriia"

If in 2018 the labor costs involved in company's activity grew almost twice faster than the value of products produced by it, in 2019 this balance stabilized, and relative speed of increase is common for these two indicators. If in 2018 per each hryvna of labor costs it was generated almost 8,6 kopeks of commercial product, in 2019 the value decreased on 2,66%, with 8,37 of CP generated by the company. So, each hryvna of products produced involved 3% less of labor costs, comparing with the previous year. For its production activity, with the growth of LC proportional to CP growth, company could use 2137 UAH less, then it was used. Analysis of labor costs profitability shows that in general with the decrease of number of employee's labor costs decreased too, but with smaller dynamics, which lead to negative dynamics of indicators. However, we can conclude that labor resources usage become more effective in 2019 comparing with 2018.

In order to describe company financial and economic activity, vertical and horizontal analysis of balance sheet was conducted. In 2019 share of accounts receivable decreased significantly, while money categories increased. Indicators of turnover proved the decrease of production cycle; however commercial product has no increase while sales revenue increased. It shows not effective distribution activity, because inventories value is increasing from year to year. Profit on sales and return on sales prove this hypothesis as they have small or negative dynamics.

# 2.3. Analysis of ALLC "Mriia" distribution policy

Economic and financial analysis showed that company's sales revenue demonstrated positive dynamics, while commercial product is decreasing. In the same time profits on sale and return on sales have negative trends over several years mainly due to increase in total costs. It also should be noted that share of inventories in total structure of assets is increasing from year to year.

As distribution activity is money generating for company, it is necessary to evaluate efficiency and effectiveness of company distribution policy.

General characteristics of distribution activity of enterprise are presented in fig. 2.2.

Fig. 2.2 shows that sales revenue and const of goods sold have similar growth tendencies, with growth profit and marketing costs also showing equal trend. In the same time with increasing of cost of goods sold and marketing costs, gross profit demonstrated low increase. As sales revenue and costs of goods sold demonstrate same dynamics, we can conclude that such increase can be explained by the increase of production.



Fig. 2.2. Dynamics of ALLC "Mriia" distribution activities indicators

Dynamic analysis, which is represented in tab. 2.12 shows positive dynamics of all indicators considered. Sales revenue demonstrated positive dynamics for all period considered, with the increase on 25% in 2019 comparing with 2017 year. Company spends more on marketing activities from year to year, and so marketing costs in 2019 increased almost in a half comparing with 2017.

#### **Table 2.12**

	ľ	Value, th. UAH	Dynamics		
Indicator	dicator 2017 2018 2019		2019	Increase, th. UAH	Increase rate, %
Sales revenue	197642	418960	519874	100914	24,09
Costs of goods sold	128857	311064	405367	94303	30,32
Gross profit	68785	107896	114507	6611	6,13
Marketing costs	1113	19893	29785	9892	49,73

Dynamics of ALLC "Mriia" distribution activities indicators

However, increase rate should be analyzed additionally. It is observed that increase rate of gross profit is much lower than increase rate of all other indicators. In 2019 it was only 6,13% comparing with 2018 year.

The greatest increase rate is demonstrated by marketing costs - in 2019 they increased on 50% comparing with previous year, while increase rate of sales revenue was only 25%.

It should be noted that for financial results being increased, it is necessary for sales revenue to grow faster than cost of goods sold. Dynamics of distribution activity indicators show that distribution process is not effective enough as costs for distribution increase, while financial results being stable. One of distributional strategy components is channel management. Let us analyze distribution channels structure. Realization of agricultural products is performed under conditions of modern Ukrainian agricultural market and so channel structure is not diversified.

Distribution channel analysis was is presented in tab. 2.13.

#### **Table 2.13**

Channel of realization	2018		2019		Increase	
Channel of Teanzation	Value, cwt	Share, %	Value, cwt	Share, %	rate, %	
Processing enterprises	96322	9,46	40954	3,91	-57,48	
As payment for wages	7513	0,74	5902	0,56	-21,44	
Market	409051	40,18	682540	65,08	66,86	
Processed on own facilities	156097	15,33	139289	13,28	-10,77	
Used for feeding	305466	30,01	140980	13,44	-53,85	
Used for sowing	43144	4,24	31670	3,02	-26,59	
Wasted in storage	428	0,04	7383	0,70	1625,00	
Total	1018021	-	1048718	-	3,02	

Distribution channel strategy of ALLC "Mriia" in dynamics

Considering specifics of production process, it should be noted that not all products are selling but are also used for business purposes in form of animals feeding, sowing material and employees' compensation. However, as stockbreeding field is not strategic to company, share of product spending for feeding is low, with tendency to decrease. If in 2018 year 30% of products produced was used for feeding, in 2019 this share decreased to 13%, while product was redistributed and sold on market. It led to increase of share of market distribution channel in overall distribution channels structure. Among revenue generating channels, distribution to processing enterprises, tooling basis and realization on markets can be considered. Processing enterprises channel has low share in overall structure, with the decreasing tendency – from 9,5% in 2018 to 4% in 2019 year.

Typically for agricultural market, different product categories are realized by different channels. Realization through processing enterprises is performed for stockbreeding products – animals and milk, so it explains low share of this channel in overall structure.

In the plant growing field, sunflower seeds are realized on tolling basis as oil is specialization of Kernel. Realization on markets is mainly performed for cereals and legumes. As production of these products is company specialization, share of realization on markets is also the greatest.

However, company started to use technical products like silage and straw for not only own needs, but also selling it on markets. Distribution specific product category through one marketing channel makes it possible to use information of distribution costs by product type for distribution channel profitability evaluation.

Let us analyze distribution profitability of chosen products. As wheat is the most strategic crop produced and is distributed via one channel – market, it should be analyzed in detail. It will help to understand the performance of given channel.

Profitability analysis in dynamics is presented in tab. 2.14.

# **Table 2.14**

Indicator	2017	2018	2019	Increase rate, 2019/2018, %
Sales revenue, th. UAH	25917	100508	183448	82,52
Realization costs, th. UAH	23452	69680	140098	101,06
Profit from realization, th. UAH	2465	30828	43350	40,62
Profitability, %	9,51	30,67	23,63	-22,96

Profitability of wheat distribution by ALLC "Mriia" in dynamics

Comparing with 2017, the volumes of wheat increased significantly, which influenced on considerable sales revenue increase. Profitability of realization increased too because sales revenue grew faster than realization costs.

However, in 2019 realization costs demonstrated faster growth, which influenced profitability negatively. Analysis of profitability shows that realization is unstable from year to year. To compare with not strategic product realization, let us consider milk. It is only distributed by selling to processing enterprises.

Profitability analysis is presented in tab. 2.15.

**Table 2.15** 

Indicator	2017	2018	2019	Increase rate, 2019/2018, %
Sales revenue, th. UAH	43505	71948	31070	-56,82
Realization costs, th. UAH	27266	46860	25327	-45,95
Profit from realization, th. UAH	16239	27088	5743	-78,80
Profitability, %	37,33	37,65	18,48	-50,90

Profitability of milk distribution by ALLC "Mriia" in dynamics

During analyzed years production of milk decreased, which influenced decrease of all parameters. However, in 2018 increase of realization costs was slower, and so profitability comparatively high. In 2019 realization costs decreased slower than sales revenue, which provoked decrease of profitability indicator on 51%.

Therefore, we can observe that profitability of distribution through main revenue generating channels has negative dynamics. Among possible non-economic reasons for such decrease, the wrong distribution channels structure chosen can be distinguished.

It is also necessary to analyze the effectiveness of marketing costs. Analysis is presented in tab. 2.16.

Analysis shows that in 2018 marketing costs increased in almost in 18 times, while increase of marketing costs in 2019 was only 1,5. Such great increase of costs in 2018 can be explained by reorganization process, which took place in 2018, in the result of which company scope significantly increased.

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Indicator	2018	2019	Increase rate, %
Marketing costs growth rate, %	17,87	1,50	-91,62
Marketing costs intensity, %	0,037	0,056	47,93
Marketing costs productivity, %	26,61	17,99	-32,40
Increase rate of marketing costs, comparing to sales volumes, %	8,43	1,20	-85,69
Marketing costs profitability %	3,36	2,098	-37,47

Marketing costs effectiveness indicators of ALLC "Mriia"

If in 2018 per each hryvna of marketing costs it was generated almost 27 UAH of commercial product, in 2019 the value decreased significantly on 32,4%, with 18 UAH of gross product generated by the company.

Productivity of marketing costs decreased since gross product has almost no increase in 2019, while marketing costs increased almost in a half. It is also important to notice that in 2019 on one unit of gross product produced there was spent 5 kopeks of marketing costs, which is extremely low figure. However, indicator of marketing costs intensity has positive dynamics.

In 2019, marketing costs grew 20% faster than company sales revenue, influencing decrease of marketing costs profitability. As profit on sales also had negative dynamics, profitability of marketing costs was only 2 UAH of profit per each hryvna of marketing costs.

Therefore, analysis shows that marketing costs were not effective in 2019 as all indicators demonstrate negative dynamics. Profitability of channels calculated together with profitability of marketing costs lead to a conclusion of the necessity of distribution policy of company analysis. The main point to be analyzed is chose of marketing channel.

It is important to understand the place of distribution channel decision in overall distribution policy decision making process. For this reason, internal organization of processes should be analyzed. Internal organization of distribution process was analyzed using business process modeling technique. Process of distribution activity

performance can be described. For general process IDEF0 notation was used, process was modelled with Ramus software.

Main controls, mechanisms, inputs, and outputs were defined, with the general sequence of events constructed based on direct analysis of enterprise activity. Text description of analyzed process was developed to make model more understandable. Model will be used for defining the roots of existed problems and development of future recommendations for financial results improvement. It should be noted that when modeling, "down-up" approach was used meaning that "as is" model was built first, while "to be" model will be constructed for future recommendations suggestion [10, p. 195]

Results of existed process of distribution policy formation is presented on fig. 2.3 and explained below.



Fig. 2.3. Existed business process of ALLC "Mriia" distribution policy formulation

Based on order from "Mriia" management, Kernel Group marketing department conducts market analysis, guided by their marketing budget. Market conjuncture report is sent to management. Demand forecast is transferred to business process of distribution channel chose.

Business process of distribution channels chose, guided by "Mriia" managers specifications, and based on info of existed distribution network (global for Kernel), provides optimal distribution channels mix to business process of distribution infrastructure needs definition.

Report on production scope needed is transported to external business processes. Business process of distribution channels chose is performed by Kernel group.

Based on information of available resources and guided by sales plan, distribution infrastructure needs definition business process is performed by sales department of "Mriia". Distribution structure parameters are transported to distribution policy formulation business process.

Guided by sales plan and company strategy, business process of distribution policy formulation develop policy. Distribution policy formulation process is performed by sales department. Ready distribution policy is transferred to external business processes.

Special attention should be given to process of distribution channel choosing. It was analyzed using EPC notation. Results of analysis are presented in fig. 2.4.

When need for new distribution channel structure arises, Kernel group conducts the analysis of its global distribution network to find out new distribution channels mixes.

When the network is analyzed, Kernel marketing department choses alternative channels among already presented in its distribution network. When alternatives are chosen sales department of Mriia set goals for network and evaluation criteria for choosing. When goals are set and criteria chosen, optimal distribution channels mix is formed.

As we can see distribution policy formulation is performed with active participation of Kernel, as it has already developed marketing departments, higher marketing budgets and already established distribution network.

It allows company to conduct market analysis and decide on distribution infrastructure needs. "Mriia" sales department is only involved on later steps of policy formulated process, when marketing channels are already chosen, and market analysis conducted.

It should be noted that "Mriia" does not have marketing department, that is why sales department performs marketing activity. As it was studied before, such situation is common for Ukrainian agricultural companies. However it created the problem of low awareness of companies on existed market conditions, and so not effective decision-making activities involved. It can be assumed that given problem is a root problem for company and researcher should give special attention to develop recommendation of given problem elimination.

Analysis of existed organization of distribution policy formulation revealed several problems. Among them there are:

- optimal distribution channels mix is determined by Kernel group;

- choose of distribution channel mix is based only on global distribution network, no local view;

- sales plan is developed before distribution policy formulation;

distribution goals are not adjusted with strategic and marketing goals
(company strategy is applied only on final stage of policy development);

- "Mriia" marketing department is not involved.

After detailed economic and financial analysis was conducted, business process was applied to find out main problems in company activity it is necessary to structure them for possible solutions generation.

For such purposes, the problem map was conducted. The result of analysis is represented in fig 2.5.



Fig. 2.4. Process of distribution channel choosing in ALLC "Mriia"

During the analysis of the enterprise several issues were noted. The one which started given analysis was high costs on selling. More deep research of company operational activity shows that given problem has several derivatives and is generally caused by non-local approach of distribution policy generation. In addition, company has low understanding of general market functioning due to its complexity.



Fig. 2.5. Problem Map of ALLC «Mriia»

Ukrainian market of agricultural products is characterized by unbalanced supply and demand, low competition and prices. To be a good player on this market, it is necessary to constantly study its conjuncture.

As market analysis involves high costs, it is performed by Kernel group, while "Mriia" itself does not even have marketing specialists among its employees.

Company uses Kernel approach to distribution network formation, and so local analysis of distribution channel mixes is not performed. All logistic activities are done by Kernel group, and all system elements are adjusted to global structure. The absence of local view and the ability to structure it bring the problem of not measured effectiveness of distribution channels choice.

Analysis of main distributional channels company uses revealed that the vast majority of goods are selling on the tolling basis or to processing enterprises inside the country, while international selling takes less than 10% of sales. It is explained by increasing of selling costs due to international transportation. But it should be noted that international market is highly perspective and has more organized conjuncture, so increase of share of products to sell abroad could be good opportunity for company.

In the result of low awareness of both local and international market, and distribution network formation of global scale, the distribution channels are chosen not by the effectiveness of products realization through this channel, but rather by tradition and past studies decisions. It provokes creation of complex distribution network structure, which is adjusted to global logistics organization of group and so – increase of costs involved.

Therefore, the primary task for improvement is the decreasing of network complexity, which can be reached by more result-based choices of distribution channels mixes.

For better understanding of distribution process in company, it was studied additionally. It was studied that main revenue generating channels are markets and processing enterprises. Share of latest decrease from year to year as it is used for milk distribution, which is not strategic for company. Analysis of distribution channels showed that their profitability have negative tendency, while all marketing indicators also had small or negative results. It brought out the necessity of internal organization of distribution process analysis, during which several problems were defined. Among them there are high dependence on Kernel group, which conducts market analysis and tales final decisions in channel policy, absence of marketing department and small marketing budgets. As distribution is controlled from the outside, distribution plan isn't adjusted with local tactical plan. Additional problems reviled by problem map construction are high dependence of company on market and its not effective infrastructure, together with low company understanding of market, which lead to ineffective decision making. Future analysis will be done to develop steps for distribution activity improvement. They will include analysis of problem map findings, development and description of "to be" business process, application of mathematical tools for problem solving and economic effect calculation of suggested recommendations.

# 3. ALLC "MRIIA" DISTRIBUTION POLICY IMPROVEMENT

# **3.1. Recommendations for distribution policy of the enterprise improvement**

Based on the complex analysis of company internal and external environment, together with general economic analysis conducted, problem map was developed. Its analysis revealed that one of the reasons of high selling costs is not local distribution channel choosing, with main decisions made by global distribution network creators. Company has no opportunity to conduct market research and chose between alternative variants of distributional channels mixes.

Considering received conclusions, several possible recommendations for problem solving could be developed. Generally, there are two alternatives suggested – creation of marketing department inside the company or involving marketing specialist from global marketing team. The tasks for both will be market analysis conduction considering local peculiarities of market, creation of possible distribution channels mixes, analyzing limitations of this mixes and local distribution policy suggestion.

Another problem faced by the enterprise is no independent view on market opportunities and new ways of product distribution. One of possible ways of this problem solving is to invite business analyst for expert analysis conduction.

When considering the complexity of model, number of components and interrelation between them is valued. Existed distribution network is complex because informational flow inside it is stochastic, while general profitability low. The decisions are made not in the context of local situation and alternative distribution channels mix couldn't be considered optimal.

Brief description of problems defined by problem map creation together with proposed measures are described in tab. 3.1. To make distribution channels chose more rational several steps are suggested, among them there are involvement of marketing department of "Mriia" for decision-making process. Another step suggested is to conduct coordination process between proposed distribution tasks and overall company

strategy, marketing strategy. The main goal of given measures is to make company distribution activities more coordinated with existed market conditions.

#### Table 3.1

Problem	Solution	Results
Not effective choose of distribution channels	Alternative 1. Own marketing department creation, which will choose alternatives based on general market research Alternative 2. Hiring marketing specialist	Distribution network policy will be based on local analysis of market, so distribution channels mix chosen will be
channels	to general team	optimal
No knowledge about new channels	Hiring business analysts or conduct expert analysis to analyze market conjuncture	Increase of distribution channels chose effectiveness
Complex distribution network	Adjust not downward (local network is based on Kernel general network), but upward (Kernel network is built over local one)	Complexity decrease is supposed to reduce selling expenses

#### **Recommendations of the problem solution**

When analyzing distribution network, local aspects should also be considered. Final choice on distribution channels mix it is proposed to be made not by global company, but by "Mriia" itself.

Before recommendations implementation it is necessary to adjust business processes involved in company distribution policy formation. Based on existed business process analysis, new model was created and described in accordance with recommendations suggested. Results of modeling is presented in fig. 3.1.

Based on order from "Mriia" management, Kernel Group marketing department conducts market analysis, guided by their marketing budget. Market conjuncture report is sent to management. Demand forecast is transferred to business process of distribution channel chose.

Business process of distribution channels chose, guided by marketing plan and company strategy, and based on info of existed global and existed company distribution networks, provides optimal distribution channels mix to business process of distribution infrastructure needs definition. Report on production scope needed is transported to external business processes. Business process of distribution channels chose is performed by marketing and sales department. Based on information of available resources and guided by sales plan, distribution infrastructure needs definition business process is performed by sales department of "Mriia". Distribution structure parameters are transported to distribution policy formulation business process.





Guided by sales plan and company strategy, business process of distribution policy formulation develop policy. Distribution policy formulation process is performed by sales department. Ready distribution policy is transferred to external business processes.

To focus on distribution channel mix choosing, this process was viewed in detail with the help of EPC notation. Process models are presented in fig. 3.2 and fig 3.3. When the need for distribution channel structure change arises, coordination with marketing strategy and overall company strategy is performed. If suggested targets are not coordinating with strategies, they should be reconsidered. When distribution tasks are coordinated, the analysis of existed distribution networks, both global and local, are conducted. Analysis of global network is performed by Kernel group, while local network analysis is done by company sales department.



# Fig. 3.2. Diagram of the improved activities after "Need for new distribution channel structure" event in the EPC standard

When both networks are analyzed, alternatives among all existed on market are chosen. Together with sales department, business analyst is involved to this process.

When alternatives are chosen sales department of Mriia set goals for network and evaluation criteria for choosing. When goals are set and criteria chosen, optimal distribution channels mix is formed.

The main difference between existed model and recommended one is "Mria" involvement on each step of decision-making process, active coordination of decisions with company local strategy and marketing strategy consideration. When choosing alternative distribution channels mixes it is suggested to analyze not only global company network, but also existed company network, making market analysis more accurate. It is suggested to leave steps after alternative distribution channels choosing as they are organized in existed structure because of good organization of these processes.



# Fig. 3.3. Diagram of the improved activities for "Choosing alternatives among existed" action in the EPC standard

When analyzing the general business process modeled with IDEF0 notation, it should be noted that main changes proposed are connected only with one "Distribution
channel chose" sub-process. In existed process company receives external specifications as control. It is suggested to coordinate process with company strategies and chose marketing plan and overall strategy as controls for "Distribution channel choose" process. If in existed process Kernel group is a performer of given process, in the new structure it is recommended to involve "Mriia" sales and marketing department. It is costly for company to create marketing department as it has no reserve funds for it. However, functions of marketing department can be partly performed by company sales department, involving marketing specialists from Kernel group. In existed process only info on existed network is analyzed. It is proposed to study local network as well. Generalized changes in business process are presented in tab. 3.2.

#### **Table 3.2**

#### Comparison of existed and recommended business processes "Distribution

Existing process	Improved process	Changes
Market analysis	Market analysis	No
Distribution channels chose	Distribution channels chose	Process is performed by sales and marketing department of company, not by Kernel group. It is based not only on global network analysis, but also on local one. As business process is performed by company itself, it is guided not by management specifications, but by strategies – overall and marketing. The alternatives are chosen not from existed global network, but from all market, business analyst is involved.
Distribution infrastructure needs definition	Distribution infrastructure needs definition	No
Distribution policy formulation	Distribution policy formulation	No

policy creation"

Distribution infrastructure needs development and distribution policy formulation processes are performed in a proper way for analyzed problems, and so improvement measures were not suggested by given research. Before business process changes implementation and distribution channels mix changing, it is necessary to conduct internal expert analysis on the existed distributional channels mix effectiveness, set KPIs for recommendations implementations monitoring. The effect of such recommendation implementation should be measured by improvements/no changes in distribution process, and its effects on overall company costs. Among the possible indicators there are increase of sales volume, profit on product realization per employee of sales department; price-quality ratio change, share of undistributed goods in the overall volume of finished goods, share of exported goods etc.

As the result of recommendations implementation, it is planned to reach decrease of selling costs and decrease of undistributed goods share in the overall volume of finished goods.

Set of KPIs should be different for business process and for distribution channel effectiveness measurement. Generalized algorithm of KPI defining for business process is presented in the tab. 3.3.

#### Table 3.3

СТQ	СТВ
<ol> <li>Process – Distribution</li> <li>Outputs - Distribution policy, Market conjuncture report</li> <li>Clients – sales department, management</li> <li>Requirements of clients</li> <li>Costs decrease</li> <li>Sales increase</li> <li>KPI         <ul> <li>increase of sales volume,</li> <li>share of undistributed goods in the overall volume of goods produced</li> <li>market share change</li> <li>coefficient of sales on highest market price</li> </ul> </li> </ol>	<ul> <li>profit on product realization per employee of sales department,</li> <li>contract profitability</li> <li>level of marketing managers qualification</li> </ul>

A list of Key Performance Indicators for the business process

KPIs for business process were divided on two categories – depending on changes contribution to quality and strategic – contribution to business [9]. When

measuring contribution to quality, main requirements of clients should be defined. In order to do this, process outputs and process clients were distinguished. As changes deal with distribution channel mix, the main process involved is distribution, with such outputs like distribution policy and market conjecture report. Outputs were defined during business process modeling. Respectively the main clients of process are company sales department (as marketing department is not presented) and company management. According to specifics of their activity, the main requirement of sales department is to decrease costs involved in distribution activity and the main goal of management is to increase profits, and so sales volumes. Taking into account main requirement set by process clients, KPIs for process were defined.

When considering contribution to busines, it should be noted that distribution directly influences company profits and its strategic position on market, and so improved business process should demonstrate changes in terms of profits and competitiveness of company.

However, improvement of business process for distribution channel choosing is proposed to be implemented in long term as it involves strategic planning and other processes restructuring. Recommendations involve creation of department of minimum five people, market analysis activities and long implementation process. As company financial results analysis showed that retained earnings are not so high, with no other sources of financing, it will be difficult to implement these recommendations without previous planning of financial resources. One of faster ways to increase profit on sales and improve channel profitability is to change distribution channel of strategic product on more profitable one using analytical methods. As the greatest volumes of sales belong to wheat, it is proposed to reconsider "market" distribution channel and find out more profitable one. In order to implement given recommendation several steps should be conducted. First step is to define optimal distribution channel with minimum resources involved. Based on previous analysis of multiple-criteria decision making models it was decided to apply AHP for making decision concerning new distribution channel. After distribution channel is chosen, set of activities for channel switching will be defined taking into account specifics of channel.

Another factor to be noted is coordination of company strategy with overall distribution strategy. Re-analysing model developed by B. Rozumei, which was described in the first chapter of given work, it should be noted that improvement of distribution channel structure will be coordinated with overall company strategy which is profit maximization. All recommendations suggested will finally lead to profits increase. All other targets such as market share increase, sustainability, sales effectiveness increase and others are not considered in terms of given work.

So based on economic, technical and financial analysis conducted there were suggested to make decision-making process for distribution channel chose more local and so to restructure business process. Main points of restructuring deal with company "Mriia" involvement in distribution strategy coordination with overall company strategy, analysis of local conjuncture together with global one, making of final decision by "Mriia" management. However implementation of given recommendation is a complex process, which involves restructuring of several business processes, strategic planning and time. That is why it was suggested to diminish existed problems – low distribution channel profitability, decrease of financial indicators connected with sales – by defining more profitable distribution channel using mathematical tools and particularly analytical hierarchy process.

#### **3.2.** Distribution channel chose using analytical hierarchy process model

As it was stated before, two alternative recommendations are suggested – the one involves creation of marketing department, and other – engage specialist to define new distribution channels mix structure. As both alternatives require high costs, and company does not have budget reserved for that, the simplified recommendation was designed. It was suggested to define new structure by the means of analytical hierarchy process.

The first step was to define problem, alternatives, and procedure. Analysis of company financial results revealed the necessity to review company selling strategy and main points of products realization. The problem is to find out the most appropriate sales channels among alternatives. Based on analysis of Ukrainian market conjuncture the next alternatives were defined – sale to processing enterprises, realization on a tolling basis, realization on markets, realization with intermediaries. Analysis of company distribution activity showed that company uses all listed distribution channels, however only two of them are main – processing enterprises and on market. Company realized products of stockbreeding field through processing enterprises, while its main product wheat is distributed on market.

The procedure chosen is one-expert analytical hierarchy model, with the next criteria for decision-making:

- profitability level  $(x_1)$ ;
- procedure transparency  $(x_2)$ ;
- stability of sales  $(x_3)$ ;
- availability of infrastructure for storage and transportation  $(x_4)$ ;
- demand  $(x_5)$ ;
- information about market available  $(x_6)$ .

Set of criteria was defined based on theoretical analysis conducted. The expert chosen is regional manager of the company. Pairwise comparison will be conducted to decide among alternatives. The scale is from 1 to 9. Before model is constructed, we can assume that  $x_2$  and  $x_6$  criteria will have the lowest importance. But respondents' answers will help researcher to understand real company attitude towards listed channels by these criteria. It will help to analyze market in future. The procedure of analysis conducted is described in the first chapter of given research.

After the calculations and consistency check the hierarchy should be constructed to find the best variant among alternatives. Based on the hierarchy, the matrix was constructed, and final choice made. Before choosing between alternatives weight of each criteria should be studied. For this reason, pairwise comparison matrix of alternatives was created and is shown in tab. 3.4.

Matrix shows the comparison of all criteria conducted with the goal to define the most important for company. Distribution channels alternatives measured highly by given alternatives, will have higher importance in the final result. According to analysis conducted, the most important criteria for distribution choosing based on regional

manager opinion is stability of sales through channel and channel profitability. Stability of sales is more important for company than profitability as agriculture involves longterm contracts creation and that is why channel should be stable enough to handle several years agreement.

#### Table 3.4

Criteria	Profitability	Transparency	Stability of sales	Infrastructure	Demand	Information available	Importance
Profitability	1	3	1/5	6	2	5	0,23
Transparency	1/3	1	1/3	5	1/3	1/2	0,09
Stability of sales	5	3	1	7	2	3	0,37
Infrastructure	1/6	1/5	1/7	1	1/5	1/3	0,03
Demand	1/2	3	1/2	5	1	3	0,19
Information available	1/3	2	1/3	3	1/5	1	0,09
Total	7 1/3	12 1/5	2 1/2	27	5 3/4	12 5/6	1,00

## Criteria evaluation for distribution channel choosing performed by pairwise comparison

Infrastructure criteria has importance of 3% as company has well established infrastructure and own storage elevators, transportation means. When reviewing Ukrainian market conjuncture, it was suggested that when choosing distribution channel agricultural produces do not consider channel transparency and information about market available. This notion was proved by given analysis, as both factors have only 9% importance. According to the theory by Saati, CR should not be greater than 20%. Calculations shows that consistency of given matrix is 13%, which proves that it can be used for future analysis.

Next step of analysis is applying pairwise comparison for alternatives by each of listed criteria. Tab. 3.4. represents comparison of alternatives (distribution channels)

on the firs criteria (profitability level). Matrix has 7% consistency ratio and so can be used for future analysis.

When comparing alternatives, the most attractive one in terms of profitability level is distribution on tolling basis as it has 55% importance. The second place is given to distribution on markets, having 25% of importance. Other channels are not significant in analysis by profitability level as their importance is less than 15%.

#### Table 3.5

Alternative	Processing enterprises	Tolling basis	On markets	With intermediaries	Importance
Processing enterprises	1	1/5	1/3	4	0,14
Tolling basis	5	1	2	7	0,55
On markets	3	1/2	1	2	0,25
With intermediaries	1/4	1/7	1/2	1	0,07

## Comparison of alternatives (distribution channels) on the first criteria (profitability level)

Such distribution of result is influenced by undeveloped and complex agricultural market, as market channels are not profitable enough to satisfy company requirements. Distribution through intermediaries takes only 7% of importance, while its more profitable for company not to interact with external structures, but to exchange products produces inside Kernel Group system. Regional manager prefers distribution on tolling basis 7 times more than selling through intermediaries, 5 times more than interacting with processing enterprises and 2 times more than selling on market in terms of profitability generated. It should be noted that previous analysis of agricultural market in Ukraine showed that intermediaries create price disparity on market that is why low importance of this alternatives in terms of profitability is fair.

Comparison of distribution channel by their transparency was conducted and described in tab. 3.6. Consistency of matrix is 7%, so it can be used for future analysis.

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#### Comparison of alternatives (distribution channels) on the

Alternative	Processing enterprises	Tolling basis	On markets	With intermediaries	Importance
Processing enterprises	1	1/3	4	2	0,25
Tolling basis	3	1	5	3	0,50
On markets	1/4	1/5	1	1/5	0,06
With intermediaries	1/2	1/3	5	1	0,19
Total	4,75	1,867	15	6,2	1,00

#### second criteria (transparency)

According to regional manager opinion, the most transparent channel of distribution is tooling basis, it takes 50% of importance. Distribution though selling to processing enterprises takes second place as involves direct communication between producing and processing company. Distribution through intermediaries and on markets are less transparent. These results prove previous analysis of market because globally Ukrainian agricultural companies do not prefer to sell through intermediaries and markets as they have low understanding of these channels functioning. In addition to it these channels have great complexity and that is why less transparent. However as transparency criterion has low significance for company management, the results of analysis will have small impact on final result.

Distribution channels then were analyzed by third criteria – stability of sales. The results of analysis are presented in tab. 3.7.

Consistency ratio of given matrix is 3%, so it can be used for future analysis. As processing enterprises prefer to conduct long-term contracts, this channel of distribution have lover importance ratio comparing with other criteria's analysis. However still the most preferable alternative is to distribute on tooling basis. As process deals with internal company structure, it is more stable and less risky. Market of agricultural products is stochastic, in addition to it company do not understanding it.

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#### Comparison of alternatives (distribution channels) on the

Alternative	Processing enterprises	Tolling basis	On markets	With intermediaries	Importance
Processing enterprises	1	1/2	3	5	0,31
Tolling basis	2	1	3	7	0,48
On markets	1/3	1/3	1	3	0,14
With intermediaries	1/5	1/7	1/3	1	0,06
Total	3,5333	1,976	7,33	16	1,00

### third criteria (stability of sales)

That is why intermediaries and market alternatives have low importance by given criteria. Company management prefer distribution on tolling basis 7 times more than through intermediaries, 3 times more than on markets and 2 times more than though processing enterprises. As stability of sales criteria is the most valuable for company, results of given matrix will have the highest impact on result. Distribution channels were compared by their demand. This matrix has consistency ratio of 8% and is presented in tab 3.8.

#### Table 3.8

Comparison of alternatives (distribution channels) on the fourth criteria (demand)

Alternative	Processing enterprises	Tolling basis	On markets	With intermediaries	Importance
Processing enterprises	1	2	5	1/3	0,25
Tolling basis	1/2	1	5	1/4	0,17
On markets	1/5	1/5	1	1/5	0,06
With intermediaries	3	4	5	1	0,52
Total	4,7	7,2	16	1,783	1,00

Analysis shows that despite of highest levels of tolling basis distribution importance, demand on this channel is low and so it has only 17%. In the same time the highest demand is demonstrated by intermediaries channel and so importance of this alternative is 52%. We can see that demand on markets and processing enterprises is low. Considering results of given analysis, we can assume that company should use

combination of channels for products distribution as demand on this alternative is low and company will end up with increase of undistributed goods. Comparison of alternatives on information available was conducted. The results are presented in tab. 3.9.

#### **Table 3.9**

#### Processing Tolling With On Alternative Importance enterprises basis markets intermediaries 3 5 1/50,22 **Processing enterprises** 1 **Tolling** basis 1/31 4 1/6 0,11 1/5 0,05 On markets 1/41 1/7With intermediaries 5 6 7 1 0,62 Total 6,5333 10,25 17 1,51 1,00

## Comparison of alternatives (distribution channels) on the fifth criteria (information available)

Consistency ratio of given matrix is 12% so it can be used for future analysis. According to result of analysis the greatest importance ratio belongs to distribution through intermediaries (62%), as company has low understanding of given channel internal structure. Company prefers to have info about intermediaries' channel 7 times more than about market, 6 times more than on tolling basis and 5 times more than on processing enterprises.

Respectively as distribution on tolling basis deal with internal organization of company, information of channel is enough for company.

Basing on the results of pairwise comparison the matrix for decision-making was built. It gathers importance of all criterions for each alternative. Resulting sum of all importance value is final point of an alternative.

Final matrix is presented in tab. 3.10.

Considering the analysis conducted, it can be concluded that highest sum of importance belongs to tolling based distribution, and so realization on tolling basis can be considered as the most appropriate channel.

Table .	3.10
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	<i>x</i> <sub>1</sub>	<i>x</i> <sub>2</sub>	<i>x</i> <sub>3</sub>	<i>x</i> <sub>4</sub>	<i>x</i> <sub>5</sub>	<i>x</i> <sub>6</sub>	Sum
Processing enterprises	0,031	0,021	0,116	0,010	0,048	0,019	0,24642
Tolling basis	0,126	0,043	0,179	0,014	0,031	0,010	0,40435
On markets	0,057	0,005	0,053	0,002	0,010	0,004	0,13283
With intermediaries	0,016	0,016	0,022	0,007	0,099	0,056	0,21639

Martix of importance of each criterion for each alternative

However, demand analysis showed that it should be mixed with other channels to reach decrease of undistributed products share. That is why selling to processing enterprises and realization via intermediaries can also be considered as good variants. Realization on markets should not be among primary choices when selling company products, but still it has some benefits.

Final hierarchy of decision making is described in fig. 3.4.

Therefore, the analysis shows that it will be more profitable for company to change wheat distribution channel from "market" to "on tolling basis". It should be noted that tolling basis distribution has some specifics in chosen case. Usually tolling basis distribution involves passing of raw materials to be processed by another company and then finish product returned.

Kernel is not processing wheat but trades it, and so distribution on tolling basis should be understood as passing distribution services provided to Kernel instead of doing it using own infrastructure. For global company, such shift involves redistribution of transportation means, new logistic schemes created, and new contacts conducted.

However, for local company it significantly decreases distribution costs and share of undistributed goods. Effect of given changes can be clearly seen in profitability of old and new channel comparison, it will also have effect in final financial statement.



Fig. 3.4. Analytical hierarchy of appropriate distribution channel selection in ALLC "Mriia"

In the result of expert analysis, conduction with regional manager of a company involves as an expert, some conclusions can be formulated. The most important criteria for distribution channel choosing are stability of sales and profitability. In the same time channel, transparency and information about market are less valued despite the fact that they are important for agricultural market as a whole. When measuring channels in terms of sales stability, distribution on tolling basis and to processing enterprises are preferable for company, while existed channel "on markets" has comparably lower importance. It should be noted that distribution on tolling basis has the greatest importance by all criteria except demand. So when making decision concerning channel chosen, company should apply multichannel distribution structure to cover lack of demand in one channel by demand in other.

In order to switch from channel "market" to "tolling basis" it is necessary to sign contracts with service providers, redistribute or sell transport means used for own distribution, set specialist to control distribution process by new channel and redistribute or fire employees involves in this process. Given recommendation will not involve significant investments, but will decrease costs as all transportation, storage, marketplace payments will be diminished, while human resources will be free for other processes or fired. It is the choice of company management how to use resources freed.

#### **3.3.** Economic effect of proposed recommendations measuring

As it was stated before, the main purpose of given recommendation is profit maximization, which is coordinated with company overall strategy. Therefore, after recommendations implementation it is expected to observe profit on sales increase and marketing costs decrease.

In order to calculate effectiveness of suggested measures it is proposed to start with comparison of existed channel profitability with profitability of the new one. Distribution of wheat will be analyzed in terms of two distribution channels – market and tolling basis. Let us assume that in the year of measures introduction, the volume of products produced will be equal to this indicator in analyzed year. It should be noted that according to company financial statements, beginning balance of wheat in 2019 was 155 340 cwt, while realized production made 417 757 cwt of wheat (including non-profitable realization such as on seeds and on payment for wages). Respectively the ending balance of wheat was 80 960 cwt, meaning that 21% of products produced were undistributed and remained stocked. By recommendation suggested and including the expert measuring, it is planned that these 21% can be fully distributed with the new channel implementation. That is why in the result of changes sales volume will increase, while costs of products produced will be the same.

In 2019 price per one cwt of wheat was 0,4733 th. UAH, meaning that company sold wheat by 4 733 UAH per ton. Such price is close to average price for wheat on market in Kharkiv region [7]. However, it is assumed that realization price will decrease with the change of distribution channel. As Kernel uses wholesale distribution channels, wheat will be selling not by market but by wholesale price. According to expert opinion, it will influence price to decrease on 5%, with 1 ton of wheat is sold by

4 496 UAH. In the result of price decrease and sales volume increase, sales revenue gathered by distribution by new channel will be increased by 15% up to 210 873 th. UAH.

Effect of recommendations introduction on channel profitability is described in tab. 3.11. All initial data are based on company financial statement or collected by author in the result of direct analysis. Sales revenue after recommendations implementation was calculated by multiplying expected sales volume by new expected price.

#### **Table 3.11**

Indicator	Before changes (2019)	Change, %	Increase/ decrease rate	After changes
Sales volume, cwt	387610	+21%	81398,1	469008,10
Sales revenue, th. UAH	183448	+15%	27425,48	210873,48
Price, th. UAH	0,4733	-5%	0,023663992	0,4496
Cost of products produced, th. UAH	140098	-	-	140098,00
Profit from realization, th. UAH	43350	-	-	70775,48
Profitability, %	23,63%	-	_	33,56%

#### Economic effect of recommendation on channel profitability

It should be noted that in its financial statement company calculates profit from realization by comparing channel sales revenue with selected product production costs. However, it should be noted that realization costs will also decrease in the result of changes recommended, effect of which will be considered in future calculations. But in the result of analysis done we can observe that profit from realization will increase form 43 350 th. UAH to 70 775 th. UAH, which makes 63% increase. Respectively profitability of channel will also increase. If in 2019 channel profitability was 23,63%, after recommendations implementation it will be 33,56%.

It is important to note that with the increase of sales volume, cost of products sold will increase proportionally. If in 2019 cost of wheat sold was 138 747 th. UAH, after the changes introduced it will increase on 21% up to 167 896 th. UAH. In the same time based on expert research realization costs will decrease significantly, on 78% due to diminishing of distribution tasks and passing them to another company.

Respectively instead on 15 210 th. UAH of costs for wheat realization company will spend only 3 346 th. UAH. All these changes were considered when formulating the new income statement for company.

When calculating changes in final income statement, increase of cost of goods sold and decrease in realization costs were calculated under the influence of specific distribution channel profitability increase. Changes in other indicators connected with the introduction of recommendations suggested are insignificant and could be neglected. As possible small investments we can consider time of manager spent on planning and fee for business specialist involved for distribution channel change control. Results of economic effect of changes on company financial results are presented in tab. 3.12.

#### **Table 3.12**

Indicator	Before changes, th. UAH	Changes introduced, th. UAH	After changes, th. UAH	Increase rate, %
Sales revenue	519847	+27425,476	547272,476	5,28%
Costs of goods sold	405367	+29138,97	434505,97	7,19%
Gross profit	114507	-	112766,506	-1,52%
Selling expenses	29785	-11863,8	17921,2	-39,83%
General administrative expenses	22179	-	22179	-
Other operating income	83266	-	83266	-
Other operating expense	52210	-	52210	-
Other incomes	22247	-	22247	-
Other expenses	7579	-	7579	-
Profit before income taxes	107914	-	118390,306	9,71%
Net profit	107914	-	118390,306	9,71%

Effect of changes introduced on company financial results

In the result of changes introduction company overall sales revenue will increase on 5%, while costs of goods sold will demonstrate faster growth of 7,19%. It will influence the negative dynamics of company gross profit. However, as wheat is the key product produced by company, decrease of realization costs will have significant impact on general financial result of company. After changes introduction company overall selling expenses will decrease on 40%. All the listed change will lead to company net profit increase from 107 914 th. UAH to 118 390 th. UAH or almost 10% increase in company net profit. It should be noted that for given changes implementation there is no need for company to increase production scopes as the main idea of recommendation is to sell undistributed volumes of products.

Effectiveness of suggested measures can also be calculated by evaluating the change of marketing costs profitability. It should be noted that recommendations are planned to be implemented in the next periods, that is why 2019 was considered as base year in calculations. As for specific indicators calculation profit on sales is used, changes in this indicator should be described. In 2019 company profit on sales was 62 516 th. UAH, however after changes implementation company sales revenue increased, while total costs decreased, which influenced the increase of profit on sales on 16,2% to 72 666,5 th. UAH. Increase of profit on sales signals that effectiveness of company distribution activities is also increased. The results of new marketing costs effectiveness calculation are presented in tab. 3.13.

#### **Table 3.13**

Indicator	2019	After changes	Increase rate
Marketing costs intensity	0,06	0,03	-39,83%
Marketing costs productivity	17,99	29,89	66,20%
Relative speed of increase of marketing costs comparing to sales revenue	1,21	0,69	-42,84%
Marketing costs profitability	2,10	4,05	80,86%

Effectiveness of marketing costs after recommendations implementation

Comparing with 2019, after the changes implementation marketing costs productivity is planned to be decreased on almost 40%. If in 2019 per each hryvna of marketing costs it was generated only 18 UAH of commercial product, after the changes the value increased to almost 30 UAH of gross product generated by the company. It is also important to notice that if in 2019 on one unit of gross product produced there was spent 5 kopeks of marketing costs, after the changes this value even decrease to 3 kopeks. If in 2019, marketing costs grew 20% faster than company sales revenue, influencing decrease of marketing costs profitability, after the changes

proposed sales revenue will be showing faster increase. Respectively, it is assumed that changes will allow company to increase profitability of marketing costs on 80,86%, from 2 UAH 2 of profit generated per each hryvna of marketing costs to 4 UAH.

For graphical representation of changes introduced, fig. 3.5 was constructed. It shows changes in dynamics of main indicators of company distribution activities after proposed recommendations implementation. Results of recommendations should be analyzed in the overall dynamics of main indicators in order to predict possible trends in future.



# Fig. 3.5. Main financial indicators of company distribution activity after recommendations implementation

It can be observed that dynamics of indicator will change, but not significantly. It demonstrates that changes introduced will not ruin tendencies of company development but are oriented on long-term development processes. While gross product change will be small, marketing costs will fall to level of 2018 year, when company had lower scope and less territories in usage. In the same even though costs of goods sold will grow in comparatively same speed with sales revenue, gap between these indicators is increasing showing that company's profits are expected to grow.

Final recommendation suggested will solve the main problem defined by problem map – hight selling costs. However other problems like dependence on Kernel distribution network, no marketing department, not local view on distribution channels chose won't be solved. In order to improve situation by these directions it is recommended to adjust company business process in a way suggested and introduce long-term planning of company distribution activity.

So after calculation of economic effect conducted it can be concluded that switch from "market" distribution channel to "tolling basis" by redistribution of resources used will be profitable for company as it will allow to sell share of undistributed goods now stocked. In addition to it company marketing costs for main product distribution will decrease significantly due to transition of main distribution activities to other company. Investments include payment to business analyst and manager time cost, but they are low in given scope of improvements. Economically recommendations will lead to increase of distribution channel profitability, effectiveness of marketing costs and overall company profits increase. Costs of goods sold will increase proportionally to sales revenue increase, however production costs will stay the same. In the result of proposed measures implemented distribution strategy will be coordinated with overall company strategy of profit maximization, with the main accent made on marketing costs decrease. Future steps towards distribution policy improvement are change of business process suggested and distribution channel decision-making performed based on market analysis done locally, with the help of Kernel marketing specialists.

#### CONCLUSION

In the result of analysis conducted all tasks set were performed. Theoretical background of distribution process was analyzed, with the new "distribution" definition formulated. It was studied that distribution process is highly connected with basic economic utilities and is based on close interrelation of producer and customer. Company distribution policy is coordinated with general strategy, and improvement procedures are conducted in the accordance with company main goals. One of key distribution policy decisions deal with distribution channel structure chose as it influences financial results through connection with sales volumes and cost structure. Distribution channel choosing process is influenced by wide scope of internal and external factors, among which there are availability of marketing department, storage facilities and transportation means, size of average order and availability of information about market, market conjuncture, product specifics, legal regulations, social and cultural aspects.

As base of research is agricultural company, conjuncture of agricultural market in Ukraine was studied, with its influence on distribution policy defined. Analysis of market has shown that it has huge influence on companies operating in it, particularly by its complexity, not developed instruments of wholesale market, auctions, cooperatives, weak government support. Low understanding of market functioning, price disparity together with absence of marketing departments in most of agricultural production enterprises make distribution process less effective as prices for products are lowered and distribution is mainly conducted through monopolistic intermediaries structures.

Possible ways of distribution policy improvement, and particularly decisionmaking of distribution channel structure were analyzed under the influence of strong market dependence. It was suggested to apply tree-steps model for distribution channel structure studying and improvement. As company strategy is profit maximization, distribution channel structure change was chosen as possible improvement step. Methodological approaches for this task performance were analyzed. As first step involves existed structure analysis, it was suggested to use IDEF0 notation for model of general busines process construction and EPC notation for more specific process modelling. Analysis showed that strategic decisions in distribution channels chose can be performed by means of multiple-criteria decision making models, among which AHP was chosen as the most appropriate for given case. Overall economic and financial state of enterprise was chosen to evaluate by technical, economic, and financial analysis of company activity with specific indicators analyzed and chosen.

Before analysis of company conducted, main information about it was collected. ALLC "Mriia" is small agricultural company, which is structurally belongs to Kernel group and performs first stages of product processing – production and storage. Main company activity is plant growing, with specialization on grain growing, however company has small share of stockbreeding activities. SWOT analysis conducted reviled that it has potential to be competitive as it has strong infrastructure, but in the same time external threats have the great influence on company performance. Financial and economic analysis showed that in general company performance is successful however profit indicators demonstrate negative dynamics. Share of accounts receivables and inventories are big, company has great share of undistributed goods. However long production cycle decreases form year to year. Sales revenue increase is explained by stocks selling, as commercial product had no dynamics. Economic indicators connected with distribution activity showed that it can be improved.

In order to determine roots of problems and ways for their improvement analysis of company distribution activity was conducted. It was studied that main distribution channels are market and processing enterprises, while each product is distributed by one channel. Profitability of channels show negative dynamics, while marketing costs increase. In addition to it business process analysis reviled that all decision-making on distribution channel chose are performed from the outside.

That is why improved business process was suggested. By means of AHP with company regional manager as an expert new distribution channel for main company product was chosen. Switch of distribution channel will increase overall profits and distribution channel profitability.

#### LIST OF REFERENCES

1. Бадалов Х. М. Оптимізація структури витрат виробництва як чинник зниження собівартості продукції рослинництва / Х. М. Бадалов // Економічна наука. – 2015. – Випуск 10. – С. 90–94.

 Брух О. О. Оптимізація збутової діяльності сільськогосподарських підприємств / О. О. Брух // Фінансова система України. Збірник наукових праць.
 Випуск 16. – Острог: Видавництво Національного університету "Острозька академія", 2011. – С. 113–119.

3. Грецька Н. А. Регулювання розвитку оптових ринків сільськогосподарської продукції: дисертація / Н. А. Грецька. – Київ: Держ. установа Ін-т екон. та прогнозування НАН України, 2017. – 371 с.

4. Данкевич А.Є. Особливості функціонування холдингів в агарному секторі економіки / А. Є. Данкевич // Збірник наукових праць Таврійського державного агротехнологічного університету. – 2013. – Випуск 5 (2). – С. 82–91.

5. Дудар Т.Г. Формування ринку конкурентоспроможної агропродовольчої продукції: теорія, методика, перспективи: монографія / Т. Г. Дудар, В. Т. Дудар. – Тернопіль: Економічна думка, 2009. – 246 с.

6. Єдиний державний реєстр юридичних осіб, фізичних осіб-підприємців та громадських формувань [Електронний ресурс] // Сайт Міністерства юстиції України. – Режим доступу: https://usr.minjust.gov.ua/content/free-search

7. Закупівельні ціни СПОТ [Електронний ресурс] // Сайт ПАТ «Аграрний фонд». – Режим доступу: http://agrofond.gov.ua/buy/prices/

8. Земельний довідник України: інфографічний довідник 2020 [Електронний ресурс] // AGROPOLIT.COM. – Режим доступу: https://agropolit.com/spetsproekty/705-zemelniy-dovidnik-ukrayini--baza-danih-prozemelniy-fond-krayini.

Котлик А. В. Побудова системи показників для оцінки конкурентоспроможності бізнес-процесів підприємства / А. В. Котлик // Управління розвитком: зб. наук. робіт. – Х.: Вид. ХНЕУ, 2011. – № 21 (118). –

C. 30 - 32.

10. Котлик А. В. Цілеорієнтований підхід до ідентифікації бізнес-процесів підприємства / А. В. Котлик // Бізнес Інформ. – 2013. – № 2. – С. 193 – 196.

11. Лепейко Т. І. Процесний підхід до управління конкурентоспроможністю підприємства: монографія / Т. І. Лепейко, А. В. Котлик. – Харків: Вид. ХНЕУ, 2012. – 316 с.

12. Липчук В. В. Поведінка продавців на оптових ринках / В. В. Липчук,
О. М. Крупа // Збірник наукових праць Буковинського університету. Економічні науки. – 2016. – Випуск 12. – С. 106–112.

13. Михайлова Л. І. Механізми управління маркетингом та збутом продукції сільськогосподарських підприємств на ринку зерна / Л. І. Михайлова, М. О. Лишенко, Т. В. Устік // Економіка АПК. – 2018. – № 10. – С. 40–49

14. Музичка Є. О. Оцінка ефективності управління збутовою діяльністю туристичних підприємств / Є. О. Музичка // Економічний часопис-XXI. – 2013.
– Випуск 11 (2). – С. 64–67.

15. Панухник О. В. Маркетингово-збутова діяльність сільськогосподарських підприємств: засади формування системи управління / О. В. Панухник // Вісник Сумського національного аграрного університету. – 2016. – Випуск 12 (70). – С. 184–188.

16. Пріоритетні напрями розвитку інфраструктури аграрного ринку в Україні [Електронний ресурс] // Сайт Національного інституту стратегічних досліджень. – Режим доступу: https://niss.gov.ua/ doslidzhennya/ekonomika/pri oritetni-napryami-rozvitku-infrastrukturi-agrarnogo-rinku-v-ukraini.

17. Пшенична М.В. Формування каналів розподілу в системі маркетингу як фактор підвищення конкурентоспроможності підприємств переробної галузі / М. В. Пшенична // Науково-виробничий журнал «Бізнес-навігатор». – 2011. – Випуск 25 (4). – С. 25–30.

18. Реалізація продукції сільськогосподарськими підприємствами: статистичний бюлетень [Електронний ресурс] // Сайт Державної служби статистики України. – Режим доступу: https://ukrstat.org/uk/druk/publicat/

Arhiv\_u/07/Arch\_rsp\_bl.htm.

19. Ревенко Н. Управління процесом формування конкурентоспроможності продукції підприємства / Н. Ревенко, І. Малихіна // Вісник ТНЕУ. – 2013. – № 2. – С. 62–70.

20. Ревенко Н. Управління процесом формування конкурентоспроможності продукції підприємства / Н. Ревенко, І. Малихіна // Вісник ТНЕУ. – № 2. – 2013. – С. 62-70.

21. Розумей С. Б. Методичні аспекти формування систем розподілу продукції в збутовій системі підприємства / С. Б. Розумей, І. В. Ніколаєнко // Проблеми системного підходу в економіці. – 2017. – Випуск 61 (5). – С. 125–130.

22. Розумей С. Б. Методичні підходи щодо оцінювання каналів розподілу продукції / С. Б. Розумей, К. Ю. Семененко, І. П. Розпутня // Формування ринкових відносин в Україні. – 2014. – Випуск 162 (11). – С. 169–173.

23. Романюк Н. Д. Підвищення ефективності діяльності посередницьких структур в сільському господарстві: дисертація // Н. Д. Романюк. – Львів: Львівський національний аграрний університет, 2018. – 209 с.

24. Россоха В. В. Формування збутової політики маркетингу аграрних підприємств: монографія / В. В. Россоха, О.М. Шарапа. – Київ: ННЦ «1АЕ», 2016. – 232 с.

25. Россоха В.В. Управління збутовою діяльністю аграрних підприємств у транзакційному вимірі / В. В. Россоха, О. М. Шарапа // Економіка АПК. – 2017. – №4. – С. 67–77.

26. Русан В. М. Державна аграрна політика, оцінка ефективності та шляхи удосконалення: аналітична записка / В. М. Русан // Серія «Економіка». – №. 2. – Київ: Національний інститут стратегічних досліджень, 2019. – 12 с.

27. Сільське господарство України: статистичний збірник // Державна служба статистики України. – Київ, 2019. – 235 с.

28. Сільське господарство України: статистичний збірник [Електронний ресурс] // Сайт Державної служби статистики України. – Режим доступу:

http://www.ukrstat.gov.ua/druk/publicat/Arhiv\_u/07/Arch\_sg\_zb.htm.

29. Соболєва-Терещенко О. А. Оцінка ефективності маркетингової діяльності в контексті розбудови програм лояльності покупців / О. А. Соболєва-Терещенко, В. О. Антонова [Електронний ресурс] // Ефективна економіка. – 2019. – № 5. – Режим доступу: http://www.economy.nayka.com.ua/?op=1&z=7058.

30. Спільник І. В. Аналіз ефективності збутової діяльності підприємства / І. В. Спільник, О. М. Загородна // Економічний аналіз: збірник наукових праць. – Випуск 24 (2). – Тернопіль : Видавничо-поліграфічний центр Тернопільського національного економічного університету «Економічна думка», 2016. – С. 130–140.

31. Стан фінансування АПК у 2019 році [Електонний ресурс] // Сайт Інформаційно-аналітичного порталу АПК України. – Режим доступу: https://agro.me.gov.ua/ua/napryamki/finansova-politika/finansuvannya-z-derzhavnog o-byudzhetu/stan-finansuvannya-apk-u-2019-roci.

32. Топ 100 латифундистов Украины [Електронний ресурс] // Сайт Latifundist.com. – Режим доступу: https://latifundist.com/rating/top100#294.

33. Туболець К. Г. Шляхи вдосконалення управління маркетинговою діяльністю аграрних підприємств / К. Г. Туболець. – Наукові праці. Державне управління. – 2012. – Випуск 174 (186). – С. 129–132.

34. Харенко А. О. Збут продукції рослинництва сільськогосподарськими підприємствами / А. О. Харенко, О. Л. Бурляй, Т. І. Бортник // Економіка та управління підприємствами. – 2015. - №1. – С. 213–225.

35. Шестакова П. Ю. Аграрний ринок в Україні в умовах Євроінтеграції / П. Ю. Шестакова, Т. С. Ожелевська //Молодий вчений. – 2018. – Випуск 55 (3). – С. 720–721.

36. Янишин Я. Функціонування аграрних бірж в Україні / Я. Янишин, О. Булик, І. Лаврів // Аграрна економіка. – 2014. – Випуск 7(3–4). – С. 47–52.

37. Agricultural sector of Ukraine: Securing the global food supply [Electronic resource] // Office of the National Investment Council of Ukraine website. – 2018. – Access mode: https://www.agroberichtenbuitenland.nl/documenten/rapporten

/2018/07/04/ua-report-investment-council-ua-agriculture.

38. Aldin L. A comparative analysis of business process modelling techniques / Laden Aldin, Sergio de Cesare // Proceedings of the UK Academy for Information Systems (UKAIS) 14th Annual Conference. Oxford: UKAIS, 2009. – 17 p.

39. Baker M.G. Marketing: theory and practice / Michael J. Baker. – London: Macmillan Publishers Limited, 1976. – 177 p.

40. Chen I. J. Towards a theory of supply chain management: the constructs and measurements / Injazz J. Chen, Antony Paulraj // Journal of Operations Management. – 2004. – Issue 22 (2). – P. 119–150.

41. Coelho F. A model of the antecedents of multiple channel usage / Filipe Coelhoa, Chris Easingwood // Journal of Retailing and Consumer Services. – 2008. – Issue 15 (1). – P. 32–41.

42. Corn Exporters from Ukraine in 1H 2020 [Electronic source] // Latifundist.com website. – Access mode: https://latifundist.com/en/rating/top-15eksporterov-kukuruzy-v-pervom-polugodii-2020-g

43. Ilesanmi O. A. The Significance of Distribution Channel and Product Life Cycle in the Management of an Organization / O. A. Ilesanmi // Global Journal of Management and Business Research. – 2011. – Issue 11 (10). – P. 4–16.

44. Integration definition for function modeling [Electronic resource] // National Institute of Standards and Technology website. – Access mode: https://nvlpubs.nist.gov/nistpubs/Legacy/FIPS/fipspub183.pdf.

45. Jandaghi G. A Framework for Selection of Intermediary in Marketing Channel / G. Jandaghi, K. Shahanaghi, H. R. Irani // Broad Research in Accounting, Negotiation, and Distribution. – 2011. – Issue 2 (2). – P. 51–62.

46. Jobber D. Selling and Sales Management / David Jobber, Geoff Lancaster. –
8th ed. – England: Financial Times/ Prentice Hall, 2009. – 546 p.

47. Kernel – H1 FY2019 results and company presentation [Electronic resource] // Kernel Holding website. – Access mode: https://www.kernel.ua/wpcontent/uploads/2019/02/Kernel\_FY2019\_H1\_Presentation.pdf.

48. Kernel Holding S.A. Annual report for the year ended 30 June 2019

[Electronic resource] // Kernel Holding website. – Access mode: https://www.kernel.ua/wp-content/uploads/2019/10/Kernel\_FY2019\_Annual\_ Report \_.pdf.

49. Kernel Holding S.A. Annual report for the year ended 30 June 2020 [Electronic resource] // Kernel Holding website. – Access mode: https://www.kernel.ua/wp-content/uploads/2020/10/Kernel\_FY2020\_Annual\_Report. pdf.

50. Kotler P. Principles of Marketing / P. Kotler, V. Wong, J. Saunders et al. – 4rd ed. – Harlow: Financial Times/ Prentice Hall publishing, 2005. – 992 p.

51. Lilien G. L. Exceptional Paper—ADVISOR 2: Modeling the Marketing Mix Decision for Industrial Products / Gary L. Lilien // Management Science. – 1979. – Issue 25 (2). – P. 191–204.

52. Mallen B. Selecting channels of distribution: a multi-stage process / Bruce Mallen // International Journal of Physical Distribution and Logistics Management. – 1996. – Issue 26 (5). – P. 50–56.

53. Mazorenko O. V. The logistics aspects of customer satisfaction / O. V. Mazorenko [Електронний ресурс] // Економіка та суспільство. – 2018. – № 17. – С. 281 – 285. – Режим доступу: http://economyandsociety.in.ua.

54. Nüttgens M. Business Process Modeling with EPC and UML Transformation or Integration? / M. Nüttgens, T. Feld, V. Zimmermann // The Unified Modeling Language - Technical Aspects and Applications. – Heidelberg: Verlag HD, 1998. – 282 p.

55. Ostrow R. The Fairchild Dictionary of Retailing / Rona Ostrow. – 2nd ed. – NY: Fairchild Books publishing, 2008. – 480 p.

56. Palmatier R. W. Marketing Channel Strategy / Robert W. Palmatier, Louis W. Stern, Adel I. El-Ansary. – 8th ed. - New Jersey: Pearson Education, 2015. – 466 p.

57. Saaty T. L. Decision making with the analytic hierarchy process / Thomas L. Saaty // International Journal Services Sciences. – 2008. – Issue 1 (1). – P. 83–98.

58. Serdaris P. Supply chain management: a view of the distribution channel / P. Serdaris, I. Antoniadis, N. Tomlekova // Bulgarian Journal of Agricultural Science.

- 2014. - Issue 20 (2). - P. 480-486.

59. Šerif V. Functional and Information Modeling of Production Using IDEF Methods / Veis Šerifi, Predrag Dašiü, Ratomir Jecmenica et al. // Journal of Mechanical Engineering. – 2009. – Issue 55 (2). – P. 131–140.

60. Stock J. R. Fundamentals of logistic management / James R. Stock, Douglas M. Lambert, Lisa M. Ellram. – USA: The McGraw-Hill Companies, 1998. – 611 p.

61. Straka M. Classification of distribution networks / M. Straka, D. Malindzak // Total logistic management. – 2010. – Issue 10. – P. 79–86

62. Straka M. Distribution and Supply Logistics: Monograph / M. Straka. – Newcastle: Cambridge Scholars Publishing, 2019. – 598 p.

63. Tortato U. Study On The Configuration Of Distribution Channels For New Automobiles / U. Tortato, R. Marx // Journal of Operations and Supply Chain Management. -2010. - Issue 3 (1). - P. 67–78.

64. Tosun O. Using Macbeth Method for Technology Selection in Production Environment / Ömür Tosun // American Journal of Data Mining and Knowledge Discovery. – 2017. – Issue 2 (1). – P. 37–41.

65. Tramarico C. l. Analytic Hierarchy Process and Supply Chain Management: a bibliometric study / Claudemir Leif Tramarico, D. Mizuno, V. A. Pamplona Salomon et al // Procedia Computer Science. – 2014. – Issue 55. – P. 447–450.

66. Velasquez M. An Analysis of Multi-Criteria Decision-Making Methods / M. Velasquez, P. T. Hester // International Journal of Operations Research. – 2013. – Issue 10 (2). – P. 56–66.

67. Webb K. L. Hybrid channel conflict: causes and effects on channel performance / K. L. Webb, J. E. Hogan // Journal of Business and Industrial marketing. – 2002. – Issue 11 (5). – P. 338–356.

68. Webster F. E., Jr. Industrial Marketing Strategy / F. E. Webster, Jr. – 3rd ed.
– New Jersey: Wiley, 1995. – 384 p.

69. Weitz B. A. Relationship Marketing and Distribution Channels / B. A. Weitz,
S. O. Jap // Journal of the Academy of Marketing Science. – 1995. – Issue 23 (4). –
P. 305–320.

70. Wheat Exporters from Ukraine in 1H 2020 [Electronic source] // Latifundist.com website. – Access mode: https://latifundist.com/en/rating/top-15eksporterov-pshenitsy-v-pervom-polugodii-2020-g