UDC 330.341.1

Chernelevskaya Olga

Doctor of Economics, Professor of the Department of Finance, National University of Food Technologies

Chernelevskiy Leonid Professor of the Department of Accounting and Auditing, National University of Food Technologies

DEVELOPMENT OF VERTICAL INTEGRATION AND CLUSTERIZATION POTENTIAL AS AN EFFICIENT INSTRUMENT FOR INCREASING COMPETITIVENESS **OF INDIVIDUAL FIELDS OF FOOD INDUSTRY**

Scientifically grounded support for humanity, in particular the population of any country in the world in high quality food, is a global problem. The food industry, which is not only the final functional unit of food production, but also a real organizer and integrator of efficient, rational and balanced functioning of the food complex of each state, belongs to the food sector at a regional, national, and planetary level. Not an exception in this case is Ukraine, whose agro-industrial complex combines not only agricultural enterprises but also food enterprises as a crucial part in ensuring food security of the country. For the emergence of a stable competitive advantage in the country, a competitive industry must rely on four determinants of competitive diamond. The industry should have favorable factor conditions, demand, affinity (related) and supporting industries, and internal competition in the market. These determinants create competitive advantages for those industries that have significant international potential and can serve as the basis for competitiveness for the country. Keywords: competitiveness, food safety, vertical integration, clusterization.

РОЗВИТОК ПОТЕНЦІАЛУ ВЕРТИКАЛЬНОЇ ІНТЕГРАЦІЇ І КЛАСТЕРИЗАЦІЇ ЯК ЕФЕКТИВНОГО ІНСТРУМЕНТУ ПІДВИЩЕННЯ КОНКУРЕНТОЗДАТНОСТІ ОКРЕМИХ ГАЛУЗЕЙ ХАРЧОВОЇ ПРОМИСЛОВОСТІ

Чернелевська О.Л., Чернелевський Л.М.

Науково обґрунтована підтримка людства, зокрема населення будь-якої країни світу високоякісною їжею, є глобальною проблемою. Харчова промисловість, яка є не лише кіниевою функціональною одиницею виробництва харчових продуктів, але й справжнім організатором та інтегратором ефективного, раціонального та збалансованого функціонування харчового комплексу кожної держави, належить до харчового сектору на регіональному, національному та планетарному рівні. Не є винятком у цьому випадку й Україна, агропромисловий комплекс якої поєднує не лише сільськогосподарські підприємства, але й харчові підприємства, як важливу частину забезпечення продовольчої безпеки країни. Для появи стабільної конкурентної переваги в країні конкурентна галузь повинна спиратися на чотири показники "конкурентного ромбу". У промисловості мають бути сприятливі факторні умови, попит, споріднені (пов'язані) та допоміжні галузі, а також внутрішня конкуренція на ринку. Ці показники створюють конкурентні переваги для тих галузей, які мають значний міжнародний потенціал і можуть слугувати основою конкурентоспроможності для країни. Саме ці лідери галузі повинні бути основою кластерів зростання всередині країни. Актуальність теми статті обумовлена посиленням конкуренції у світі, глобалізацією та інтернаціоналізацією, різкою економічною диференціацією окремих країн, галузей. Саме тому дослідження конкурентоспроможності окремих галузей економіки, що може бути провідним фактором економічного зростання України, особливо в умовах фінансової кризи, є надзвичайно актуальним питанням. У найближчі кілька років відбудуться кардинальні зміни. Україна, як один із провідних гравців, повинна орієнтуватися та реагувати на події, що відбуваються.

Ключові слова: конкурентоздатність, продовольча безпека, вертикальна інтеграція, кластеризація.

РАЗВИТИЕ ПОТЕНЦИАЛА ВЕРТИКАЛЬНОЙ ИНТЕГРАЦИИ И КЛАСТЕРИЗАЦИИ КАК ЭФФЕКТИВНОГО ИНСТРУМЕНТА ПОВЫШЕНИЯ КОНКУРЕНТОСПОСОБНОСТИ ОТДЕЛЬНЫХ ОТРАСЛЕЙ ПИЩЕВОЙ ПРОМЫШЛЕННОСТИ

Чернелевская Е.Л., Чернелевский Л.Н.

Научно обоснованное обеспечение человечества, включая население любой страны мира. продовольствием высокого качества – глобальная проблема. Особая роль в решении продовольственной проблемы на региональном, национальном и общепланетарном уровнях принадлежит пищевой промышленности, которая является не только завершающим функциональным звеном производства продовольственной продукции, но и реальным организатором и интегратором эффективного, рационального

и сбалансированного функционирования продовольственного комплекса каждого государства. Не является исключением в данном случае и Украина, агропромышленный комплекс которой сочетает в себе не только сельскохозяйственные предприятия, но и пищевые предприятия как решающее звено в обеспечении продовольственной безопасности страны.

Ключевые слова: конкурентоспособность, продовольственная безопасность, вертикальная интеграция, кластеризация.

Formulation of the problem. In the 21st century, food will play an equally important role in the global economy and politics as energy resources in the 20th century. At the same time, the world food market, the volume of which today exceeds \$ 1 trillion. In the next few years, there will be radical changes. Ukraine, as one of the leading players, needs to be guided and responsive to the events that take place.

The urgency of the topic of the article is due to the intensification of competition in the world, globalization and internationalization, sharp economic differentiation of individual countries, industries. Therefore, the study of the competitiveness of certain sectors of the economy, which may be the flagship of Ukraine's economic growth, especially in the context of the financial crisis, is an extremely urgent issue.

International competitiveness is a complex and multifaceted phenomenon, especially in today's market environment, where competitiveness determines the role and future of the country. This phenomenon evolved over a long period of time, acquired various forms, depended on many factors. The problem of international competitiveness is devoted to many works, both domestic scientists and foreign ones.

Analysis of research and publications. Some aspects of this problem, in particular, can be traced in the writings of such foreign scholars as M. Porter, M. Renolds, S. Smith, L. Taylor, M. Friedman, F. Hayek [6] et al.; Ukrainian scientists – L. Antonyuk, D. Lukyanenko, V. Novitsky, A. Chief, C. Sokolenko, A. Filippenko, T. Tsygankova, O. Shnipko, O. Shnirkova, but more in the aspect of ensuring the competitiveness of goods, firms, industries, regions. But at the same time, the international competitiveness of the country is not simply a sum of competitiveness of goods, industries, regions, but is their qualitative combination in combination with other factors. However, many aspects of this scientific problem remain inadequate and substantiated.

The purpose of this article is to study the theoretical and methodological foundations of the international competitiveness of the oil industry in Ukraine and its cluster potential. The subject of the study is the composition and stage of the formation of the competitive potential of the largest vegetable oil producers in Ukraine.

Presenting main material. According to UNOA forecasts, by 2050 the population will increase by 2.3 billion. (+33%) and will reach 9.7 billion. The main growth will be in Asia and Africa (> 85% – 2.4 billion people), which will make up 80% of the population – the least equipped with food production regions. In this case, India with a population of 1.7 billion. Man will bypass China and become the largest country in the world, and the population of China itself will not change fundamentally (1.4 billion). The third place is occupied by Nigeria, whose population will exceed 400 million by 2050 people [7].

While the population of the Earth continues to grow rapidly, there is practically no left to use agricultural land

suitable for agricultural development. The lands on which the bulk of food is produced (arable land, gardens and plantations, meadows, pastures) make up only 9% of the Earth's surface [8]. Therefore, with the increase of mankind, less and less every farmer in the planet has agricultural land. On the other hand, the importance of countries with developed agrarian sector is increasing, with a relatively small demographic pressure on its own population.

As can be seen from the first dozen countries with large land potential, only a few countries of the world can accelerate the increase of food production in the medium term. Among them: Australia, Brazil, Russia and Ukraine. As everyone knows, China and India are in a state in which their own population has grown, posing their food security under constant threat, even despite their enormous agrarian potential.

It is known that some countries with sufficient financial resources have, in recent years, stepped up their activities, such as passing national agriculture outside the country. For example, the Arab Gulf countries, as well as China, have started practicing long-term lease of agricultural land in foreign countries (most often in East Africa and Southeast Asia) because of the ineffectiveness of the strategy of increasing the yield of available land and the lack of opportunities to expand farmland in its own territory,. These areas send their own workforce to ensure the guaranteed supply of agricultural products for their own needs.

In the light of these problems, it is precisely Ukraine that has the potential for a significant increase in production in the agricultural sector. Favorable climatic conditions and the presence of fertile soils contribute to this. A well-known fact is that around 30% of the world's chernozem reserves are located in Ukraine, with their share accounting for about 60% of all agricultural lands and 44.0% of the entire territory of the country. While the global rate is much more modest, and averaging only 6% of each country's territory [9].

Comparing the average yield of major export crops, today it is much lower than in Europe and the United States of America, at least two, and in some crops and three times.

If the yields of our lands were as in Germany, then in colossal areas we could feed half a billion people. This is all the current population of the European Union, for example.

Despite the extremely low yields, Ukraine is among the ten largest producers of the main types of products in the agro-industrial sector in terms of gross output and the volume of sown areas used. Ukraine is one of the world's largest exporters of sunflower oil.

It is vertical integration in this field that can serve as a powerful multiplier of positive changes in connection with the transition from the raw material economy to the economy, which creates added value within the stratum and produces the growth of the gross national product. The cluster mechanism of vertical integration is the most progressive and can serve as the basis for long-term changes and reforms.

The total volume of world trade in vegetable oils in 2016 amounted to \$ 69.7 billion, or 80.5 million tons. The largest volume of world trade falls on palm oil, which accounts for 44% of the total volume of supplies or \$ 30.6 billion. Leader Importer of palm oil - India. The largest suppliers of palm oil are Indonesia and Malaysia, which together control 85% of the market. In the second and third place in terms of imports - soybean and sunflower oil, which occupy respectively 14% and 13% of the world market. In terms of money, the supply of soybean oil is \$ 9.5 billion and sunflower oil \$ 9.4 billion. The main volume of soybean oil is supplied to India. The leading supplier of soybean oil is Argentina. Its share in the market is more than 40% or \$ 3.8 billion. The largest volumes of sunflower oil on the world market are purchased by India and Turkey - \$ 1.3 and \$ 1.1 billion accordingly. Ukraine's leading supplier of sunflower oil in the world is 57%.

According to the updated data of the UN FAO, the world's harvest of key oilseeds (soybeans, rape, peanuts and sunflower) in the 2016/17 season will be 509 million tons, which is almost 45 million tons more than in the 2015/16 season. The main drivers of yield growth will be sunflower (+ 11.4%) and soybean (+ 11.2%) [7].

On the whole, in the long run, growth in volumes of both production and world trade in oilseeds is expected. According to the OECD forecast, the total production of vegetable oils in the year 2025 will increase to almost 220 million tons (an increase of more than 20%), and the world trade in vegetable oils – by 12%, to 92 million tons.

According to the World Economic Forum (World Economic Forum) (hereinafter – WEF), the competitiveness of the country is seen as a combination of factors, policies and institutions that determine the level of efficiency of the country means better use of existing factors of production and resources and the level of aggregate economic growth. Thus, a more competitive economy will be one of the fastest growing in the medium and long-term period of time [10].

The field of vegetable oil production in Ukraine is a powerful driver of the food industry and should serve as the basis for its competitiveness. Unique natural and climatic conditions of Ukraine allow to grow sunflower in almost all territory of Ukraine. But the most favorable lands of the steppe zone and the southern forest steppe, the largest harvest in 2010 was obtained in Dnipropetrovsk, Zaporozhye, and Kirovograd regions. Sunflower requires a certain number of sunny days a year in order to have an enzymatic process of seed oil formation.

In the total production of oilseeds in Ukraine, sunflower takes up more than 90%, and in the structure of crops area is not less than 10%. The country ranks first in the world ranking, providing from 20 to 24% of world sunflower seeds production.

As of 2016/17 marketing year, Ukraine is the world leader in the production of sunflower oil. Thus, in 2017, Ukraine exported 5169 million tons of oil, accounting for 57% of world exports.

Sunflower oil cheese is in demand in the Middle East, and Ukraine supplies quite large volumes to North African and South-European countries, with France acting as one of the leading buyer countries in the European Union for Ukraine.

Considering the prospects of Ukraine's participation in the global market for sunflower oil, it is important to note that, according to international companies, the deficit of sunflower oil in the EU countries in the coming years will be maintained at 2 million tons per year, which will enable Ukraine, in the event of signing a free trade agreement with the EU, to strengthen their positions and significantly increase their competitiveness.

A common feature of the industry is the struggle for the main raw material – sunflower seeds, from which the largest companies have recently offered maximum prices for the purchase of raw materials. This led to the fact that, since the beginning of 2004, domestic prices for sunflower seeds exceeded the world. High domestic prices make the industry profitable and attractive to investors.

Today in Ukraine there are about 10 largest vegetable oil producers, which control up to 90% of the total production of this product. The largest producers of sunflower oil in Ukraine are the holding of the Kernel Group and the subsidiary "San-Trade" (Bunge Ltd.)

Kernel Group (Managing Company, LLC "Kernel-Trade", LLC "Kernel-Capital") is a vertically integrated national company operating in the agro-industrial sector of Ukraine. 41.16% belong to the chairman of the board of directors of the company Andriy Verevsky – the people's deputy of Ukraine.

Group enterprises form a production chain: agricultural production, concentration, logistics and international grain sales, as well as the production and sale of raw and bottled sunflower oil on the international and domestic markets. The Group is the largest privately owned company providing elevator services in Ukraine and the main operator for handling and export of grain, oil and sunflower oil through port terminals in the Black Sea. Leadership in all segments of activity, the variety of products and markets in which the group operates, ensure the stability and competitiveness of its business activities.

In 1995, Kernel began its activity on the export of Ukrainian agricultural products. With low assets, the company began to acquire grain elevators – key assets for controlling the production and logistics of grain, which became the tool for creating a stable long-term basis of grain production. In 2002, Kernel expanded its operations by acquiring "Poltava Oil Extraction Plant" (Poltava Region). Since 2004, for vertical integration, it has been decided to work on the domestic consumer market. In connection with which Kernel will acquire Milensky Refined Oils Plant "Streletsky Steppe" (Luhansk Oblast) together with the trademark of Bottled Sunflower Oil "Shchedry Dar".

2006 – Successfully completed purchase of production assets of Evrotek, one of the largest competitors in the domestic market. As a result of this operation, the company's production capacity is doubled, and Kernel is a leader in agribusiness in Ukraine. Kernel includes Poltava oil extraction plant (MEZ), Prykolotnyansky and Vovchansky SEZ, more than 20 elevators, the trading company Kernel-Trade, financial intermediary Kernel-Capital, and the company Inerco representing the group's interests in international markets.

In 2007, a new stage of development for Kernel began – the initial public offering of shares on the Warsaw Stock Exchange was held. In addition, a long-term licensing agreement with Chumak Company was signed, which allowed to obtain exclusive rights for the production and sale of bottled sunflower oil of Chumak Gold and Chumak

Home. As a result, the group concentrated on the trademarks Shchedry Dar, Stozhar, Chumak Home, Chumak Gold, and Lyubonka, which allowed it to concentrate 35% of the market for the production and sale of bottled sunflower oil in Ukraine.

In 2008, purchased the second largest grain complex in Ukraine, Transbakterminal. Transbakterminal – a grain terminal in the port of Illichivsk (Black Sea). The enterprise provides services for transshipment and transportation of both own grain of the company and other large exporters. The capacity for grain transshipment reaches 4 million tons per year. Kernel has received a unique platform for exporting grain produced in Ukraine, as well as for the transit of grain from Russia and Kazakhstan. The company has increased its land bank to 80,000 hectares of agricultural land.

In 2009, Kernel expanded its production capacity of vegetable oil in the Black Sea region by concluding a contract for the processing of customer-supplied raw materials in the amount of 230 thousand tons of sunflower seeds per year from CJSC "Illichivsky Oil and Extraction Plant", located next to its port terminal. In 2010, Kernel buys the assets of its competitor, Allseeds, thereby increasing production capacity for sunflower seed processing by 565 thousand tons per year, as well as terminals for handling and export of sunflower oil and sunflower oil. Now with the commissioning of a new multi-grain oil extraction plant in the north of the Mykolayiv region, the total production capacity of Kernel for processing sunflower seeds is 2.3 million tons of grain.

In 2011, the company doubled its agricultural assets as a result of the acquisition of Ukrros, owning 90 thousand hectares of agricultural land and sugar factories with a total capacity of processing 2 million tons of sugar beet per year. In the same year, Kernel bought the company "Russian oils" and went to the Russian market. Due to this acquisition, the total productive capacity for processing sunflower seeds increased by 400 thousand tons per year, which allowed Kernel to successfully consolidate itself in the Russian market.

In addition, the holding holding "Kernel" intends to build another butter plant in Russia. In this project, "Kernel" intends to invest about \$ 100 million over two years. It is planned that the processing capacity of a new plant will be about 600 thousand tons of sunflower per year. At the same time, Kernel Group is not going to stop at the achieved and in 2014 plans to build another 6 elevators. According to the company itself, the estimated capacity of new enterprises will be 400 thousand tons of one-time storage. Kernel is the undisputed leader in sunflower oil production in Ukraine and its largest exporter.

The company operates in seven business segments: sunflower oil, bottled sunflower oil, grain and oilseeds exports, port terminals, elevators, agriculture, sugar. The company serves as a link between Ukrainian producers of agricultural products and international markets, taking leading positions in the field of grain exports. The company creates added value due to its logistic infrastructure, high level of competence, application of modern approaches in the field of international marketing and sales, and also using the natural competitive advantages of agriculture in Ukraine. The control of a continuous production cycle from harvesting to the product on the shelf can increase overall production efficiency and optimize logistics costs, as well as ensure unconditional quality and product safety and serve the long-term competitive advantage of Kernel Group [11].

Another largest producer of sunflower oil in Ukraine is a subsidiary of the international company Bunge Ltd. – SE "Santrade". Bunge was founded in Amsterdam in 1818 and has grown from family business to a leading international integrated company operating on the market for agricultural products and food products. Today, the company's head office is located in White Plains, New York, USA. Bunge operates in more than 30 countries. The number of employees in more than 450 enterprises owned by the company exceeds 30 thousand people. In August 2001, Bunge entered the list of companies that form the indexes of all US stock markets, which is a recognition of high reliability of the company.

Bunge Company started its activity in Ukraine since 2002 and created a division of Bunge Ukraine. She carries out activities in the field of agribusiness and production of refined oil, and the group now includes:

• Subsidiary enterprise with foreign investments "Santreyd" – one of the largest Ukrainian grain traders;

• four grain elevators in Odesa, Dnipropetrovsk, Kirovograd and Vinnytsia regions;

• Closed Limited Liability Company with Foreign Investments "Dnipropetrovsk Oil and Extraction Plant", where oil extraction, refining and bottling is carried out under the trademarks "Oleina" and "Rosumnitsa";

• the manufacturer of mayonnaise "Oleina" company "Slavolia".

In 2001, the quality management system was implemented at Dnipropetrovsk Oil Extraction Plant for compliance with the international standard ISO 9001. ISO 9001: 2008 quality management system: provides for constant control over the quality of products with internal processing and delivery to its customers.

In 2009, the plant developed, implemented and certified a food safety management system ISO 22000. The Food Safety Management System ISO 22000: 2005 (HACCP): provides for product protection against hazardous factors that can enter it. The HACCP system today has international recognition as a special management system for food process technology, which guarantees the safety of consumers' health. An international standard for environmental management ISO 14001 was also introduced, calling for a balance between preserving profitability and environmental impact.

Today Dnipropetrovsk oil-extraction plant is one of the largest Ukrainian producers of refined sunflower oil. Now the production capacity is 460 tons of packaged refined oil per day.

Subsidiary enterprise with foreign investments "Santreyd" – one of the largest Ukrainian grain traders and works only with proven agricultural enterprises. Now Oleuna mayonnaise is carried out at the facilities of Slavolia Enterprise, with the highest quality standards, and is presented in four types: Olayna Premium, Oleina Provençal, Oleynaya Classic and Oleina Lengky. Oleina Mayonnaise Enterprise has implemented a quality management system ISO 9001: 2008, and also produces and labeling Oleina mayonnaise, in accordance with current DSTU and standards for food labeling.

Oleina oil is produced in Ukraine since 1998; Mayonnaise "Oleina" – since 2009. "Bungea Ukraine" embodies Bunge's traditional quality standards based on rigorous European standards in these products. The basis of the production process is the strict control of product quality at all stages. Quality assurance is part of Bunge's largescale program called Bunge Total Security (Bunge General Security). It covers all aspects of the company's relationship with consumers, employees and partners and is an expression of a responsible philosophical position of the company.

As in other European countries, in the diet of Ukrainians there is a shortage of fatty acids Omega-3. Omega-3 is considered to be essential fatty acids, which can not be carried out by the body independently and should come exclusively from food. In order to cope with the deficiency of fatty acids Omega-3, the Bunge Ukraine Company introduced an innovative product in 2011: Oleyn IntelektUum. This product consists of 90% of sunflower and 10% of linseed – a rich vegetable source of fatty acids Omega-3 [12].

Conclusion. As can be seen from the structure of the two largest groups of enterprises for the production of sunflower oil in their structure there are no innovation centers, namely, scientific institutions and educational institutions, which should prepare specialists specializing precisely for the needs of the industry. However, if the Bunge group has innovation centers outside of Ukraine and only uses them from us, then the Kernel group of companies, unfortunately, can not boast its innovative infrastructure and has almost all the equipment that was installed during the modernization of production capacities to purchase abroad, which leads to its dependence on foreign suppliers of industrial services. Equipment suppliers were Behlen (USA), Grain Handler (USA) and Bonfanti and Bernardini (Italy), Intersystem (USA), galvanized steel structures LeMarIndustries (USA), press equipment Böhler (Germany).

In addition, sunflower oil producers do not have their own chain of sales and cooperate with retailers in the mode of the seller – the seller, which makes them comply with the terms of trade organizations. Therefore, the very topical issue in the process of forming a cluster vertical integration association should be the creation of a common distribution network and trade organizations that have to reduce the costs of companies for logistics and retail sales of products.

Also, for the purpose of joining efforts on sales of products abroad, foreign trade organizations should be established, which will closely cooperate with trade missions abroad and represent the products of Ukrainian producers in a comprehensive manner when carrying out accreditation of products outside Ukraine and concluding foreign trade contracts.

Countries have the greatest chance of success in those industries or their segments where the determinants of competitive advantage as systems have the most favorable character. So the presence of agricultural natural resources in the country undoubtedly affects the competitive advantage of Ukraine in the field of oilseeds. The geographical position of Ukraine, with respect to the main consumers of sunflower oil, is extremely favorable. The production sector today has the main factor competitive advantages such as natural resources, climatic conditions, geographic location of the country, but unfortunately, it has no accumulated competitive advantages - it is a modern market infrastructure and well-educated personnel. In addition, the industry has not created specialized research institutes, and as a consequence, do not have specialized competitive advantages - it is staff with a narrow specialization, specific types of infrastructure, databases in certain branches of knowledge and other factors used in a limited number of industries.

Obtaining a competitive advantage based on factors depends first and foremost on how efficiently they are used, and therefore only the innovation of the groups can serve as the basis for maintaining the competitiveness of the industry. As a conclusion, it should be noted that the competitiveness of the oil industry in Ukraine is not long and only the creation of vertically integrated innovation clusters of growth can provide it with long-term competitive advantage.

1. Porter M. Konkurensia. – M.: Izdatelskiy dom "Viliams". 2006. – 608 p.

2. Reynolds M. Evropeyskiy zakon pro konkurensiu – korisna model. 2 konferensia "Konkurentna politika v umovax perexidnoi ekonomiki". – Zbirnik tez, 2001.

3. Smitt S. Tomas S. Vinie E. New trends in American antitrust law. – "Euromoney". 1996.

4. Teylor L. Reforma ochima amerikanskix uchenix. – Russian Economic Chronicles. Fund "for economic literacy". 1996. 7 p.

5. Fridman M. Teoria rinku. – Chikago. 1973. 312 p.

6. Xaek F. Competition as a opening procedure. – Vienna. 1980. 3 p.

7. Food and Agriculture Organization of the United Nations. Access mode: http://www.fao.org/index_en.

8. World land resources and their assessment. Informational and analytical service of the federal portal "Indicators of the land market". February 2008. P. 4.

9. Heyets V., Borodina O., Prokop I. Ukrainian model of agrarian development and its socioeconomic reorientation: Sciences. report / National Academy of Sciences of Ukraine, Institute of Economics and Forecasting. – K.: [BB], 2012. – 55 p.

10. The World Economic Forum, Geneva. Access mode: http://www.weforum.org

11. Corporate site. Access mode: http://www.kernel.ua/

12. Corporate site. Access mode: http://www.bunge.com