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BACKGROUND FOR INNOVATIVE DEVELOPMENT OF FOOD INDUSTRY COMPANIES

The article describes the prerequisites for innovation development of food industry, in particular, on the example of the alcohol subsector. The competitiveness of alcohol production depends not only on its technical and technological level and qualifications of companies that have mastered the high-tech equipment, but also on the level of innovations in their production activities. Poor technical and technological base of such enterprises is a systemic problem. Without solving this problem, market positions of discrete enterprises will be weak, which ultimately would lead to the loss of the acquired position and termination of activity.

Keywords: background for innovative development; innovative activity; food and alcohol industry.

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ПЕРЕДУМОВИ ІННОВАЦІЙНОГО РОЗВИТКУ ПІДПРИЄМСТВ ХАРЧОВОЇ ПРОМИСЛОВОСТІ

У статті розглянуто передумови інноваційного розвитку підприємств харчової промисловості, зокрема, на прикладі підприємств спиртової промисловості. Доведено, що конкурентоспроможність спиртового виробництва визначається не тільки його техніко-технологічним рівнем і кваліфікацією персоналу підприємств, що освоїв роботу на високотехнологічному обладнанні, але й рівнем інноваційної спрямованості їх виробничої діяльності. Низький рівень техніко-технологічної бази підприємств спиртової промисловості є системною проблемою. Без вирішення цієї проблеми ринкові позиції окремих підприємств будуть послаблюватися, що в кінцевому підсумку призведе до втрати набутих позицій та припинення діяльності.

Ключові слова: передумови інноваційного розвитку; інноваційна активність; харчова та спиртова промисловість.

Табл. 2. Літ. 19.

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ПРЕДПОСЫЛКИ ИННОВАЦИОННОГО РАЗВИТИЯ ПРЕДПРИЯТИЙ ПИЩЕВОЙ ПРОМЫШЛЕННОСТИ

В статье рассмотрены предпосылки инновационного развития предприятий пищевой промышленности, в частности, на примере предприятий спиртовой промышленности. Доказано, что конкурентоспособность спиртового производства определяется не только его технико-технологическим уровнем и квалификацией персонала предприятий, который освоил работу на высокотехнологичном оборудовании, но и уровнем инновационной направленности их производственной деятельности. Низкий уровень технико-технологической базы предприятий спиртовой промышленности является системной проблемой. Без решения данной проблемы рыночные позиции отдельных предприятия будут ослабляться, что в конечном итоге может привести к утрате приобретенных позиций и прекращению их деятельности.

Ключевые слова: предпосылки инновационного развития; инновационная активность; пищевая и спиртовая промышленность.

Problem setting. In certain areas of innovative development of industrial companies we need to consider a range of elements of both external and internal environments, including innovative climate, innovative position, innovative potential, inno-

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vative activity. It should be borne in mind that innovation requires a coordinated organizational, technical, socioeconomic and administrative changes in the structure and parameters of enterprises inputs. Companies have different potential for transformation, and this reinforces the studies to determine the conditions for innovative development of food industry while overcoming the economic crisis in Ukraine.

Analysis of recent research and publications. Theoretical and practical studies on the innovative development of companies covered are represented by many domestic and foreign scholars: L. Antonyuk et al. (2003), O. Butnik-Seversky and A. Krasovska (2004), V. Geets and V. Seminozhenko (2006), S. Glazyev (1993), V. Dykan and V. Zubenko (2008), S. Illyashenko (2003), N. Krasnokutska (2003), B. Santo (2004), R. Fatkhutdinov (2004), D. Chervanyov (2003), J. Schumpeter (2008) etc. However, at present poorly studied are the conditions for innovative development of food industry and, in particular, alcohol industry. Given the current market situation (innovative inertia of enterprises) it is actual to study the conditions for innovative development of food industry.

The aim of the study is to determine the conditions for innovative development of food industry.

Key research findings. In today's world, there is a tremendous growth of the role of scientific and technological factors in economic development. This is paving the way for the study on theoretical foundations and analysis of the categories "development" and "innovative development".

At present there is no single interpretation of such notions as "development" and "innovation development". These economic categories depend on the object of a study at micro- and macrolevels.

The concept "development" is seen in several key aspects: as a process, as a set of changes and as a result. E. Korotkov (2003) views development as a set of changes that lead to the emergence of new quality and strengthen the vitality of a system, its ability to resist the destructive forces of external environment. T. Kuklinova (2007) defines development as a process that unfolds over time, with the transition from one state to another, which is characterized by a qualitative change in general or the appearance of new elements, properties, characteristics which determine the construction and operation of the system.

As for the economic category of "innovative development", it is one of the possible types of businesses, industries, economy. S. Illyashenko (2003) defines innovative development as process management, based on continuously found and used new methods and areas of potential enterprises in changing environmental conditions within a chosen mission and acceptable motivation associated with the modification of the existing and development of new markets.

L. Fedulova (2006) defines innovation economy in general as the growth of its performance at the expense of innovation projects and innovations.

Assessing the innovative development of food industry, we must note the apparent lag of the level of innovations, which puts the country in a serious dependence on imported high-tech products and technologies (Table 1).

The analysis of the dynamics of innovatively active enterprises in the food industry during 2008–2011 (Table 1) shows an increase from 2008 in the number of the firms that introduced innovations, and their share in food industry.

Table 1. Indicators of innovative activity of the food industry enterprises, 2008–2011

Indicators		2008	2009	2010	2011
The total number of enterprises in the food industry		2566	2594	2457	2383
Number of the enterprises engaged in innovations	Total	309	336	352	384
	% of the surveyed	12.1	12.9	14.33	16.11
	change compared to the previous year, %	-9.9	+8.7	+4.76	+9.09
Distribution of innovatively active enterprises (number / % of all)	internal research	19 / 6.1	15 / 4.5	16 / 4.55	19 / 4.95
	external research	19 / 6.1	19 / 5.7	10 / 2.84	13 / 3.39
	purchase of machinery, equipment and software	168 / 54.4	191 / 56.8	204 / 57.95	245 / 63.80
	other external knowledge	23 / 7.4	21 / 6.3	18 / 5.11	16 / 4.17
	education and training	26 / 8.4	53 / 15.8	43 / 12.22	63 / 16.41
	market innovations	20 / 6.5	22 / 6.5	21 / 5.97	30 / 7.81
	other	41 / 13.3	42 / 12.5	42 / 11.93	47 / 12.24
Number of the companies that implement innovations	food products, total	2566	2594	2457	2383
	innovative products (total / % of the amount that sell food products)	226 / 8.8	245 / 9.4	239 / 9.73	268 / 11.25
	innovative products from Ukraine (total / % of the number engaged in innovations)	34 / 11.0	43 / 12.8	49 / 13.92	59 / 15.36

Compiled by the author using the official site of the Alcohol and Liquor Industry "Ukrspirt" (2008–2011).

In 2011, 384 companies, or 16.11% of the total surveyed food companies were engaged in innovations in the food industry.

Analyzing the distribution of innovatively active enterprises in the areas of innovations found that most firms (54.4–63.80%) prefer the acquisition and application of machinery, equipment, and software facilitating speedy profit. However, in 2011, as compared with 2001–2007, the proportion of firms involved in R&D decreased – from 6.1 to 3.39%. Number of firms involved in market introduction of innovations (~ 7%) and other types of preproduction (~ 13%) did not change. The following trends have both positive and negative sides. On the one hand, there is an observed activation of innovative activities of large business that has financial capacity to carry out research and development, attract trained staff for marketing and advertising to promote their products at food markets. On the other hand, there is a number of businesses that direct funds to purchase "know-how" and the latest technologies for technological preparation of production.

Generally, we can note that the degree of innovation of enterprises is determined by the group of following factors:

- existing innovative potential;
- ability to adequately use it;
- society's need for the results of innovations.

The most important prerequisite for innovative development of the food industry is to improve the scientific, educational and industrial constituents of innovation potential. One of the significant indicators of innovative development is the willingness of companies to use innovative solutions in their operations. The demand for

innovation, both product and technology, is related to the need of modernization, technical re-equipment and reconstruction of existing enterprises. Modernization can be traced on the example of technical and technological re-equipment of the alcohol industry in 2012, which is a prerequisite for further innovative activities (Table 2).

Table 2. Re-equipment of vamping alcohol companies, 2012

Enterprise	BDP (columns)	The technology of low-temperature hydro-enzymatic treatment of raw starch	Installing recuperative heat exchangers	Implementation of energy saving GDP with elements that operate under vacuum	Steam injection of grout	Installing modern burners for boilers
Vinnytsia						
Barsky	3					
Bdzhilnanskyy	4				yes	
Berschadskyy	5	yes	yes		yes	
Gaysinsky	3				yes	implement
Martynivske	3 (4)				yes	
Nemirovsky	6+5	yes	yes		yes	
Ovechatskyy	3	yes	yes		yes	yes
Trostanetsky	4				yes	
Uladivskyy	3			yes	yes	
Chechelnitsky	3				yes	
Yurkovetskyy	3				yes	
Kyiv						
Tryliskyi	4					yes
Stadnytsky	3	yes	yes		yes	yes
Thorivskyy	3					yes
Chervonoslobodsky	5	yes	yes			yes
Lviv						
Borokskyy	3	yes	yes		yes	yes /boiler
Velyky	3				yes	yes /boiler
Voyutytkskyy	4					
Vuzlivskyy	4	yes			yes	yes
Lopatynskyi	5	yes	yes		yes	yes
Rava-Ruska	4	yes	yes		yes	
Storonybabskyy	4	yes		yes	yes	yes /boiler
Strutenskyy	3	implementation				
Suhodolskiy	4	yes			yes	yes /boiler
Ugersko Grain	3				yes	yes
Hnidzdychivskyy	4					yes
Sumy						
Dubovyazovskiy	5				yes	yes
Naumovskiy	3+4					yes
Novosuhinivskyy	3					yes
Popovskiy	4			yes	yes	
Stetskivskyy	4	implementation			yes	
Ternopil						
Borshchiv	6	yes	yes	yes		
Buchatskiy	3 (5)	yes				yes
Zalozetskyy	6	yes	yes			yes
Zarubynskyy	4					
Kolovolotskyy	5	yes	yes			

Continuation of Table 2

Enterprise	BDP (columns)	The technology of low-temperature hydro-enzymatic treatment of raw starch	Installing recuperative heat exchangers	Implementation of energy saving GIDP with elements that operate under vacuum	Steam injection of grout	Installing modern burners for boilers
Kovalivskiy	4	yes			yes	
Kozlivskyy	5	yes	yes	yes		yes
Marylivka	6	yes	yes	yes	yes	yes
Myshkovytskyy	4		yes			
Novosilka	4		yes	yes	yes	yes
Strusiv						
Chernivtsi						
Vashkivskyy	3					
Karapchivskyy						
Chernihiv						
Ichnyansky	3					
Kovalovskyy	4	yes	yes			
Kryskivskyy						
Novoborovytorskyy	4			yes	yes	
Holmyanskyy	5	implementation			yes	
Shabalynivskyy	3				yes	
Chemerskyy	3	implementation				
Rivne						
Zirnenskyy	4	renovation	yes			
Shpanivskyy	3	yes				yes
Others						
Andrushevsky	3 (6)					yes
Korostyshevska	4					yes
Lipnitsky	5	yes	yes	implementation	yes	
Chervonenckiy	3			implementation	yes	yes
Artemovsk	5		yes		yes	yes
Dublyansky	3					yes
Ivashkivskyy	4 (5)			yes	yes	
Karavansky	5		yes			yes
Vishnyakovska	3	development documents			yes	yes
Lohvitsky						
Zhovtnevy	3 (4)					
Malovyskivskyy						
Khorostkiv sugar-refineries	4				yes	boiler
Lutsk	3	yes	yes			yes
Dovzhotsky	4				yes	yes
Hannopilskyy		yes				yes
Manykovetskyy	3					
Zaluchans'ka	5					
Pidhaychykivskyy	5		yes			yes
Ivankovskoe	4	yes				yes
Kamensky	5			yes		
Kosarskyy	5	yes	yes	yes		
Luzhany	3(5)+3(4)					
Total	284(33)	25	23	12	35	34/5

Constructed by the author according to the «Ukrspirt» data.

The technology of low-temperature hydro-enzymatic treatment of starch contained raw is implemented by 25 enterprises, the recuperative heat exchangers are installed at 23 companies; energy-efficient rectification installation with the elements that operate under vacuum – 12 companies; steam injection of grout – 35 companies. Installing grout-distillation plant – 284 units at 75 plants.

Conclusions. The demand for innovation, both product and technology, is directly related to the need for modernization, technical re-equipment and reconstruction, which is a prerequisite for further development of the food industry. Technical and technological re-equipment of the alcohol industry in 2012 made a good background for further innovations.

Prospects for further research. Further research will be aimed at finding the most efficient ways to provide innovative development of the food industry.

References:

- Антикризисное управление: Учебник / Под ред. Э.М. Короткова. – М.: ИНФРА, 2003. – 432 с.
- Антонюк Л.Л., Поручник А.М., Савчук В.С. Інновації: теорія, механізм розробки та комерціалізації: Монографія. – К.: КНЕУ, 2003. – 394 с.
- Бутнік-Сіверський О.Б., Красовська А. Теоретичні засади інтелектуальної інноваційної діяльності на підприємстві // Економіка України.– 2004.– №12. – С. 31–37.
- Геєць В.М., Семиноженко В.П. Інноваційні перспективи України. – Харків: Константа, 2006. – 272 с.
- Глазьев С.Ю. Теория долгосрочного технико-экономического развития. – М.: Владар, 1993. – 310 с.
- Дані // Державне підприємство спиртової та лікеро-горілчаної промисловості «Укрспирт» // www.ukrspirt.com.
- Дикань В.Л., Зубенко В.О. Забезпечення ефективності інноваційної діяльності підприємств залізничного транспорту: Монографія. – Х.: УкрДАЗТ, 2008. – 193 с.
- Іляшенко С.М. Управління інноваційним розвитком: проблеми, концепції, методи: Навч. посібник. – Суми: Університетська книга, 2003. – 278 с.
- Краснокутська Н.В. Інноваційний менеджмент: Навч. посібник. – К.: КНЕУ, 2003. – 502 с.
- Куклінова Т.В. Розвиток малих та середніх підприємств: проблеми аналізу та ефективності // Вісник Хмельницького національного університету.– Секція: Економічні науки.– 2007.– №4, Т. 1. – С. 193–196.
- Малышева Т.А. Инновационная активность и инновационная восприимчивость организации // Материалы IX Международной научно-методической конференции / Под ред. А.Н. Андреева. – Пенза: Пензенский филиал РГУИПП, 2011. – Т. 1: Экономика, инновации и менеджмент. – С. 137–139.
- Наукова та інноваційна діяльність в Україні, 2011: Стат. збірник / Державний комітет статистики України. – К., 2012. – 305 с.
- Поповенко Н.С. Инновационный менеджмент: Учеб. пособие для студ. вузов / Одесский гос. политехнический ун-т; Высшая школа делового администрирования; Н.С. Поповенко (ред.), Е.А. Бельрюкова (ред.). – Одесса, 1999. – 194 с.
- Санто Б. Сила инновационного саморазвития // Инновации.– 2004.– №2. – С. 6–15.
- Фатхутдинов Р.А. Инновационный менеджмент: Учебник. – 4-е изд., перераб. и доп. – СПб.: Питер, 2004. – 400 с.
- Федулова Л.І. Інноваційна економіка: Підручник. – К.: Либідь, 2006. – 480 с.
- Черванов Д.М. Менеджмент інвестиційної діяльності підприємств: Навч. посібник. – К.: Знання-Прес, 2003. – 622 с.
- Шумпетер Й.А. Теория экономического развития ; капитализм, социализм и демократия / Пер. с нем., англ. В.С. Автономов. – М.: Эксмо, 2008. – 863 с.
- Zimmermann, H.-J. (1987). Fuzzy Sets, Decision Making, and Expert Systems. Boston: Kluwer Academic Publishers.

Стаття надійшла до редакції 14.03.2013.