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## MANAGEMENT MODELS FOR PHARMACEUTICAL COMPANIES WITHIN THE COMPETITIVE ENVIRONMENT

*The basic methods of strategic management at pharmaceutical companies within the competition environment are presented in the paper. Organizational mechanisms of management are described and a management model for a pharmaceutical company is developed. The map of target development of a pharmaceutical company is formed.*

*Keywords: competitiveness; management mechanism; management model; pharmaceutical market; competitive environment.*

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## МОДЕЛІ УПРАВЛІННЯ ФАРМАЦЕВТИЧНИМИ ПІДПРИЄМСТВАМИ В УМОВАХ КОНКУРЕНТНОГО СЕРЕДОВИЩА

*У статті представлено основні методи стратегічного управління фармацевтичними підприємствами в умовах конкурентного середовища. Описано організаційний механізм управління і розроблено модель управління фармацевтичним підприємством. Сформовано карту цільового розвитку фармацевтичного підприємства.*

*Ключові слова: конкурентоспроможність; механізм управління; моделі управління; фармацевтичний ринок; конкурентне середовище.*

*Рис. 2. Табл. 3. Літ. 11.*

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## МОДЕЛИ УПРАВЛЕНИЯ ФАРМАЦЕВТИЧЕСКИМИ ПРЕДПРИЯТИЯМИ В УСЛОВИЯХ КОНКУРЕНТНОЙ СРЕДЫ

*В статье представлены основные методы стратегического управления фармацевтическими предприятиями в условиях конкурентной среды. Описан организационный механизм управления и разработана модель управления фармацевтическим предприятием. Сформирована карта целевого развития фармацевтического предприятия.*

*Ключевые слова: конкурентоспособность; механизм управления; модели управления; фармацевтический рынок; конкурентная среда.*

**Problem statement.** In the current economic conditions, the main vector of management points to the competitiveness of the pharmaceutical industry, the activities of which are strongly dependent on external economic, innovative, scientific, technological and other processes. Today, the management models of pharmaceutical companies need to be adapted to dynamic competitive environment conditioned by the complexities of insufficient functional, organizational, informational and resource provision.

**Recent research and publications analysis.** The issues of management of pharmaceutical companies in the competitive environment were dealt by such researchers as S.O. Elsinovska (2009), B.K. Kazbekov (2002), G.V. Obolentseva, G.V. Litvinenko et al. (1999), G.A. Taspnova (2010) etc. However, the unsolved issues remain, namely: the development of models of management, strategic analysis, selection of promising

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activities, formation of the system of objectives for pharmaceutical companies under competitive environment.

**Research objectives.** The objectives of this paper are to analyze the competitive environment of development of pharmaceutical companies in the Republic of Kazakhstan and to construct a management model for pharmaceutical companies within the competitive environment.

**Key research findings.** The pharmaceutical market is one of the most developed sectors of Kazakhstan's economy.

The pharmaceutical industry is represented by 80 companies, including the most developed companies such as JSC "Chimpharm", "JV GlobalPharm", JSC "Nobel AFF," pharmaceutical companies "Romat", LLP "Nur-Mai Pharm", "Karaganda Pharmaceutical Complex", producing together more than 80% of pharmaceutical products in the Republic (Pharmaceutical Sector). The capacity of the domestic pharmaceutical market was growing from 88930 bln KZT to 136,019 bln KZT during 2008–2012, and the volume of production increased by 6600 mln KZT (Table 1).

*Table 1. Development of Pharmaceutical Market in the Republic of Kazakhstan (RK) during 2008–2012*

Indicators	Years					Absolute deviation ( $\pm$ )
	2008	2009	2010	2011	2012	
Capacity of the domestic market, bln KZT	88930	95155	104671	118278	136019	47089
Production volume, mln KZT	10090	10257	11524	13563	16690	6600
Share of domestic companies at the domestic market, %	11.3	10.8	11	11.4	11.8	0.5
Pharmaceutical market, mln packs	641.3	514.5	484.4	481.2	478.5	-163

Summarized by the author based on (Marzylovykh et al.; Pharmaceutical Market; Pharmaceutical Sector).

Today, development specifics of pharmaceutical companies' competition of RK is quite complex, since the external market imposes strict conditions of competition. The sales' share of products of domestic pharmaceutical companies in the RK internal market is only 11.8%. The rest of pharmaceutical products are exported, mainly to the CIS, in particular to Uzbekistan, Kyrgyzstan, Ukraine, Georgia, Armenia and others.

Accordingly, the greatest share of the RK pharmaceutical market is worked up by such companies as "Sanofi-Aventis" (5.0%), "Schering Pharma" (4.2%), "Nycomed Pharma AS", JC "Himfarm", "Glaxosmithkline", "Gedeon Rixter" and others (Pharmaceutical Sector), almost all being foreign corporations.

In the conditions of insufficient development of the current regulatory framework, services of registration and testing of drugs, lack of containment of imported medicines the traditional methods of competition are ineffective. Pharmaceutical companies are facing new challenges affecting the management systems of these companies, as listed in Table 2.

Promising areas of pharmaceutical companies' management include: the growth of market share of companies, improving the quality of medicines through the use of domestic raw materials, improving production technologies and developing new ways of medications' trade.

**Table 2. External Environment Factors Affecting Management System of RK Pharmaceutical Companies**

#	Trends at the external market	New challenges to management
1	Significant growth of the pharmaceutical market (3–12% of annual growth)	Minor market share of domestic companies (11–12% of the market)
2	Large volumes of public procurement of pharmaceuticals	–
3	Reduced need to consume cheap drugs	Orientation of RK pharmaceutical companies for cheap pharmaceuticals and the use of foreign materials
4	Growth in export volumes of pharmaceuticals	High expenses on improving the quality of pharmaceutical products
5	Significant concentration of large companies at pharmaceutical market	Need to improve the provision of services and the use of PR-technologies
6	Development of large network pharmaceutical companies	Need to save costs and consolidate networks of companies' sales
7	Marketing activities in the industry	Need to develop e-commerce of drugs

Summarized by the author based on (Marzylovych et al.; Pharmaceutical Market; Pharmaceutical Sector).

The latest practical models of business management are: the innovation model characterized by a minimal amount of formal rules and regulations, the entrepreneurial model characterized by management structure and powers separation; the bureaucratic model formed on a rigid linear-functional management structure; the command model characterized by the unity of command authority and managerial decision-making; and the process model characterized by horizontal management (by processes) and the assessment of implementation of these processes (Bubnov). The activities of the pharmaceutical companies rely heavily on entrepreneurial, bureaucratic and management models.

The current pharmaceutical companies' management models are not perfect and do not contain the system mechanisms of interaction with the environment, they are focused mainly on operational management and on the control of their own production resources. This greatly reduces the chances of pharmaceutical companies. Improving the pharmaceutical company's management models should be focused on the development and involvement of external resources in the company's activities, see Figure 1.

Pharmaceutical company's management model in a competitive environment is shown in Figure 2.

Institutional mechanisms for managing pharmaceutical companies must rely on regulatory, resource, information and organizational support. In this case, manufacturing process and competitive advantages should become the object of control for a pharmaceutical company. Management system must be implemented at long-term, medium-term and operational levels. In current practice, the following models of efficiency estimate can be applied to evaluate the effectiveness of pharmaceutical companies: aggregate data analysis, the model of measuring achievements, Balanced Scorecard, SSP Meisel model, Efficiency Pyramid, ER2M Model, JIK Model (Various Models...). To realize efficiently the model of management of pharmaceutical companies it's necessary to form a map of target development of pharmaceutical companies to determine planned and actual parameters of the target and providing company management system, see Table 3.

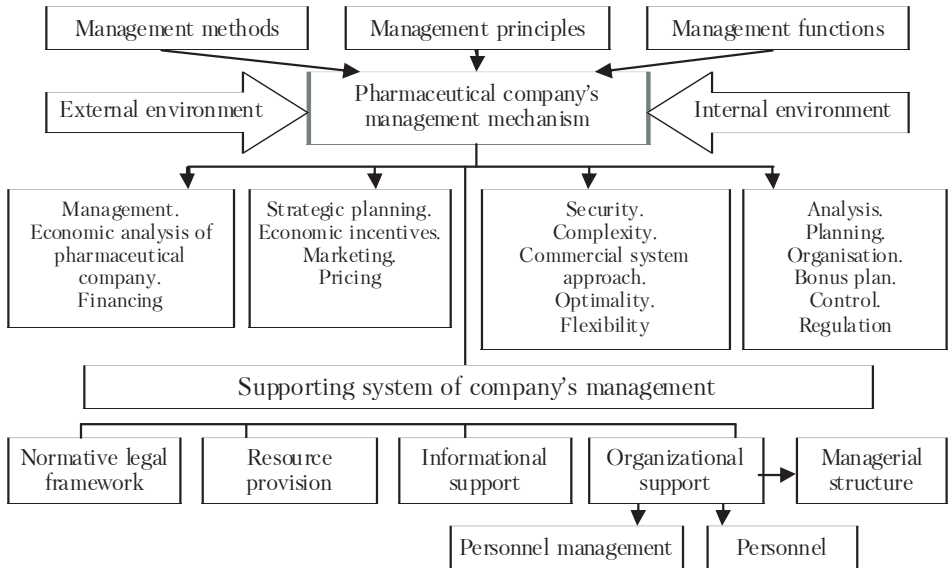


Figure 1. Structure of Mechanism of Pharmaceutical Company's Organizational Management, composed by the author based on (Elsinovskaya, 2009; Raevneva, 2006; Taspnova, 2010)

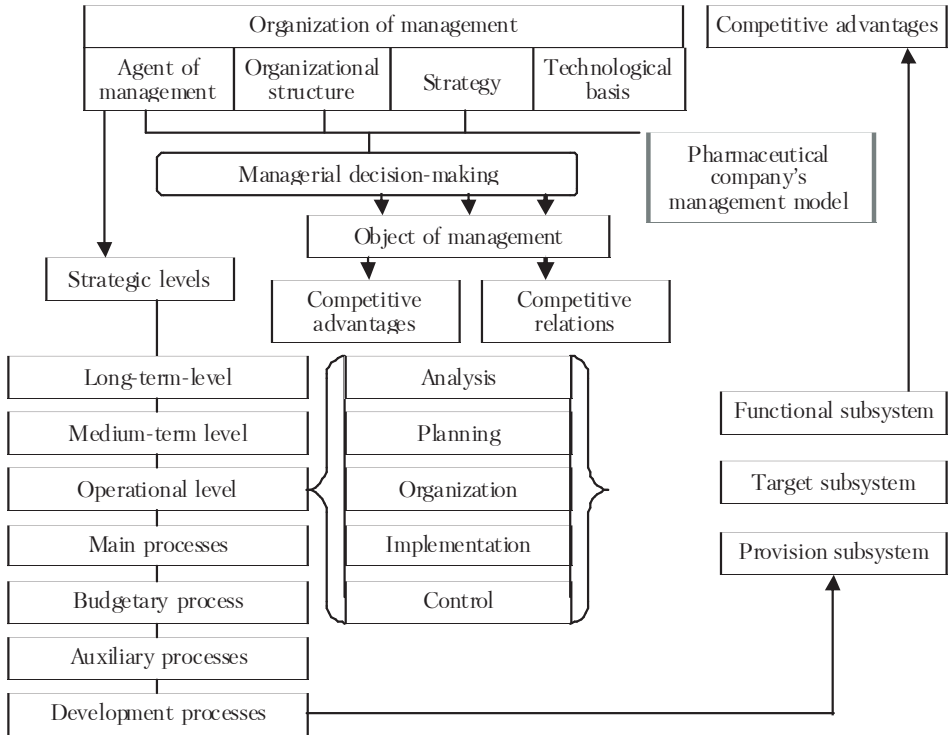


Figure 2. Pharmaceutical Company's Management Model in Competitive Environment, developed by the author

**Table 3. Map of Target Development of Pharmaceutical Company, developed by the author**

		Target subsystem of pharmaceutical company			
		1	2	3	4
Subsystem providing the development of pharmaceutical company		Growth of company's market share	Drug quality improvement	Production technology improvement	Development of new ways of medications' trading
1	Regulatory support	Fact / Plan	Fact / Plan	Fact / Plan	Fact / Plan
2	Resourcing	Fact / Plan	Fact / Plan	Fact / Plan	Fact / Plan
3	Information Support	Fact / Plan	Fact / Plan	Fact / Plan	Fact / Plan
4	Organizational support	Fact / Plan	Fact / Plan	Fact / Plan	Fact / Plan

The most important target subsystem of pharmaceutical companies' management is improving the medications' quality achieved through the introduction of advanced production technology, the application of modern methods of drugs' quality control, involvement of highly skilled personnel into production processes, improvement of the quality management system in companies etc.

**Conclusions.** Companies of the RK pharmaceutical sector operate in a difficult competitive environment that needs the improved system and the methods of their management focused on the growing market share, improved product quality, improved production technology, developing new ways of medications' trade. The proposed model of pharmaceutical company's management allows implementing the effective mechanism to strengthen the position of pharmaceutical companies under competition and the worked out map of target development of a pharmaceutical company allows determining main target directions of development, their legal, resource, informational and organizational support, as well as forming the planned development targets and their comparing with actual values.

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Стаття надійшла до редакції 31.08.2013.