

UDC 378.014.54

**Kryvytska O.**

*Doctor of Economics, Assistant Professor,  
National University of Ostroh Academy, Ukraine;  
e-mail: olha.kryvytska@oa.edu.ua; ORCID ID: 0000-0002-0844-3362*

**Doroshenko H.**

*Doctor of Economics, Professor,  
V. N. Karazin Kharkiv National University, Ukraine;  
e-mail: anyadoroshenkonew@gmail.com; ORCID ID: 0000-0002-5535-8494*

**Babych D.**

*Doctor of Economics, Professor,  
V. N. Karazin Kharkiv National University, Ukraine  
e-mail: S.N.Babych@gmail.com; ORCID ID: 0000-0002-0709-8333*

**Krykun O.**

*Ph. D. in Economics, Associate Professor,  
V. N. Karazin Kharkiv National University, Ukraine;  
e-mail: krikun@karazin.ua; ORCID ID: 0000-0002-0330-5710*

**Kovalchuk V.**

*Senior lecturer,  
National University of Ostroh Academy, Ukraine,  
e-mail: vitalii.kovalchuk@oa.edu.ua; ORCID ID: 0000-0001-6041-6217*

## THE FINANCIAL COMPONENT OF THE COMMUNICATION MANAGEMENT STRATEGY IN HIGHER EDUCATION INSTITUTIONS

**Abstract.** The article defines the role of the financial component of the communication management strategy in HEIs based on the construction of the algorithm for optimizing the distribution of costs for communication processes and the construction of the financial mechanism of communication management. Communication processes in HEIs have a number of specific features due to the fact that a large number of people and groups of people with different levels of education, level of intelligence, age, upbringing and interests take part in the communication process. That is, effective communication management of HEIs requires from the management of institutions to develop a management strategy that would satisfy the interests of all groups of communication process participants. It has been emphasized that the communication management strategy in HEIs should be developed for the long term taking into account the conditions of the changing external environment, and have the goal to continuously transmit information to employers, applicants, their parents, and the whole society in order to make the services of institutions attractive to the target audience and have feedback which would allow monitoring the quality of communication processes and have an economic effect from their implementation. It has been noted that one of the main components of the communication management strategy in HEIs is finance. An algorithm has been built to optimize the costs of managing communication in HEIs based on the use of the classical method of mathematical nonlinear programming problems optimization. A financial mechanism for managing communication in HEIs has been built, which is a system of measures aimed at achieving a certain level of communication processes management while maintaining a certain level of financial stability and independence. It has been concluded that the financial component of the communication management strategy in HEIs is one of its main elements, which allows constant increasing the level of institutions competitiveness and the quality of education as well as scientific and technical potential.

**Keywords:** financial component, communication, management strategy, costs, algorithm, mechanism, higher education institutions.

Formulas: 11; fig.: 2; tabl.:1; bibl.: 15.

**Кривицька О. Р.**

доктор економічних наук, доцент,  
Національний університет «Острозька академія», Україна;  
e-mail: olha.kryvytska@oa.edu.ua; ORCID ID: 0000-0002-0844-3362

**Дорошенко Г. О.**

доктор економічних наук, професор,  
Харківський національний університет імені В. Н. Каразіна, Україна;  
e-mail: anyadoroshenkonew@gmail.com; ORCID ID: 0000-0002-5535-8494

**Бабиш Д. В.**

доктор економічних наук, професор,  
Харківський національний університет імені В. Н. Каразіна, Україна,  
e-mail: S.N.Babych@gmail.com; ORCID ID: 0000-0002-0709-8333

**Крикун О. О.**

кандидат економічних наук, доцент,  
Харківський національний університет імені В. Н. Каразіна, Україна;  
e-mail: krikun@karazin.ua; ORCID ID: 0000-0002-0330-5710

**Ковальчук В. М.**

старший викладач,  
Національний університет «Острозька академія», Україна;  
e-mail: vitalii.kovalchuk@oa.edu.ua; ORCID ID: 0000-0001-6041-6217

## **ФІНАНСОВА СКЛАДОВА СТРАТЕГІЇ УПРАВЛІННЯ КОМУНІКАЦІЯМИ У ЗАКЛАДАХ ВИЩОЇ ОСВІТИ**

**Анотація.** Визначено роль фінансової складової стратегії управління комунікаціями в закладах вищої освіти (ЗВО) на основі побудови алгоритму оптимізації розподілу витрат на комунікаційні процеси і побудови фінансового механізму управління комунікаціями. Комунікаційні процеси у ЗВО мають свої специфічні риси, які зумовлені тим, що в комунікаційному процесі беруть участь велика кількість осіб і груп осіб із різним рівнем освіти, рівнем інтелекту, віку, виховання та інтересів. Тобто ефективне управління комунікаціями у ЗВО вимагає від менеджменту закладів розроблено стратегії управління, яка б задовольняла інтереси всіх груп учасників комунікаційного процесу. Акцентовано увагу, що стратегія управління комунікаціями у ЗВО повинна розроблятися на довгострокову перспективу, але при урахуванні умов мінливого зовнішнього середовища, і мати на меті здійснювати постійне передавання інформації роботодавцям, абітурієнтам, їхнім батькам, усьому суспільству з метою зробити послуги закладів привабливими для цільової аудиторії та мати зворотний зв'язок, який би дозволяв проводити моніторинг щодо якості комунікаційних процесів і мати економічний ефект від їх здійснення. Зазначено, що однією з головних компонент стратегії управління комунікаціями у ЗВО є фінанси. Побудовано алгоритм оптимізації витрат на управління комунікаціями у ЗВО на основі застосування класичного методу оптимізації задач математичного нелінійного програмування. Побудовано фінансовий механізм управління комунікаціями у ЗВО, який є системою заходів, спрямованих на досягнення певного рівня управління комунікаційними процесами за умови збереження певного рівня фінансової стійкості та незалежності. Зроблено висновок, що фінансова складова стратегії управління комунікаціями у ЗВО є одним із головних її елементів, який дозволяє постійно підвищувати рівень конкурентоспроможності закладів, якості освіти і постійно нарощувати свій науково-технічний потенціал.

**Ключові слова:** фінансова складова, комунікації, стратегія управління, витрати, алгоритм, механізм, заклади вищої освіти.

Формул: 11; рис.: 2; табл.: 1; бібл.: 15.

**Introduction.** The integration of Ukraine into the world and European community requires new approaches to educational processes and forms and methods of their management. Today, in

the face of fierce competition in the higher education market, effective communication management is becoming increasingly important. That is, the development and implementation of a communication management strategy in HEIs in Ukraine is becoming more and more significant. It should take into account the interests of all participants in the higher education market and contribute to the knowledge of the laws and phenomena of the material world for socio-economic development and their use for the needs of society.

**Literature analysis and problem statement.** A lot of attention has been paid to the problems of communication development by both scientists and practitioners. The studies of O. Bratko [1], N. Drahomyretska [2], T. Prymak [3], A. Chichanovsky [4], N. Yaloveha [5] and others deserve special attention. The issues of communication management in HEIs have been considered in the scientific works of V. Berezenko [6], I. Gryshchenko [7], I. Deinega [8], L. Kalashnikova [9], L. Yashchenko [10] and others.

However, despite the significant contribution of these authors, the questions of the financial strategy for managing communications in HEIs which is one of the main elements of management and an effective tool for motivating communication processes in the field of higher education remain open.

**The purpose** of the study is to determine the role of the financial component of the communication management strategy in HEIs based on the construction of an algorithm for optimizing the distribution of costs for communication processes and building a financial mechanism for communication management.

**Research outcomes.** In modern conditions, the development of HEIs should be based on the application of the strategic management principles, the implementation of which, under certain conditions and efforts made, will enable them to withstand the competition for access to economic resources and minimize the risks associated with the negative impact of both internal and external environment.

The internal environment of HEIs, being a reflection of its strategic potential, is formed under the influence of various factors: the chosen strategy, peculiarities of management technology, market environment, size of the organization, knowledge and experience of management, etc. [11].

For HEIs, the external environment is government agencies, the macroeconomic environment, educational services market, competitors (other HEIs), consumers, public organizations [12].

It is difficult to overestimate the role of communication for the strategic management of HEIs. It is of great importance for each of the educational activities of the institution. That is, high-quality communication management today provides certain opportunities for the institution in the direction of improving the quality of education and the financial condition, motivating scientific and pedagogical staff, improving the image of the institution, developing innovative activities, and the like.

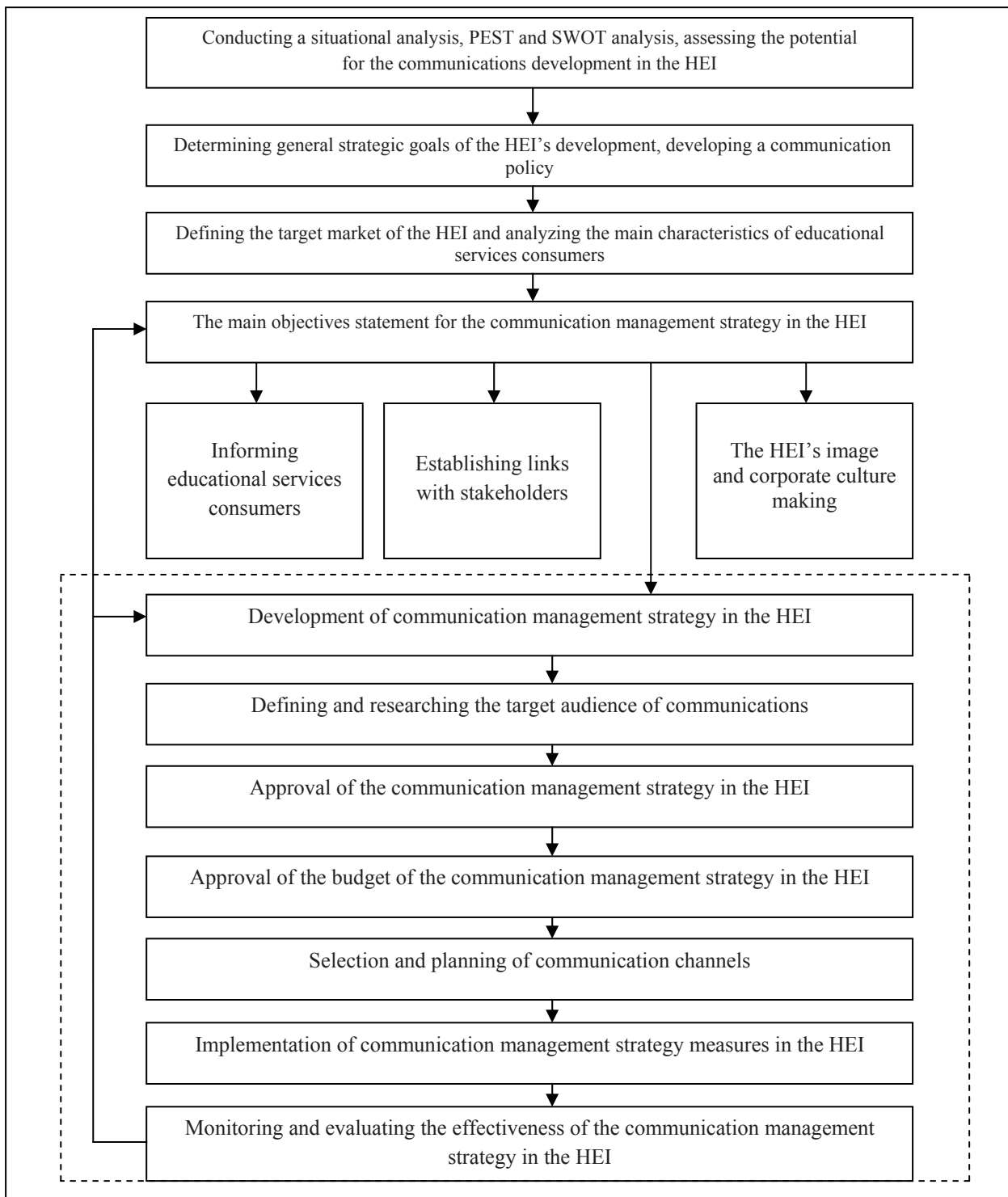
In a general sense, communication is a process of two-way exchange of ideas and information that leads to mutual understanding. In the process of communication, information is transferred from one subject to another. Subjects can be individuals, groups, or even organizations.

Typically, communication as a process of information exchange between people (or organizations) has three aspects that have a significant impact on management:

- communication as a process that covers all the levels in the socio-economic system and affects its structure;
- communication, as the interaction of the leader with subordinates or a group of subordinates;
- communication, as a specific function of management, which aims at transmitting and exchanging information in society and has a significant impact on it.

Communication processes in HEIs have a number of specific features due to the fact that a large number of people and groups of people with different levels of education, level of intelligence, age, upbringing and interests take part in the communication process. That is, effective communication management of HEIs requires from the management of institutions to develop

a management strategy that would satisfy the interests of all groups of communication process participants. The communication management strategy in HEIs should be developed for the long term taking into account the conditions of the changing external environment, and have the goal to continuously transmit information to employers, applicants, their parents, and the whole society in order to make the services of institutions attractive to the target audience and have feedback which would allow monitoring the quality of communication processes and have an economic effect from their implementation (Fig. 1).



**Fig. 1. Communication management strategy measures in HEIs (developed by the authors)**

The main types of HEIs' communication activities to attract potential applicants include advertising, media, career guidance, Internet, distribution of free booklets, other communication activities.

Nowadays, the issues of using various types of communications directly in the provision of educational services are of great relevance. HEIs use the Moodle system; digital repositories; Zoom, Teams, and WebEx systems; Internet; mobile applications Viber, WhatsApp, Telegram, etc. All this allows developing communication processes in HEIs and contributes to the involvement of scientific and pedagogical staff and students in interactive teaching methods and the development of digital technologies.

One of the main components of the communication management strategy in HEIs is finance. That is, the number of students, the quality of education, and the overall economic efficiency of HEIs depend on the communication management strategy budget. That is, high-quality and well-grounded cost management for communication processes in HEIs will make it possible to formulate proposals for improving the activities HEIs, in particular, commodity, price, educational, innovative and other activities.

Determining the budget for communications is one of the most difficult tasks for university management. In general, there are four main methods of drawing up such a budget [13]: 1. The method of goals and objectives; 2. The method of assessing opportunities (allocation of a specific amount of funds); 3. The method of interest on sales; 4. The method of competitive parity. In general, the budget for the communication costs of HEIs can be calculated as follows:

$$S = \frac{y_{p_i} \cdot Q_i \cdot D_{p_i} \cdot S_k}{D_{p_k}}, \quad (1)$$

where  $y_{p_i}$  — the share of costs for communications of the  $i$ -th HEI from the volume of educational services;

$Q_i$  — the volume of providing educational services of the  $i$ -th HEI, UAH;

$D_{p_i}, D_{p_k}$  — the market share of higher education of the  $i$ -th HEI and the  $k$ -th competitors;

$S_k$  — competitors' communication costs.

In general, the level of communication management efficiency in HEIs can be expressed as:

$$E_K = \frac{Lp}{C_c}, \quad (2)$$

where  $Lp$  — the HEI's popularity level;

$C_c$  — communication costs.

Or:

$$E_K = \frac{Pg - C_c}{C_c}, \quad (3)$$

where  $P_g$  — the HEI's gross profit from the provision of educational services.

It is proposed to optimize the costs of managing communications in HEIs based on the application of the classical method of mathematical nonlinear programming problems optimization [14; 15].

Lets us build an algorithm for optimizing the costs of communication management in HEIs.

We assume that:

$X_1, \dots, X_4$  — corresponding costs for communication types, UAH (*Table*);

$D_1, \dots, D_4$  — net added income received through the use of the appropriate type of communications, UAH;

$D$  — net added income received from the use of communications, UAH;

$B$  — the HEI's budget for communications, UAH.

**Increasing the level of HEIs' income through communication management**

Encoding the type of communication	The main types of HEI's communication	Increasing the level of income through the use of communications, %
$X_1$	Career guidance work	35—55
$X_2$	Advertising	20—50
$X_3$	Internet	30—40
$X_4$	Other communication activities	30—50

Further, the following function, which can be considered a synergistic effect from the use of all the HEI's communication types can be compiled:

$$E = \frac{D_1}{X_1} + \frac{D_2}{X_2} + \frac{D_3}{X_3} + \frac{D_4}{X_4} \rightarrow \max, \quad (4)$$

Next, let us determine the increase in the level of the HEI's income separately for each type of communications.

1.  $D_1$  — income received from career guidance work:

$$D_1 = 0,45 \cdot D. \quad (5)$$

2.  $D_2$  — income received from advertising:

$$D_2 = 0,35 \cdot D. \quad (6)$$

3.  $D_3$  — income received from the Internet:

$$D_3 = 0,35 \cdot D. \quad (7)$$

4.  $D_4$  — income received from other communication activities:

$$D_4 = 0,40 \cdot D. \quad (8)$$

When applying this method, the main limitation in this system is the budget allocated by the HEI for communications. —  $B$ :

$$X_1 + X_2 + X_3 + X_4 = B. \quad (9)$$

That is, as can be seen from the above expression, the total cost of each separate type of communications must be a predetermined budget. In addition, it must be borne in mind that costs cannot be negative, so the cost indicators must be greater than or equal to zero. According to the problem posed, the objective function with constraints is as follows:

$$\begin{cases} X_1 + X_2 + X_3 + X_4 = B; \\ X_i \geq 0; \\ i = \overline{1; 4}. \end{cases} \quad (10)$$

Let us solve the problem using the method of Lagrange multipliers. The Lagrange function will look like this:

$$L(X_1 + X_2 + X_3 + X_4, \lambda) = \frac{D_1}{X_1} + \frac{D_2}{X_2} + \frac{D_3}{X_3} + \frac{D_4}{X_4} + \lambda(B - (X_1 + X_2 + X_3 + X_4)). \quad (11)$$

Thus, the proposed algorithm for optimizing the costs of communication management at HEIs is easy to use and helps to determine the synergistic effect of using all types of communications at a HEI.

The financial component of the communication management strategy at HEIs is one of its main elements, which will increase the level of competitiveness and the quality of education and make it possible to constantly increase its scientific and technical potential. In this regard, there is an urgent need to build a financial mechanism for managing communications in HEIs (*Fig. 2*).

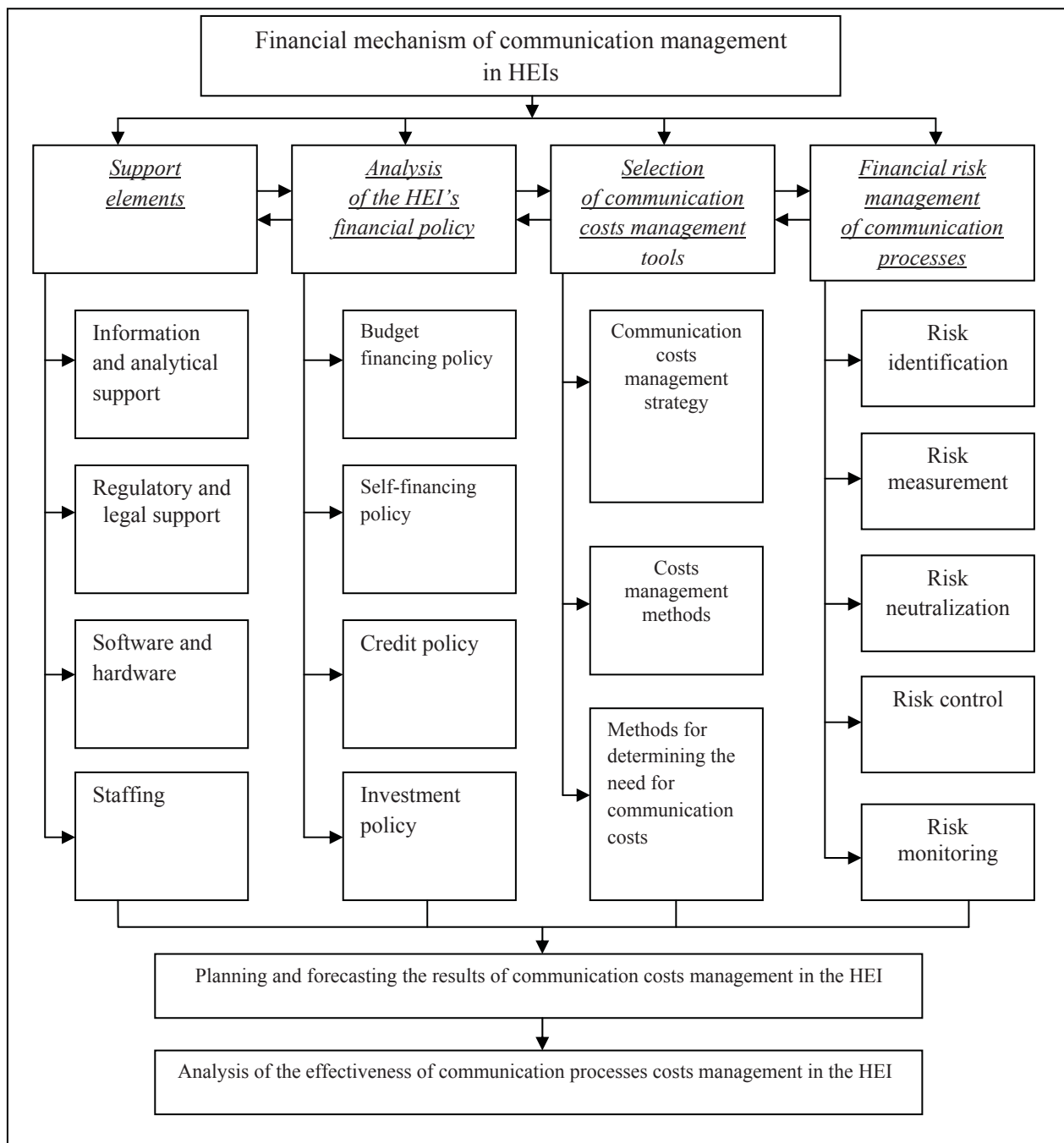


Fig. 2. **Financial mechanism of communication management in HEIs** (developed by the authors)

The financial mechanism of communication management in HEIs is a system of measures aimed at achieving a certain level of communication processes management while maintaining a certain level of financial stability and independence. Such a system of measures requires constant monitoring of all the financial strategy areas of the institution. At the same time, the financial mechanism for managing communications in HEIs involves the search, attraction and effective use of financial resources based on modern principles and methods of financial management and the forms of their influence on the development of HEIs.

**Conclusions.** As a result of the study, an algorithm has been built for optimizing the costs of communication management at HEIs, which is easy to use and helps to determine the synergistic effect of using all communication types at HEIs.

It has been concluded that the financial component of the communication management strategy in HEIs is one of its main elements, which allows constant increasing the level of HEIs'

competitiveness as well as the quality of education and their scientific and technical potential. A financial mechanism for managing communications in HEIs has been built, which is considered a system of measures aimed at achieving a certain level of communication management while maintaining a certain level of financial indicators.

#### Література

1. Братко О. С. Маркетингова політика комунікацій : навч. посібник. Тернопіль : Карт-бланш, 2006. 275 с.
2. Драгомирецька Н. М. Сучасні тенденції комунікацій у сучасному світі. *Публічне урядування* : збірник. Київ : ДП Видавничий дім «Персонал», 2015. № 1 (1). С. 85—97.
3. Примак Т. О. Маркетингові комунікації на сучасному ринку : навч. посібник. Київ : МАУП, 2003. 200 с.
4. Чічановський А. А., Старіш О. Г. Інформаційні процеси в структурі світових комунікаційних систем : підручник. Київ : Грамота, 2010. 568 с.
5. Яловега Н. І. Формування системи маркетингових комунікацій на підприємствах споживчої кооперації : дис. ... канд. екон. наук : 08.00.04. Полтава : РВВ ПУСКУ, 2008. 268 с.
6. Березенко В. PR освітньої галузі в сучасній комунікаційній парадигмі. *Держава та регіони. Соціальні комунікації*. 2010. № 1. С. 111—115.
7. Грищенко І. М., Крахмальова Н. А. Інструменти та форми маркетингової комунікації на ринку освітніх послуг. *Ефективність організаційно-економічного механізму інноваційного розвитку вищої освіти України*. Київ : Вісник КНУТД, 2012. № 4. С. 298—307.
8. Дейнега І. О. Комунікації на ринку освітніх послуг: загальне та специфічне. *Економіка і суспільство*. 2016. № 7. С. 279—284.
9. Калашнікова Л. В. Інтернет-сайти вищих навчальних закладів як інноваційні канали комунікацій в умовах формування інформаційного суспільства України : дис. ... канд. соціол. наук. Харків, 2005. 175 с.
10. Ященко Е. М. Формування комунікативної культури студентів в контексті глобальної парадигми політики вищої освіти // Проблеми та перспективи наук в умовах глобалізації : матеріали V Всеукр. наук. конф. Тернопіль, 2009. Ч. 1 : Педагогіка, психологія, мовознавство.
11. Войнарченко М. П., Валькова Н. В. Суспільно-економічний прояв автономії університетів у перспективі розвитку вищої освіти. *Вісник КНУТД*. 2012. № 4. С. 411—414.
12. Крахмальова Н. А. Ефективність маркетингових комунікацій у сфері вищої освіти. *Вища освіта*. 2014. № 1. С. 171—174.
13. Бельй А. П., Лысенко Ю. Г., Мадых А. А. и др. Комплексные оценки в системе управления предприятием / под общ. ред. Ю. Г. Лысенко. Донецк : ООО «Юго-Восток, Лтд», 2013. 120 с.
14. Кучма М. І. Математичне програмування: приклади і задачі : навч. посібник. Львів : «Новий Світ-2000», 2007. 344 с.
15. Наконечний С. І., Гвоздецька Л. В. Збірник задач з курсу «Математичне програмування» : навч. посібник. Київ : ICOT, 1996. 288 с.

Статтю рекомендовано до друку 25.01.2021

© Кривицька О. Р., Дорошенко Г. О., Бабич Д. В., Крикун О. О., Ковальчук В. М.

#### References

1. Bratko, O. S. (2006). *Marketing policy of communications*. Ternopil: Kart-blansh [in Ukrainian].
2. Drahomyretska, N. M. (2015). *Suchasni tendentsii komunikatsii u suchasnomu sviti* [Modern trends in communications in the modern world]. *Publichne uriaduvannia — Public Governance*, 1 (1), 85—97. Kyiv: DP Vydavnychiy dim «Personal» [in Ukrainian].
3. Prymak, T. O. (2003). *Marketing communications in the modern market*. Kyiv: MAUP [in Ukrainian].
4. Chichanovskiy, A. A., & Starish, O. H. (2010). *Informatsiini protsesy v strukturі svitovykh komunikatsiinykh system* [Information processes in the structure of world communication systems]. Kyiv: Hramota [in Ukrainian].
5. Yaloveha, N. I. (2008). *Formuvannya systemy marketingovykh komunikatsii na pidpriemstvakh spozhyvchoi kooperatsii* [Formation of the system of marketing communications at the enterprises of consumer cooperation]. *Candidate's thesis*. Poltava: RVV PUSKU [in Ukrainian].
6. Berezenko, V. (2010). *PR osvithnoi haluzi v suchasni komunikatsiini paradyhmi* [PR of the educational sector in the modern communication paradigm]. *Derzhava ta rehiony. Sotsialni komunikatsii — State and regions. Social communications*, 1, 111—115 [in Ukrainian].
7. Hryshchenko, I. M., & Krakhmalova, N. A. (2012). *Instrumenty ta formy marketingovoi komunikatsii na rynku osvitnikh posluh* [Tools and forms of marketing communication in the market of educational services]. *Efektivnist orhanizatsiino-ekonomichnoho mekhanizmu innovatsiynoho rozvytku vyshchoi osvity Ukrainy — The effectiveness of the organizational and economic mechanism of innovative development of higher education in Ukraine*, 4, 298—307. Kyiv: Visnyk KNUTD [in Ukrainian].
8. Deineha, I. O. (2016). *Komunikatsii na rynku osvitnikh posluh: zahalne ta spetsyfychnе* [Communications in the market of educational services: general and specific]. *Ekonomika i suspilstvo — Economy and Society*, 7, 279—284 [in Ukrainian].
9. Kalashnikova, L. V. (2005). *Internet-saity vyshchyykh navchalnykh zakladiv yak innovatsiini kanaly komunikatsii v umovakh formuvannya informatsiynoho suspilstva Ukrainy* [Internet sites of higher educational institutions as innovative channels of communication in the conditions of formation of the information society of Ukraine]. *Candidate's thesis*. Kharkiv [in Ukrainian].
10. Yashchenko, E. M. (2009). *Formuvannya komunikativnoi kultury studentiv v konteksti hlobalnoi paradyhmy polityky vyshchoi osvity* [Formation of communicative culture of students in the context of the global paradigm of higher education policy]. *Problemy ta perspektivy nauk v umovakh hlobalizatsii: materialy V Vseukr. nauk. konf. — Problems and prospects of science in the context of globalization: materials V All-Ukrainian. Science. conf.* Ternopil [in Ukrainian].



11. Voinarenko, M. P., & Valkova, N. V. (2012). Suspilno-ekonomichniy proiav avtonomii universytetiv u perspektyvi rozvytku vyshchoi osvity [Socio-economic manifestation of university autonomy in the perspective of higher education]. *Visnyk KNUVD — Bulletin of KNUVD*, 4, 411—414 [in Ukrainian].
12. Krakmalova, N. A. (2014). Efektyvnist marketynhovykh komunikatsii u sferi vyshchoi osvity [The effectiveness of marketing communications in higher education]. *Vyshcha osvita — Higher Education*, 1, 171—174 [in Ukrainian].
13. Belyj, A. P., Lysenko, Yu. G., & Madyh, A. A. (et al.). (2013). *Kompleksnye ocenki v sisteme upravleniya predpriyatiem* [Comprehensive assessments in the enterprise management system]. Yu. G. Lysenko (Ed.). Donetsk: OOO «Yugo-Vostok, Ltd» [in Russian].
14. Kuchma, M. I. (2007). *Matematychni prohramuvannia: pryklady i zadachi* [Mathematical programming: examples and problems]. Lviv: «Novyi Svit-2000» [in Ukrainian].
15. Nakonechnyi, S. I., & Hvozdet'ska, L. V. (1996). *Zbirnyk zadach z kursu «Matematychni prohramuvannia»* [Collection of problems from the course «Mathematical programming»]. Kyiv: ISOT [in Ukrainian].

The article is recommended for printing 25.01.2021

© Kryvytska O., Doroshenko H., Babych D., Krykun O., Kovalchuk V.