



## Improvement of accounting and audit of intellectual property

Davletov I. R. berganovich, Dusmuratov R. Davlatbayevich

<sup>1</sup> Department of Accounting Tashkent State university of economics, Tashkent, Uzbekistan,

<sup>2</sup> Department of Economic analyses and audit Tashkent State university of economics, Tashkent, Uzbekistan

Emails: [i.davletov@tsue.uz](mailto:i.davletov@tsue.uz); [D.Radjabbay@gmail.com](mailto:D.Radjabbay@gmail.com)

### Abstract

The article explores the possibilities of using methods for analyzing the effectiveness of the use of intellectual property objects in the course of an audit. The article formulates proposals on the use of methods for analyzing the effectiveness of the use of intellectual property objects at the stages of the audit. An exemplary form of an intellectual property audit program using analytical operations is also proposed. The proposed approach to the implementation of a comprehensive analysis of the effectiveness of the use of intellectual property objects during the audit makes a certain contribution to the development of the audit methodology.

**Keywords:** Intellectual property; economic analysis; audit; efficiency; analytical procedures; auditing; audit program; performance indicators

### 1 Introduction

At present, competition is intensifying in the world economy not only in the possession of financial and material resources, but also in the development of organizational, technological, and commercial innovations, as well as their implementation in business activities. As a result, when assessing the position of enterprises in the market, important indicators are the share of products manufactured using advanced innovative technologies in gross production, gross domestic product and its growth. In fact, “in developed countries, 70-85% of the growth in gross domestic product falls on the share of new knowledge embodied in innovative production and management technologies” [15]. Such growth is achieved by the development of intellectual activity and the creation of innovative technologies. In improving the efficiency of this activity, the creation of intellectual property objects, the assessment of their value, and their reflection in the accounting and financial statements are of great importance.

At this stage of the country's development, much attention is paid to stimulating the widespread involvement of modern knowledge and ideas in production through the development of innovative activities and the introduction of intellectual property objects into economic entities' financial and economic activities.

In this regard, several regulatory legal acts have been adopted to regulate these processes, recognize intellectual property objects as an asset, and reflect them in accounting and financial reporting. At the same time, the definition of priority areas for the reform of the country's economy requires modernization, along with industry and the agricultural sector, and technical and technological renewal of the entire complex. The Decree of the President “On the development strategy of the new Uzbekistan for 2022-2026” sets the task “Wide introduction of innovations in the economy, development of cooperative ties between industrial enterprises and scientific institutions”. The “Action Strategy for the five priority areas of development of the Republic of Uzbekistan in 2017-2021” notes “stimulation of research and innovation activities, the creation of effective mechanisms for introducing scientific and innovative achievements into

practice” [1]. The growing need for technical and technological renewal of production in the agricultural sector, and the application of scientific developments in agricultural production and the processing industry requires the improvement of the organizational and methodological aspects of accounting and auditing of intellectual property objects at enterprises in the industry.

Indeed, the need to accelerate scientific and technological progress, increasing the role of intellectual property as a commodity in the context of the modernization of the agricultural sector increases the need for investors and other users to obtain accurate and reliable information about their value. In particular, the existing problems in the development of methodological aspects, the creation, evaluation, reflection in the accounting and financial reporting, and the audit of intellectual property objects in the agricultural sector require research work in this direction.

This scientific article, to a certain extent, serves to implement the tasks set in the Laws of the Republic of Uzbekistan dated December 9, 2014 “On investment activity” (new edition), May 2, 2012 “On guarantees of freedom of activity of entrepreneurs” (new edition), Decree of the President of the Republic of Uzbekistan No. UP-4947 “On the Action Strategy for the Further Development of the Republic of Uzbekistan” dated February 7, 2017, Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated May 19, 2017 No. 302 “On the implementation of measures to improve the organization, management and financing of research activities”, and as well as other legal acts regulating this activity.

## **2 RESEARCH METHODOLOGY**

The study of historical, organizational, economic, and regulatory features of the subject of research is based on the use of dialectic methods. In the monographic study, the methods of grouping, comparison, scientific thinking, economic, statistical and analytical methods were used. Also, constructive methods were widely used in the presentation of the study and the results obtained.

## **3 RESULTS AND DISCUSSIONS**

Based on the study of legal documents governing relations related to intellectual property objects and the approaches of national and foreign scientists to the classification of intellectual property objects by I.K.Ochilov, D.Kh.Azlarova, A.Z.Avloqulov [19], J.E.Qurbonbayev [20], N.N.Khakhonova [27], N.V.Poshersnik [22], N.A.Lytneva, L.I.Malyavkina, T.V.Federova [17], T.G.Belozerova, D.V.Lugovskih, R.A.Tkhagapso [10] proposed the author’s version of the classification (**Figure 1**).

As studies have shown, as part of accounts 0400-“Accounts for intangible assets” of Appendix No. 1 “Chart of accounts for accounting for financial and economic activities of economic entities” of the current NAS No. 21 “Chart of accounts for financial and economic activities of economic entities and instructions for its application”, there are inconsistencies in the classification of intangible assets, in particular, intellectual property objects by objects of rights. On some accounts of this group, one account reflects intangible assets related to individual objects of rights. Thus, account 0420 - “Trademark, trademarks and industrial designs”, along with trademarks and trademarks, which are means of individualization, includes industrial designs that are objects of patent rights. As a result, when summarizing information in the accounting of an economic entity about the presence and movement of objects of intellectual property, different objects of rights will be reflected in one account, which can lead to erroneous ideas about the property of the enterprise.

To summarize information on the availability and cost of rights to intellectual property objects, based on the need to classify intellectual property objects by objects of rights, we propose to amend accounts 0400 - “Accounts for accounting for intangible assets” and 0500 - “Accounts for accounting for depreciation of intangible assets” in the following editions:

INTELLECTUAL PROPERTY	Objects of copyright		<i>A work of science, literature and art</i>
			<i>Computer programs and information bases</i>
	Objects of related rights		<i>Execution</i>
			<i>Phonograms</i>
			<i>Broadcasting and broadcasting on the air or cable television</i>
	Industrial property objects	Objects of patent rights	<i>Invention</i>
			<i>Useful models</i>
			<i>industrial designs</i>
		Objects of individualization	<i>Brand names</i>
			<i>Trademarks</i>
		Objects of other (non-traditional) rights	<i>Service marks</i>
			<i>Name of origin of goods</i>
	<i>Know-how (production secrets)</i>		
	<i>Topologies of integrated circuits</i>		
	<i>Selection achievements</i>		

Figure 1: Classifications of intellectual property objects.

- 0400-"Accounts for intangible assets"
- 0410-"Patents, industrial designs and utility models"
- 0420-"Trademarks, trademarks and company names"
- 0430 - "Software"
- 0440-"Rights to use land and natural resources"
- 0450 - "Selection Achievements"
- 0460 - "Licenses and franchises"
- 0470-"Copyright"
- 0480-"Goodwill"
- 0490-"Other intangible assets".
- 0500-"Accounts for depreciation of intangible assets"
- 0510-"Amortization of patents, industrial designs and utility models"
- 0520-"Amortization of trademarks, trademarks and company names"
- 0530-" Amortization of software"
- 0540-" Amortization of the rights to use land and natural resources"
- 0550 - " Amortization of selection achievements"
- 0560-" Amortization of the license and franchise"
- 0570-" Amortization of Copyright "

0590-" Amortization of other intangible assets".

Proposals on the composition of accounts 0400-"Accounts for accounting for intangible assets" create opportunities to correctly classify intellectual property objects by objects of rights, generalize and provide detailed and reliable information about them.

According to paragraph 52 of IAS 38 "Intangible Assets", the process of creating intellectual property objects must be divided into two stages: research and development [6]. However, NAS No. 11 "Costs for research and development" "does not provide for the need to divide these processes into the above stages [4].

It is very important to distinguish between works within projects for the creation of intellectual property objects in an enterprise, since the costs of research work are recognized as an expense in the reporting period when they were incurred, and the costs of development work can be capitalized and constitute the cost of intellectual property objects. created by the organization itself.

Therefore, it is advisable to add to paragraph 7 of the NBSU No. 11 as follows: "To assess the compliance with the criteria for an asset of intellectual property objects created by the enterprise itself, this process is divided into the research and development stage and the experimental design stage."

There are studies on innovation and intellectual property in the works of domestic and foreign scientists. Despite the commonality of the economic essence of innovation and the creation of intellectual property objects, in the studies of domestic scientists, they are studied as unrelated separate processes.

In such approaches, the characteristics and mechanisms for creating intellectual property objects, their legal protection and their use in innovative activities remain undisclosed.

Z. Mukumov considers that the generalization of information on the innovation activity of economic entities should be carried out on account 2200 - "Innovation activity cost accounting accounts" [18].

In our opinion, this approach is debatable. Because, in the current regulatory documents, it is established that "the generalization of information on the enterprise's investments in fixed assets and intangible assets ... is carried out on accounts 0800-"Accounts for capital investments"".

Also, according to E.N. Kravtsov and V.P. Voronin, the process of carrying out research and development work to create a new or improved product, new technological processes for use in the activities of an enterprise or improving existing technologies is an innovative activity and also, as T.V. Bobryashova and N.A. Popova emphasizes innovation activity is closely connected with investment activity [11].

The textbook, edited by Y.A. Babaev, states that investments in research and development, technological and other works (modernization, reconstruction, expansion and technological support) are considered capital investments [12].

Based on the above, we believe that the costs of enterprises for innovative activities should be taken into account as part of capital investments.

Accounting for the costs of creating innovative products in business entities is carried out by NAS No. 11 "Costs for research and development" (Registered by the Ministry of Justice of the Republic of Uzbekistan on December 28, 1998 Registration No. 581) and NAS No. 21 "Chart of accounts of accounting of financial and economic activities of economic entities and instructions for its application" (Registered by the Ministry of Justice of the Republic of Uzbekistan on October 23, 2002, Registration No. 1181) [25].

Cost accounting for innovation activities should provide prompt, complete and reliable information on material, labour and monetary costs for the creation of innovative products (services and works). However,

despite the existence of regulatory documents and theoretical approaches to innovation, there are certain shortcomings in cost accounting and calculation of the cost of innovative products (works, services).

In our opinion, to ensure accurate and reliable cost accounting and calculation of the cost of created (developed) objects of intellectual property, it is advisable to enter account 0870 - “Capital investments for innovation activities” in Appendix 1 “Chart of Accounts for Accounting for the Financial and Economic Activities of Economic Entities » NAS No. 21. The balance of this account at the end of the reporting period means the value of unfinished developments.

For this account, it is recommended to open separate analytical accounts by types of innovative activities: research, development, technology, design work, and other innovative and scientific and technical work (services). Also, analytical accounts ensure the reliability of the information on the result of innovative activity. In business entities engaged in innovative activities, select the necessary accounts based on the range and characteristics of scientific and technical products, and reflect them in the accounting policy.

In summarizing the results of the research, an algorithm has been developed for reflecting business operations for cost accounting on account 0870-“Capital investments in innovative activities” (**Figure 2**).

It is advisable to organize the accounting of the costs of innovative activity “according to the custom method”. In this case, the object of accounting and costing is certain types of work (or the theme of the project) performed under the contract (order).

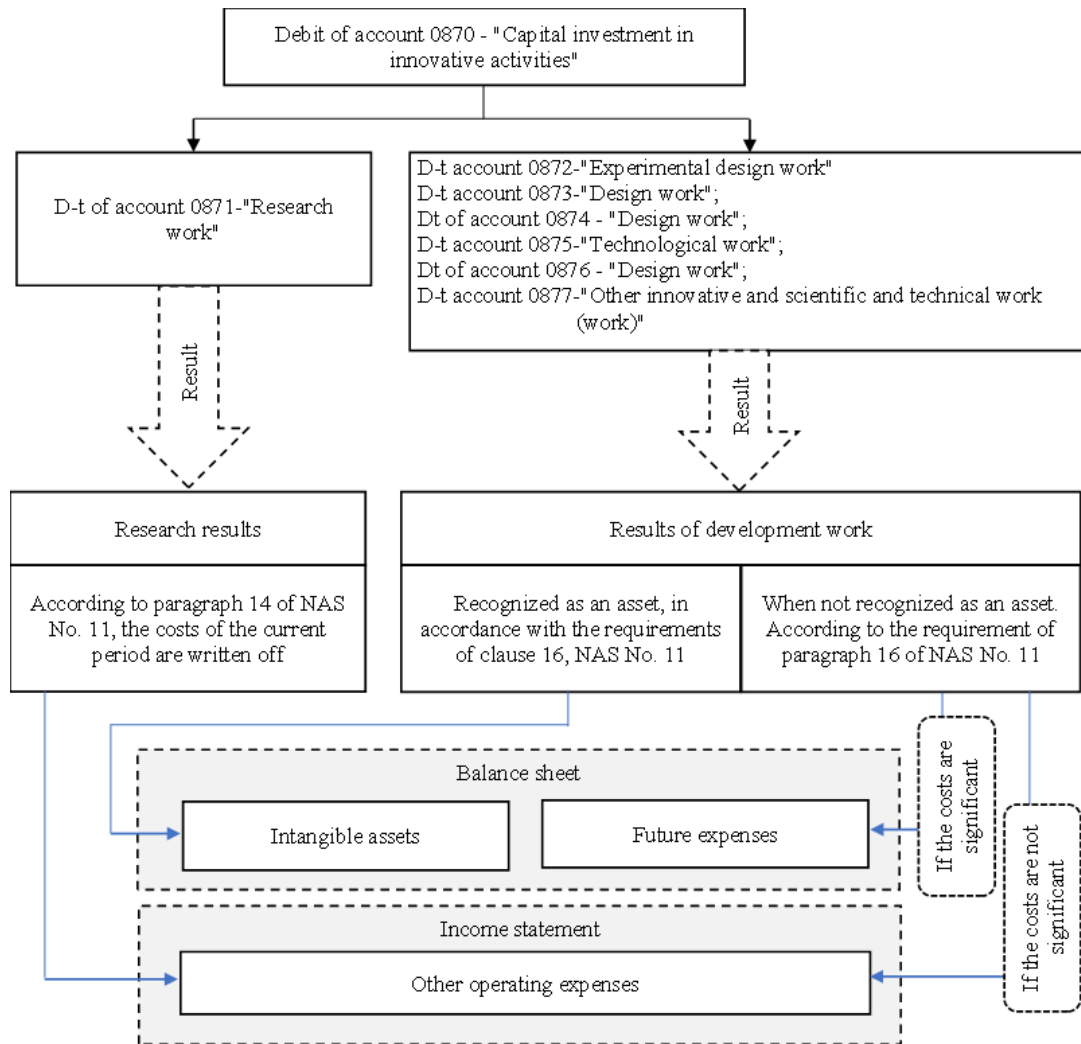


Figure 2: Algorithm for accounting for the process of creating intellectual property objects by the enterprise itself.

When obtaining rights to intellectual property objects under a license agreement, by clause 59 of NAS No. 7, their value must be determined based on the contract and accounted for on an off-balance sheet account. However, NAS 21's off-balance sheet accounts do not contain accounts for accounting for received intellectual property objects on the rights of use. Therefore, we propose to introduce a new off-balance sheet account 016 - "Intangible assets received by right of use" in NAS No. 21.

If the licensee pays for the rights to use intellectual property objects once, then this payment should be included in deferred expenses and during the term of the contract, based on the purposes of use, are included in the costs of the reporting period [3].

If the license agreement provides stipulates that payments will be made within a certain period (a fixed amount, a percentage of net revenue, payment for 1 unit of production, etc.), then these payments for the enterprise are payments in the form of royalties.

Royalty payments are recognized as other operating expenses by paragraph 2.3.19 of the "Regulations on the composition of costs for the Production and Sale of Products (Works, Services) and on the Procedure for generating Financial results" (approved by Cabinet of Ministers Resolution No. 54 of February 5, 1999) and accounted for in account 9430-"Other operating expenses" [2].

Accounting and control of the availability of rights to intellectual property objects obtained under a license agreement should be carried out on off-balance accounts.

The cost of intellectual property objects obtained under a license agreement, to account for these accounts, is recommended to be calculated by multiplying the number of periodic payments by the number of periods of the agreement.

Summarizing the results of the study, we propose an algorithm for accounting for intellectual property rights acquired and used by business entities (Figure 3).

To form and improve the methods of auditing intellectual property objects, we also studied the issues of planning, organizing, conducting and summarizing the results of the audit of intangible assets. Until now, some aspects of these issues have been described in the works of domestic scientists M.M. Tulakhodzhaeva [24], N.K. Rizaev [23], R.D. Dusmuratov [13], O.A. Masharipov, Sh.I. Ilkhomov [9] and others. It should be noted that insufficient coverage of the features of the organization, conduct and generalization of the results of the audit of intellectual property objects as a separate audit object requires the formation of an integrated approach to this problem.

Also, the development of innovative activity reinforces the need to improve the reflection in the accounting of intellectual property objects, substantiate the methodological aspects of the application in the audit of methods for analyzing the effectiveness of their use, the issues of conducting an audit of intellectual property objects and summarizing its results, taking into account domestic and foreign experience.

The purpose of checking intellectual property objects is to confirm the compliance of the accounting method in an economic entity with the current legislation and the reliability of information about intellectual property objects reflected in the financial statements.

The stages of conducting an audit for a general audit are divided by some authors into three stages: planning, substantive testing and the final stage [13], while other authors divide it into 4 stages: familiarization with the client's business, planning, conducting substantive procedures and the final stage [26], and the audit tasks are given for every stage. Foreign authors recommend dividing the stages of the audit of intellectual property into 7: prerequisites for verification, determining the ability to manage intellectual property, compiling questionnaires, following up on the results of the audit, analyzing the results, and developing recommendations [7]. Recognizing the opinions expressed, the functions of auditing intellectual property objects as separate objects of the audit are classified by us according to the main stages of the audit.

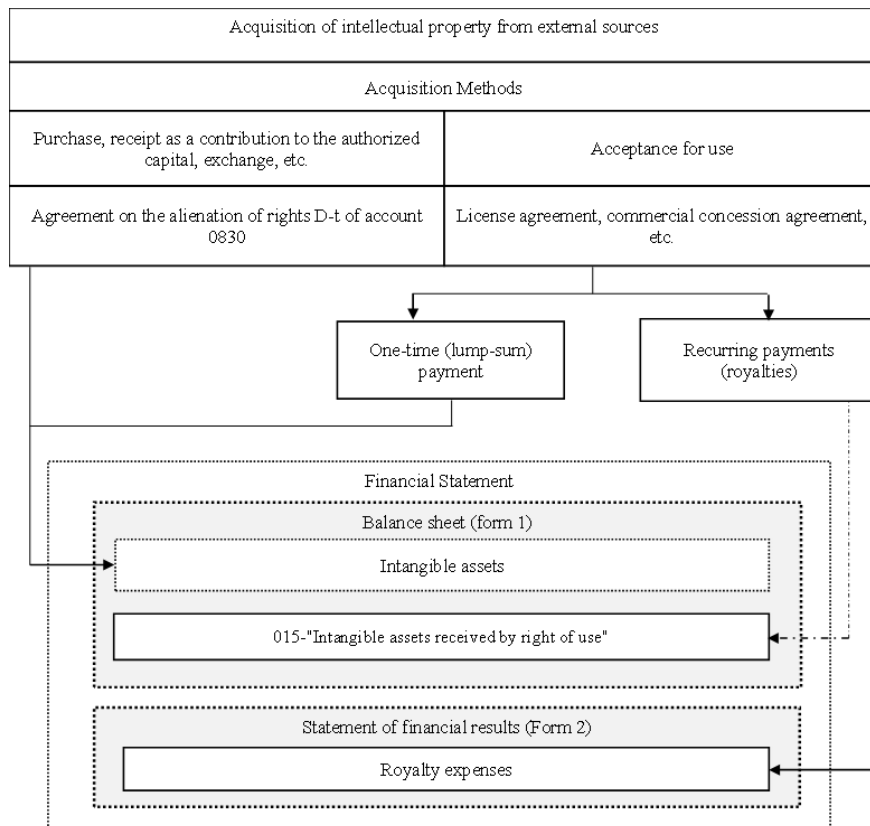


Figure 3: Algorithm for accounting for the process of acquisition and acceptance for use of objects of intellectual property.

First of all, to study and assess the state of the accounting system and internal control of intellectual property objects in the enterprise, it is necessary to conduct survey testing. Based on the results of a personnel survey using the developed questionnaire, it is necessary to determine the training and competence of employees in the field of accounting for intellectual property objects.

Based on the study of legal documents, as well as international and domestic experience in accounting for intellectual property objects, a list of documents confirming the existence of rights to them during the inventory of intellectual property objects have been compiled.

These documents are documents confirming the presence of the enterprise's rights to intellectual property objects or the granting of these rights by other copyright holders to the enterprise.

Annexes to NSBU No. 19 "Organization and Conduct of Inventory" provide forms of acts for processing the results of the inventory. However, in these applications, there are no standard forms of acts on registration of the results of the inventory of intellectual property objects [5]. Also in this NAS, the issues of inventory of intangible assets, in particular intellectual property objects, are given very briefly and in a generalized form.

Therefore, to provide a detailed presentation and improvement of the issues of organizing, conducting, formalizing and presenting the results of an inventory of intellectual property objects, we recommend making the following changes and additions to NAS No. 19 "Organization and conduct of an inventory":

1. Amend clause 1.5, paragraph 3 "when revaluing fixed assets and inventory items" in the following wording "when revaluing fixed assets, intellectual property and inventory items".
2. In the part "inventory of intangible assets" of section "3. Rules for Conducting an Inventory of Certain Types of Property and Financial Liabilities" introduces an addition on the organization, conduct and execution of the results of an inventory of intellectual activity and objects of intellectual property.
3. To formalize the results of the inventory of intellectual property objects in the annexes of NAS No. 19, add an addition to the standard forms of the following documents:

- Appendix 19 "Inventory of intellectual property objects";
- Annex 20 "Comparison sheet of the results of the inventory of intellectual property objects".

Thus, a systematic inventory of intellectual property objects by the requirements of regulatory legal acts helps to ensure the safety of intellectual property objects, assess their value, and determine the degree of their protection and the effectiveness of their use in economic activity.

A critical analysis of legal acts and published works provide an opportunity to emphasize the need to apply the methods of analytical procedures at all stages of the audit, as well as to determine the purpose, objectives and content of the procedures, the feasibility of using them at a certain stage of the audit. It is consistently recommended to distribute the methods of complex analysis at the stages of the audit. Also, in practice, the auditor needs to know the content of analytical procedures. The content of analytical procedures at the stages of the audit of intellectual property objects and their relationship with a comprehensive analysis of these assets can greatly contribute to the implementation of these activities in practice.

#### **4 Conclusion And Recommendations**

As a result of our research, the following scientific proposals and practical recommendations have been formulated:

- based on a comparative analysis of existing domestic and foreign approaches to the classification of intellectual property objects, proposals were prepared for classifying them based on the availability of rights to these objects, and also, based on such a classification, to make changes and additions to accounts 0400 - "Accounts for accounting for intangible assets" Appendix 1 NAS No. 21 "Chart of accounts for financial and economic activities of economic entities and instructions for its application". These proposals contribute to the generalization and provision of detailed and reliable information on the correct classification of intellectual property objects by objects of rights and their types.
- as a result of the research, to ensure accounting for the costs of innovative activities of business entities, accurate and reliable calculation of the cost of intellectual property objects created as a result of innovative activities, it was proposed to introduce a new account 0870 - "Capital investments for innovative activities" to 0800 - "Accounting accounts capital investments" in Appendix 1 of NAS 21. For this account, it is recommended to open separate analytical accounts for each type of innovative activity.
- to account for intellectual property objects received under a license agreement, an off-balance sheet account 016 - "Intangible assets received under the rights of use" is recommended. This account will ensure the provision of reliable and accurate information on intellectual property in the financial statements of business entities.
- an algorithm has been developed for taking into account the process of acquiring and accepting objects of intellectual property for use. This will make it possible to accurately reflect the value of acquired or accepted intellectual property rights in the Balance Sheet and Statement of Financial Results.
- Based on studies of regulatory documents and international and domestic practices for accounting for intellectual property objects, a list of documents confirming the existence of rights to intellectual property objects during their inventory has been compiled.
- a list of documents was formed confirming the rights of enterprises to intellectual property objects, as well as to improve the organization, conduct and registration of the results of the inventory, standard forms of documents "Inventory of intellectual property objects" and "Comparison sheet of the results of the inventory of intellectual property objects" were developed.
- as a result of the research, the need to apply analytical procedures in the audit process, as well as the dependence of the goals, objectives and contents of these analytical procedures on their implementation at some stage of the audit, has been substantiated. The distribution of the sequence of conducting a comprehensive analysis into the stages of an audit is proposed. The relationship between the content of analytical procedures and directions for a comprehensive analysis of intellectual property objects at the stages of audits of these assets greatly facilitates the application of these procedures in practice.

## References

- [1] Decree of the President of the Republic of Uzbekistan "On the development strategy of the new Uzbekistan for 2022-2026". dated January 28, 2022, No. UP-60
- [2] Regulations on the composition of costs for the production and sale of products (works, services) and on the procedure for the formation of financial results. Approved by the Resolution of the Cabinet of Ministers of February 5, 1999 No. 54
- [3] National Accounting Standard of the Republic of Uzbekistan (NAS No. 21) "Chart of accounts for financial and economic activities of business entities and instructions for its application"
- [4] National Accounting Standard of the Republic of Uzbekistan (NAS No. 11) "Costs for research and development"
- [5] Organization and conduct of an inventory. NAS No. 19, Registered by the Ministry of Justice of the Republic of Uzbekistan on November 2, 1999. Registration number 833. [http://lex.uz/pages/GetAct.aspx?lact\\_id=476407](http://lex.uz/pages/GetAct.aspx?lact_id=476407)
- [6] Международные стандарты финансовой отчетности 2000: издание на русском языке. М.: Аскери-АССА, 2011-998 с., 490 стр.
- [7] Cheung C. F. et al. Auditing Intellectual Capital: A Case Study in a Supply Chain Integrator //ICICKM2006-Proceedings of the 3rd International Conference on Intellectual Capital and Knowledge Management: ICICKM2006. – Academic Conferences Limited. – С. 99.
- [8] Do'smuratov R., Fayziev Sh., Qo'zиеv I., Po'latov G'. Audit. O'quv qo'llanma. I qism. / -Т.: ТМІ, 2007. 139 bet.;
- [9] Masharipov O., Ilhomov Sh. Amaliy audit: o'quv qo'llanma. – Т.: Cho'lpon nomidagi NMIU, 2014. – 264 b.
- [10] Белозерова Т.Г., Луговский Д.В., Тхагапсо Т.А. Нематериальные активы: проблемы идентификации, оценки и классификации. «Вестник АГУ», Выпуск 3 (150), 2014. 189-197 с.
- [11] Бобряшова Т.В., Попова Н.А. Роль инвестиций и инноваций в деятельности предприятия //IV Международная студенческая электронная научная конференция «Студенческий научный форум», 15 февраля – 31 марта 2012 г. <https://www.rae.ru/forum2012/193/253> (04.07.2017 й.)
- [12] Бухгалтерский учет: учебн./под ред. Ю.А.Бабаева. – М.: ТК Велби, Изд-во Проспект, 2005. – 392 с.
- [13] Дусмуратов Р.Д.. Аудиторлик фаолияти: назария, услубиёт ва амалиёт. Монография. -Т.: Молия, 2007 й. – 276 б.;
- [14] Дусмуратов. Аудиторлик фаолияти: назария, услубиёт ва амалиёт. Монография. – Т.: Молия, 2007 й. – 276 б. 137-163 бетлар.
- [15] Инновационный менеджмент, Учебник для вузов/ Абрамешин А.Е., Воронина Т.П., Молчанова О.П., Тихонова Е.А., Шленов Ю.В. под редакцией д-ра экон. наук, проф. О.А.Молчановой. – М.: «Вита-Пресс», 2001. –С.7.
- [16] Кравцова Е.Н., Воронин В.П. Инновационная деятельность предприятия //Креативная экономика. – 2008. – № 6 (18). – с. 3-8. <http://bgscience.ru/lib/3782/>
- [17] Лытнева Н. А., Малявкина Л. И., Федорова Т. В. Бухгалтерский учет: Учебник. — М.: ФОРУМ: ИНФРА-М, 2006.— 496 с., 113 стр.
- [18] Муқумов З. Инновацион фаолият харажатлари ҳисобини такомиллаштириш //Иқтисодиёт ва таълим. №1, 2014. 113-117 б.
- [19] Очилов И.К., Азларов Д.Х., Авлоқулов А.З. Молиявий ҳисоб – 2. Ўқув қўлланма. – Т.: Тошкент молия институти, 2004. 328 б., 77-80 б.
- [20] Очилов И.К., Курбонбоев Ж.Э. Молиявий ҳисоб. Ўқув қўлланма – Т.: IQTISOD-MOLIYA, 2007. 488., 278-281 б.

- [21] Посохина А.В. Аудит нематериальных активов. «Вестник Пермского университета. №8(24), 2008.
- [22] Пошерстник Н.В. Бухгалтерский учет на современном предприятии: учеб.-практ. пособие. – М.: ТК Велби, Изд-во Проспект, 2007. – 552 с., 146 стр.
- [23] Ризаев Н.Қ. Молиявий ҳисоботларнинг халқаро стандартлари асосида номоддий активларга амортизация ҳисоблаш тартибини такомиллаштириш // Молия ва банк иши электрон илмий журнали, №2, 2016. 36-47 б.
- [24] Тулаходжаева ва бошқ. Аудит. Дарслик. I жилд. Т.: NORMA, 2008. – 320 б.
- [25] Ўзбекистон Республикаси бухгалтерия ҳисоби миллий стандартлари тўплами. – Тошкент: «NORMA», 2011. – 360 б., 256 б.
- [26] Файзиев Ш., Каримов А. Аудит. Учебное пособие. Ташкент: 2013. 328.; Кочинев Ю.Ю. Аудит. СПб: Питер, 2008. С. 134.; Бычкова С.М., Фомина Т.Ю. Практический аудит. М.Эксмо, 2008.
- [27] Хахонова Н.Н. Учет нематериальных активов. Учебно-практическое пособие. Ростов-на-Дону.