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## Article

# Key Directions in the Marketing Strategy For the Formation and Utilization of Intellectual Capital Within the System of Innovative Cooperation Among Education, Science, and Industry

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**Abstract:** In this study, the process of forming and utilizing intellectual capital within the system of innovative collaboration among education, science, and industry is analyzed. Scientific proposals and practical recommendations have been developed for creating mechanisms, forms, and methods of innovative cooperation between education, science, and industry. Considering that the processes of creating and realizing intellectual capital are based on the development of supply and demand, a marketing strategy for developing these relationships should underpin such mechanisms. Based on an analysis of research by foreign and domestic scholars, the author provides an interpretation of the category "intellectual capital of an organization." The following research methods were employed: the dialectical method, logical reasoning, and others. Through analyzing the development paths of intellectual capital movement channels between various spheres of the intellectual environment and the monitoring system for these channels, a multichannel scheme for organizing intellectual capital movement is proposed. This scheme is implemented using traditional, vertical, and horizontal marketing distribution systems. Based on an analysis of the existing system for developing intellectual capital, it is suggested to consider the process of intellectual capital movement within the framework of the formulated regularities of the intellectual space and the synergistic principles of marketing strategy. The main results of the study include the identification of channels for scientific and industrial intellectual integration, a marketing strategy for developing intellectual capital movement channels, the main directions of the marketing strategy for the formation and utilization of intellectual capital, and the influence of info telecommunications on the development of intellectual capital movement channels.

**Keywords:** intellectual capital, innovative education, marketing strategy, intellectual capital movement, intellectual environment, integration

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## Introduction

Current global development trends indicate that humanity is progressively entering a qualitatively new stage of evolution, characterized by the comprehensive intellectualization of society through the development of continuous education systems and the deep integration of educational achievements into the fields of science and production [1].

In the framework of modern economic relations, marked by the high independence of economic entities, there is a trend toward strengthening direct collaborations between enterprises in science and production with higher educational institutions that can provide highly skilled specialists. Increasingly, companies regard comprehensively educated individuals and the specific expertise of university graduates as valuable intellectual capital, seen as an intangible asset with considerable worth to the enterprise [2, 3].

However, despite continuous government monitoring of university graduates' employment, such innovative relationships among education, science, and production mostly emerge spontaneously and are often more intuitive than systematically structured. Currently, there is insufficient scientific and methodological support to provide the modern intellectual space and environment with fundamentally new tools to enhance the quality and competitiveness of the national intellectual capital. This includes establishing new channels of mutually beneficial communication between education, science, and industry [4].

In this context, amid the innovative development of enterprises and the extensive adoption of modern digital technologies in Uzbekistan, there is a pressing need for new scientific and methodological approaches and practical recommendations. These would facilitate the development of mechanisms, forms, and methods for innovative cooperation among education, science, and production to intensify and enhance the efficiency of processes for forming and utilizing the nation's intellectual potential. Since the creation and realization of intellectual capital are driven by the dynamics of supply and demand, a marketing strategy for the development of these relationships should underpin such mechanisms [5]. It is essential to understand that forming the marketing toolkit for innovative cooperation is not about creating an abstract connection but about the dialectical advancement of an already established interdependent and interrelated system entering a new phase of intellectualization [6].

The objective processes and trends of society's intellectualization in Uzbekistan, the growth of intellectual space and environment, and the increased role they play in driving economic growth underscore the relevance of researching the challenges of implementing a marketing strategy to develop and leverage intellectual capital within the innovative collaboration between education, science, and production.

The phenomenon of intellectualizing national wealth became particularly evident in rapidly advancing countries with knowledge-intensive, competitive economies during the mid-20th century. In the West, the first steps in developing human capital theories date back to the early 1960s and are associated with the works of T. Schultz [7], G. Becker, J. Kendrick, and other economists, sociologists, and historians." In recent years, authors have once again focused on the multifaceted nature of defining the concept of intellectual capital. Notably, although the definitions of intellectual capital are conceptually close, various authors approach its application differently [8]. Alongside this, the terms "knowledge," "intellectual capital," "human capital," "cognitive capital," and "intellectual-creative capital" are often used quite liberally and interchangeably.

E.N. Seleznev states: "Intellectual capital is the intellectual wealth of an organization that determines its creative capacity to develop and implement intellectual and innovative products" [9, 10].

A.S. Afonin writes, "In most sources, these definitions are practically used as synonyms. Therefore, one could argue that there is currently ambiguity in the interpretation of these concepts not only among theorists but also among practitioners. This ambiguity arises from varied interpretations and understanding of their distinctions, as well as from the specific objectives that guide authors in their research [11]."

Thus, we observe that most contemporary definitions clearly and

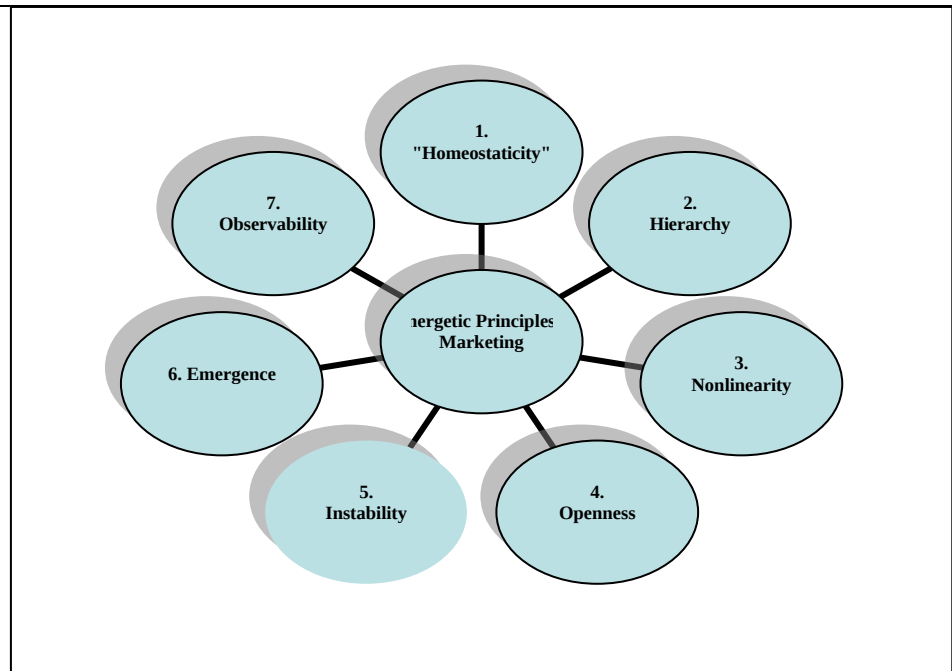
unequivocally describe intellectual capital as the knowledge possessed by an organization's people, which can be converted into value. Its capitalization manifests through a combination of knowledge, skills, competencies, patents, processes, technologies, experience, and connections with suppliers and consumers, among other assets. Although these elements can be evaluated, they are not always recorded in accounting documents. Therefore, we consider an organization's intellectual capital to be the qualifications, experience, motivation of its personnel, knowledge, technologies, and communication channels that can create added value and ensure the organization's competitive advantages in the market, functioning as a production factor. The defining distinction of intellectual capital from material capital lies in its intangible nature and inherent properties. Moreover, intellectual capital is forward-looking, whereas material capital represents the results of actions completed in the past [12].

### **Materials and methods**

A rational marketing strategy for the formation and utilization of intellectual capital leads to the expansion of intellectual space and the development of an intellectual environment. Amid economic modernization, technical advancements, and technological re-equipment of production, a well-conceived marketing strategy increases the market capacity for intellectual capital, enhances its quality, and promotes the development of intellectual capital channels within a system of integrative cooperation among education, science, and industry.

A critical issue in marketing strategy is fostering innovative collaboration among education, science, and production sectors. The effectiveness of this cooperation is achieved only through a well-tuned system for transferring intellectual potential and capital from the education sector to the realms of science and industry, and vice versa. Such an organization of intellectual resource circulation within a marketing strategy is implemented by developing channels for intellectual capital movement across various spheres of the intellectual environment.

Classical marketing theory emphasizes the organization of distribution channels, identifying three main types: direct, indirect, and mixed channels. Similarly, intellectual capital movement should have equivalent channels—either directly, through intermediaries, or as a combination of these forms. The selection of a specific capital movement channel depends on the current conditions in the intellectual capital market and the available opportunities for the producer of intellectual potential. However, it is essential to consider that, unlike traditional goods, the unique aspect of intellectual capital is that the individual - its bearer - has the freedom to independently choose where to apply their potential. This means that each individual constantly creates new channels for moving their intellectual capital. In some cases, these channels fit within standard, pre-established frameworks, but many of them are spontaneous and fluctuating. In this system of managed chaos, each element seeks stability and the optimal application of its potential. Therefore, this process of intellectual capital movement should be examined within the formulated laws of intellectual space and the synergistic principles of marketing strategy (see Fig.1).



**“Fig.1. The system of synergetic principles of marketing processes in an intellectual environment.”**

It is essential to direct this spontaneous movement in the right direction, meaning the establishment of a stable channel for intellectual capital flow. Several types of attractors should serve as the primary tools here. For individuals, these include material and moral incentives; for entrepreneurs, they involve high profit margins, other benefits, and preferences in conducting innovative activities. Most importantly, a clear and transparent organizational structure, supported by the necessary regulatory documents, should be created.

Beyond the simplest intellectual capital flow models, it is necessary to develop more complex structures that include a network of branch offices, independent intermediaries, and specialized enterprises forming unconventional channels of distribution. In this context, a multichannel scheme for organizing intellectual capital flow, utilizing traditional, vertical, and horizontal marketing distribution systems, appears highly promising.

The traditional capital flow system consists of a chain of independent channels within the intellectual environment, not controlled by other entities. The vertical system includes the producer of intellectual potential and intermediaries who ensure its delivery to the end consumer. It operates as a unified system with common goals and interests, with educational institutions typically being the dominant participants. Vertical systems can take three forms: corporation, operating within a single organizational structure; contractual, voluntarily united under a shared brand on a commercial basis and providing services under the auspices of an educational institution; and administratively managed, within the sphere of influence of one of the participants. The horizontal system combines two or more entities within the intellectual environment to jointly exploit new market opportunities when there is insufficient funding or other reasons preventing a full marketing operation, as well as when there are significant risks in entering a new market.

When forming channels for intellectual capital flow, it is important to consider both the requirements of science and industry and the strategies of competitors. Participants in capital flow channels should perform functions not only related to the distribution of intellectual potential but also to marketing research, collecting, and processing information, commercial activities, advertising, and promoting the growth of intellectual capital.

Issues related to regulating intellectual capital flow remain a central focus of

the state's economic policy. On September 11, 2018, the Cabinet of Ministers of the Republic of Uzbekistan adopted the 'Resolution on Measures to Further Support Innovative Activities, which outlined specific approaches to organizing intellectual capital flow.

Nevertheless, it must be acknowledged that the channels for interaction among the structural elements of the intellectual environment - namely the state, academic and educational institutions, and the entrepreneurial sector - are still in the formative stage, despite existing prerequisites for closer cooperation.

Through the implementation of sector modernization and production localization programs, technical and technological production upgrades are occurring, creating favorable conditions for increased demand for high-quality intellectual capital and innovation. According to the results of annual fairs showcasing innovative ideas, technologies, and projects, research institutions possess sufficient potential to offer advanced innovations across various fields of science and technology.

At this stage, further development and strengthening of intellectual capital flow channels require enhancing the intellectual environment's infrastructure. Following global experience, channels of intellectual integration between science and production should be established by creating an innovative infrastructure of technology parks, innovation centers, and others, where production will invest in scientific research, and science will, in turn, provide production with necessary innovations."

## Results and Discussion

"Building an information society initially presumes the creation of its material foundation - an intellectual environment within which all elements of the intellectual space begin to interact with each other. Intellectual space represents a qualitative substance integral to the process of forming an information society. This space can acquire quantitative and qualitative attributes as interactions among subjects and objects within the intellectual environment develop, through the formation and utilization of intellectual capital in its diverse forms and expressions. As it gains these attributes, it transforms from a qualitative abstraction into a defined system governed by its own economic laws, which shape the formation and functioning of the intellectual environment, as well as its management mechanisms and processes [13].

The dynamics of intellectual space dictate the character of marketing processes within the intellectual environment, evolving alongside the intellectual space as intellectual capital grows and is used more efficiently. This process is well-captured through a synergetic methodology, which brings a new perspective to the development of the country's intellectual space, adhering to synergetic principles of marketing activities. This approach enables the identification of external signs of disordered movements within intellectual capital, ensures direct support for the sustainable development of the nation's cohesive intellectual system, and facilitates an effective alignment of state regulation and self-regulation in intellectual capital utilization [14].

The principles governing intellectual space and synergetic methodologies reveal the defining role of self-regulation, which complements state regulation in the rational use of intellectual capital. A notable feature of marketing processes within the intellectual environment is the sudden activation of intellectual space upon reaching a critical mass of additional resources utilized in intellectual capital.

The educational system forms the foundation of society's intellectualization process, interlinked with other components - science and industry. These components, on the one hand, continue the educational process by increasing intellectual capital and, on the other hand, function as consumers of this capital [15].

The development of a marketing strategy follows a cyclic pattern of unique circulation, advancing dynamically in line with the state of the intellectual space and environment. This recursive nature of marketing strategies provides the objective possibility for self-organization within the marketing system - a deliberate process in which the organization as a complex, dynamic system is created, reproduced, or refined.

Based on this, we propose a new methodology for evaluating and diagnosing marketing strategy effectiveness. It posits that movements within the intellectual environment can sometimes exhibit an uncoordinated nature, driven by an inherent tendency toward stabilization. Consequently, the primary task in diagnosing a marketing strategy is to identify system dysfunctions and monitor various behavioral parameters. In synergetics, these signals are termed "indicatrices," serving as a visual representation of directional shifts in economic space. They simultaneously track the behavior of all intellectual environment components and their responses to intellectual capital movement, as well as the main directions of marketing strategies for intellectual capital utilization within the innovative cooperation system of education, science, and industry.

Therefore, synergetic evaluation and diagnostics of intellectual capital formation and utilization effectiveness are methodologically based on the interaction of key indicatrices (Table 1).

**Table 1 Indicatrices of intellectual environment structure and key directions in marketing strategies for intellectual capital utilization within the innovative cooperation system of education, science, and industry**

| Indicators of key directions in the marketing strategy for utilizing intellectual capital within the system of innovative cooperation in education, science, and industry       | Компоненты интеллектуальной среды |   |   |   |   |   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|---|---|---|---|---|
|                                                                                                                                                                                 | *                                 | * | * | * | * | * |
| Adult literacy rate                                                                                                                                                             |                                   |   |   |   |   |   |
| Number and age composition of top-tier professionals                                                                                                                            |                                   |   |   |   |   |   |
| Number of internet users per 1,000 people                                                                                                                                       |                                   |   |   |   |   |   |
| Number of computers per 1,000 people                                                                                                                                            |                                   |   |   |   |   |   |
| Business environment favorability ranking                                                                                                                                       |                                   |   |   |   |   |   |
| Components of the business environment favorability rating                                                                                                                      |                                   |   |   |   |   |   |
| Number of internet users per 1,000 people                                                                                                                                       |                                   |   |   |   |   |   |
| Information and communication technology expenditure as a percentage of GDP                                                                                                     |                                   |   |   |   |   |   |
| Number of landline telephones per 1,000 people                                                                                                                                  |                                   |   |   |   |   |   |
| Number of mobile phones per 1,000 people                                                                                                                                        |                                   |   |   |   |   |   |
| Quantity and scale of projects implemented in universities and research institutes under the Ministry of Higher and Secondary Specialized Education, funded by the state budget |                                   |   |   |   |   |   |
| Total education expenditure                                                                                                                                                     |                                   |   |   |   |   |   |
| Share of R&D expenditure in GDP                                                                                                                                                 |                                   |   |   |   |   |   |
| Share of R&D expenses in the GDP structure                                                                                                                                      |                                   |   |   |   |   |   |
| Investment growth rate                                                                                                                                                          |                                   |   |   |   |   |   |
| Structure of research and development costs executed in-house                                                                                                                   |                                   |   |   |   |   |   |
| Structure of research and development funding sources                                                                                                                           |                                   |   |   |   |   |   |
| Growth rates of expenses on scientific and technical works                                                                                                                      |                                   |   |   |   |   |   |
| Structure of innovation expenditure                                                                                                                                             |                                   |   |   |   |   |   |
| Innovation expenditures by industry                                                                                                                                             |                                   |   |   |   |   |   |
| Admission quotas for universities by fields of study                                                                                                                            |                                   |   |   |   |   |   |

|                                                                                                                                                                                                                                                                                                                                                       |  |  |  |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|
| Percentage of individuals recommended for university admission within the total number of applicants                                                                                                                                                                                                                                                  |  |  |  |  |  |  |
| Number of students and academic staff in universities                                                                                                                                                                                                                                                                                                 |  |  |  |  |  |  |
| Number of students per 10,000 population                                                                                                                                                                                                                                                                                                              |  |  |  |  |  |  |
| Higher education coverage within the population                                                                                                                                                                                                                                                                                                       |  |  |  |  |  |  |
| Number of researchers and technicians in the research and development sector per 1 million people                                                                                                                                                                                                                                                     |  |  |  |  |  |  |
| Structure of personnel engaged in scientific and technical work                                                                                                                                                                                                                                                                                       |  |  |  |  |  |  |
| Defense of candidate dissertations                                                                                                                                                                                                                                                                                                                    |  |  |  |  |  |  |
| Defense of doctoral dissertations                                                                                                                                                                                                                                                                                                                     |  |  |  |  |  |  |
| Implementation of scientific and technical programs                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |
| Publication and citation of articles in leading scientific journals worldwide                                                                                                                                                                                                                                                                         |  |  |  |  |  |  |
| Distribution of the volume of commercial contracts and memoranda of intent signed by universities and research institutes under the Ministry of Higher and Secondary Specialized Education with industrial enterprises during the Republican Fair of Innovative Ideas, Technologies, and Projects                                                     |  |  |  |  |  |  |
| Share of high-tech products in industrial output                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |
| Share of high-tech products in industrial output                                                                                                                                                                                                                                                                                                      |  |  |  |  |  |  |
| GDP growth                                                                                                                                                                                                                                                                                                                                            |  |  |  |  |  |  |
| Share of industrial products in GDP                                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |
| Share of high-tech products and services in exports                                                                                                                                                                                                                                                                                                   |  |  |  |  |  |  |
| Share of innovative products shipped                                                                                                                                                                                                                                                                                                                  |  |  |  |  |  |  |
| Share of innovative products shipped                                                                                                                                                                                                                                                                                                                  |  |  |  |  |  |  |
| Implementation of quality management systems                                                                                                                                                                                                                                                                                                          |  |  |  |  |  |  |
| Innovation activity of enterprises                                                                                                                                                                                                                                                                                                                    |  |  |  |  |  |  |
| Modernization of enterprises                                                                                                                                                                                                                                                                                                                          |  |  |  |  |  |  |
| Number of patent applications submitted                                                                                                                                                                                                                                                                                                               |  |  |  |  |  |  |
| Number of scientific articles from Uzbekistan in electronic bibliometric databases                                                                                                                                                                                                                                                                    |  |  |  |  |  |  |
| Number of patent applications per 1 million people                                                                                                                                                                                                                                                                                                    |  |  |  |  |  |  |
| Number of trademark registration applications per 1 million people                                                                                                                                                                                                                                                                                    |  |  |  |  |  |  |
| <b>L – Personal intellectual capital</b><br><b>G – State Policy for enhancing intellectual capital</b><br><b>O – Improvement of the knowledge acquisition system</b><br><b>N – Development of the scientific environment</b><br><b>P – Development of the industrial innovation environment</b><br><b>R – Effectiveness of the marketing strategy</b> |  |  |  |  |  |  |

This list of indicatrices essentially represents a new approach to evaluating and diagnosing the effectiveness of a marketing strategy for intellectual capital utilization within the system of innovative cooperation between education, science, and industry. However, at the current stage of development, we cannot consider this list as complete, since the process of society's intellectualization has yet to be fully studied by domestic and foreign science, and intellectual space is advancing so rapidly that it is impossible to establish a finalized methodology applicable indefinitely. Here, we present a new methodological approach, extracting known effectiveness evaluation parameters that are already used in a disjointed and uncoordinated manner within national systems of public administration. Clearly, this methodology must evolve in line with the development of the intellectual environment and intellectual space.

Thus, the foundation of the intellectualization process in society is the education system, which is interconnected with other components of science and

industry. These components, on the one hand, continue the educational process by increasing intellectual capital, and on the other, act as its consumers. This framing allows us to view the marketing strategy in the intellectual environment from a fundamentally distinct perspective, as a universal system of marketing management in the formation and utilization of intellectual capital. The development of a marketing strategy follows a cyclical, dynamic pattern corresponding to the state of development of the intellectual space and environment. This recursive quality of marketing strategies provides the objective possibility of self-organization within the marketing system, a targeted process by which the organization is created, reproduced, or refined as a complex dynamic system.

The methodology for diagnosing marketing processes involving the movement of intellectual capital elements in the system of innovative cooperation among education, science, and industry, using synergetic indicatrices, carries specific features that distinguish it from traditional analysis. These distinctions include a sequential approach from general to specific, an evaluation of intellectual capital movement parameters within society and individuals as part of the innovative cooperation among education, science, and industry, and the identification of states and signs of dysfunction in the movement of intellectual capital elements while ensuring ongoing monitoring of numerous system behavior parameters. This assessment shows that, over the years of independence, Uzbekistan, by rationally utilizing each individual's and society's intellectual capital through the implementation of a marketing strategy, has achieved substantial developmental results. Tracking indicatrices reveal that Uzbekistan outpaces the average economic development indicators within the CIS.

Indicatrices highlighting the significant acceleration of growth in industrial production, especially in high-tech sectors, also indicate the effective development of a marketing strategy for utilizing intellectual capital within the innovative cooperation system of education, science, and industry. The country's intellectual capital has played a decisive role in restructuring industry and adapting it to meet the demands of both domestic and international markets. It has clearly prioritized the accelerated development of high-tech sectors whose products are most in demand under new market conditions.

Marketing studies of intellectual capital at both societal and individual levels represent a vertical cross-section of issues that permeates the horizontal levels of intellectual capital - education, science, and industry. However, each horizontal component has its specific characteristics and bottlenecks and is therefore supplemented with a set of additional indicatrices stemming from its current specificity. The insufficient development of marketing approaches in the educational sphere contributes to notable imbalances in labor market supply and demand for specialists across different profiles and educational levels, stemming from weak coordination between workforce training system parameters and the economic development parameters of industries and regions. The inadequacies of the marketing strategy also account for the limited cooperation between education, science, and industry. This is largely influenced by the passive role of universities in organizing such interaction, as well as the negative consequences of the entire education sector functioning within an administrative-command framework.

The marketing strategy for developing intellectual capital flow channels within the system of innovative cooperation among education, science, and industry should focus on:

- Enhancing the role of technological and innovation policy in organizing innovation networks and clusters;
- Developing investment insurance for innovations, leasing high-tech equipment and devices, supporting the stock market for high-tech companies, and training certified professionals in intellectual property valuation;
- Strengthening cooperative ties between scientific organizations, educational

institutions, and production enterprises through incentives for effective cooperation and partnerships, including between public and private sectors, to create cooperative networks;

- Improving the quality of intellectual potential formed in educational institutions;
- Expanding training in innovation management, increasing participation of students and specialists in international educational programs;
- Developing modern forms of innovation management and commercialization of innovations in the scientific and technological product market;
- Stimulating innovative activity in leading industrial enterprises;
- Further expanding the investment sphere through stock market activation, attracting foreign direct investment, and strengthening the banking sector and its credit resources;
- Developing and adopting a special government program to support the growth of small innovative businesses, consulting, and venture firms, and organizing independent firms within educational and scientific institutions to create effective intellectual capital flow channels;
- Ensuring transparency in the innovation sector, promoting scientific achievements, and enhancing the activities of the 'Marifat va Manaviyat' society and mass media;
- Facilitating the delivery of new equipment and technology proposals directly to consumers;
- Increasing innovation culture among the population and entrepreneurs;
- Advertising and expanding information about modern technologies and potential markets for fundamentally new innovative products, as well as providing information for private investors and credit institutions on high-yield investment opportunities.

The development of intellectual capital flow channels is the result of a marketing strategy aimed at increasing demand for innovative products from the private sector, creating "technological corridors" through improved mechanisms for supporting high-tech product exports, concluding international agreements on mutual certification recognition, creating technical implementation zones, supporting the integration of development organizations into corporate and research sectors, and designing sectoral technological programs and breakthrough innovation projects in specific economic sectors using public-private partnership mechanisms.

Another crucial step in developing intellectual capital flow channels is the continued advancement of information and telecommunication technologies. It is no coincidence that the need to create a universal information and telecommunication system was first introduced in March 1994 in the State Program for Deepening Privatization and State-Owned Enterprise Reform in the Republic of Uzbekistan. A similar goal was re-emphasized in August 1995 in the State Program 'Key Objectives and Directions for State Support of Small Business and Private Entrepreneurship Development in the Republic of Uzbekistan.' Even then, the development of telecommunications systems was considered one of the key conditions for intellectual capital flow channels. Since then, this direction has been furthered by various legal acts on computerization and information and communication technology (ICT) development, providing new momentum for channel development, and consequently, for intellectual capital flow channels. Comprehensive large-scale reforms in the management of computer and ICT fields carried out during Uzbekistan's years of independence have ensured the implementation of the ICT segment of the marketing strategy and further development of intellectual capital flow channels.

#### Discussion

The methodology for creating and utilizing intellectual capital in our country is still in its formative stages and relies mainly on methods inherited from the former planned economy. However, the pace of economic reforms and the development of market institutions strongly demand new approaches and the implementation of marketing as a management system for intellectual capital within market conditions. Marketing asserts that the survival of any intellectual entity depends on the consumer's decision to acquire its intellectual capital. Therefore, marketing's role is to orient all activities of this entity toward consumers and competitor actions, and thus, toward the market. This is achieved through specific marketing strategies, assuming the market for intellectual capital consistently includes both producers and consumers.

Since education forms the foundation of intellectual capital, let us once again refer to the National program for training personnel, which is a law in the Republic of Uzbekistan. Section 3, "National model of personnel training," of this program considers the following as components of the intellectual environment: the individual, a continuous education system, science, and production. Each component in the intellectual environment is viewed as both a "consumer and producer" of knowledge, which is the basis of intellectual capital.

This conceptualization is an exceptionally important methodological condition when developing a marketing strategy for utilizing intellectual capital within the system of innovative cooperation between education, science, and production. Essentially, this conclusion in the Program represents a theoretical breakthrough in understanding the role and target orientation of domestic education. When economic reforms began in our country, as in other transitional economies, they were accompanied by an economic crisis, during which the education system faced severe funding challenges. In this environment, educational institutions' survival became linked to attracting funds from the public for tuition payments. This era saw the widespread adoption of foreign approaches to commercialization in education. A specific term, "educational services," emerged, replacing traditional terms like "teaching," "education," "training," and "professional training," effectively transforming education into a service sector.

In the early 1990s, debates on marketing educational services were active in Russia. A central question was: what exactly is the product of higher education institutions, and what should they be selling? Opinions varied widely at the time, though one thing was clear: higher education institutions could not sell graduates. Beyond this, opinions diverged among authors whether the product was knowledge, education, educational services, or academic programs. Foreign theorists did little to clarify this matter, often sidestepping the question by focusing on aspects such as advertising, rankings, branding, and pricing policy. They noted that educational institutions engage in marketing a set of values and an organizational image, reflecting the institution's products or services for its target audiences. This led them to conclude that the product is an educational service offered to students. Such an interpretation created a significant contradiction within educational institutions' activities. If the consumer in higher education is merely the student, then the entire marketing strategy of the institution would be to maximize student enrollment and compete for graduates from secondary specialized institutions (lyceums and colleges).

The fallacy of this notion of educational institutions' products and consumers became especially evident in the early 21st century within the higher education market of CIS countries. Competition among universities led to the proliferation of private institutions offering popular specializations - law, management, business fundamentals, etc. Consequently, government authorities recognized that almost all high school graduates entered universities, yet the quality of training was very low. The oversupply of lawyers and economists, who were not in demand by the economy, resulted not only in wasted educational resources but also in personal hardships for graduates left without prospects.

In Uzbekistan, the National program for training personnel took a fundamentally different approach to addressing this issue. According to the program, the education system is merely a component of the intellectual environment and the initial stage of intellectual capital formation. It is interconnected with other components, science and production which, on the one hand, continue the educational process, thereby enhancing intellectual capital, and, on the other hand, serve as consumers of it. Students, in turn, should complete all educational stages, becoming well-rounded individuals who carry knowledge that can be transformed into intellectual capital in the future.

This approach allows for considering marketing strategy within the intellectual environment from a fundamentally different perspective. It is no longer about university marketing, but a comprehensive system of marketing management aimed at forming and utilizing intellectual capital through innovative cooperation between education, science, and production. Thus, it becomes not merely an internal task for institutions but a developmental strategy for the entire innovation economy, involving individuals, educational institutions, science, production, the state, and society.

### Conclusion

In recent years, there has been rapid growth in global information networks and communications, including satellite television, radio broadcasting, telephony, and fax transmission, as well as transnational computer information-telecommunication systems utilizing high-speed intercontinental superhighways. As a result, a fundamentally new global information environment is emerging, which will form the basis for creating new channels of intellectual capital flow. These channels will foster the development of distributed international creative teams of scientists working on common research projects, the intensification of international scientific information exchange, and the hosting of international teleconferences.

Thus, one of the main directions in the marketing strategy for forming and utilizing intellectual capital is to ensure innovative collaboration between education, science, and industry. The effectiveness of this cooperation depends on developing channels for intellectual capital flow between different areas within the intellectual environment. These channels can be organized directly, through intermediaries, or through combinations of these methods. It is essential to recognize that a unique aspect of intellectual capital flow is that individuals—holders of intellectual capital—have the freedom to independently find areas in which to apply their potential. In some cases, these channels align with standard, pre-established frameworks, but a sizable portion is spontaneous and fluctuating. It is crucial to direct this spontaneous movement in the right direction. Various attractions should be used as the main tool here. For individuals, these attractors include material and moral incentives; for entrepreneurs, they include high profit margins and other benefits and preferences for conducting innovative activities. A clear and transparent organizational structure, supported by the necessary regulatory documentation, should be established.

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