bilan tasdiqlangan «O‘zbekiston Respublikasida naqd pulsiz hisob - kitoblar to‘g‘risida» Nizom qabul qilingan va unga 2022 yilni 07 martda ayrim o‘zgartirishlar kiritilgan [5].

Ushbu Nizom O‘zbekiston Respublikasining Fuqarolik Kodeksi, O‘zbekiston Respublikasi Markaziy banki, Banklar va bank faoliyati to‘g‘risidagi, O‘zbekiston Respublikasi korxonalari to‘g‘risidagi Qonunlari va O‘zbekiston Respublikasi Markaziy bankining O‘zbekiston hududida naqd pulsiz hisob - kitoblarni tartibga soluvchi boshqa me'yoriy hujjatlariga muvofiq ishlab chiqilgan va Respublika makonida hisob - kitoblarni uzluksiz bajarilishini ta’minlashga mo‘ljallangan. Naqd pulsiz hisob - kitoblarning zaruriyati quyidagilar bilan belgilanadi:

1. Yalpi ichki maxsulot va milliy daromad xajmining ortib borishi.
2. Tovar aylanishi hajmini o‘sishi.
3. Xo‘jalik subyektlari o‘rtasida hisob - kitob munosabatlarining oshishi.
4. Bank kreditining ayirboshlash jarayonidagi rolini o‘sishi.
5. Iqtisodiy aloqalarni rivojlantirishda va hisob - kitoblarda elektron hisoblash texnikasidan, kompyuterlardan keng ko‘lamda samarali foydalanishni oshishi.
6. Naqd pulning ko‘prok miqdorda oldi - sotdi bilan shug'ullanuvchi ishbilarmonlar qo‘liga o‘tib ketganligi.
7. Pulning davlat gaznasidan chiqib yana qaytib kelishi jarayonlarida uzilishlarning paydo bo‘lishi.
8. Davlatning naqd pul yetishmasligi muammosiga duch kelishi va boshqalar.

Naqd bo‘lmagan pul harakati hajmining doimiy o‘sib borishi xalq xo‘jaligida muhim ahamiyatga ega va u quyidagilar bilan belgilanadi:

- xo‘jalik subyektlarining naqd pulga bo‘lgan ehtiyoji keskin qisqaradi;
- o‘zaro hisob - kitoblarni amalga oshirish jarayonidagi muomila xarajatlari tejaladi;
- muomiladagi pul mablag‘larining xavfsizligi kamayadi;
- hisob-kitoblarni banklar orqali amalga oshirilishi ularning xuquqiy jihatdan qonuniyligini ta'minlaydi.

Bu tartibdagi hisob kitob ko‘rinish juda foidali bo‘lib ko‘rinadi. Lekin bu jarayonga aholining ishchi qatlami va keksalarga bir tomonlama noqulayliklar tug‘durmoqda. Aytaylik bir keksa inson nafaqasini plastik kartasiga kelib tushganiligini bilish uchun mahalladan yoki bankdan so‘raydi, shunchaki **bank ilovalaridan** foydalanishni bilmaganligi uchun. Kartasiga pul tushganligini bilgach u uyga ro‘zg‘orliq qilish uchun bozorga boradi [3]. (Biz bilamizki bozorlarda hozirgi kunlarda ham naqt pulda savdo sotiq qilish avjida. Bunga sabab, **bozorlarda ulgurji va chakana savdoda belgilab bo‘lmaydigan** qonun qoidalar mavjudligidir) tavar sotib olish uchun u albatta pulni naqd qildirish uchun bank plastiklarini naqt qilish punkitlariga kiradi. O‘z-o‘zidan nafaqa oluvchi pullari bilan **yashirin iqtisodiyotga** kirib boradi.

Shu boisdan sotuvchi va oluvchining bozorlarda yoki boshqa to‘lov qisimlarida erkin savdosini yo‘lga qo‘yish uchun, fuqorolar davlat soliqlaridan qochmasliklari uchun, ular o‘rtasida tashviqotlar va o‘quv kurslarini tashkil qilish, bunda soliqchi va bankning malakali xodimlaridan ommaviy axbarot vositalari orqali tushuntirish ishlarini olib borish.

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ИННОВАЦИОННЫЕ ЭКОСИСТЕМЫ И ИХ РОЛЬ В МЕЖДУНАРОДНОЙ КОНКУРЕНТОСПОСОБНОСТИ

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Аннотация: В исследовании рассматриваются взаимосвязи между международной конкуренцией, цифровизацией, человеческим капиталом и институциональной эффективностью. Подчеркивается, что укрепление инновационных экосистем является важным условием

устойчивого экономического роста и конкурентоспособности государств в условиях технологических изменений.

Ключевые слова: инновационные экосистемы, международная конкурентоспособность, постиндустриальная экономика, цифровая трансформация, интеллектуальный капитал.

INNOVATSION EKOTIZIMLAR VA ULARNING XALQARO RAQOBATBARDOSHLIKDAGI ROLI

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Annotatsiya: Ular ilmiy markazlar, davlat institutlari, biznes va tadqiqot tashkilotlari o‘rtasidagi hamkorlik tarmog‘ini ifodalaydi. Bunday tizimlar innovatsiyalarni rivojlantirish, bilim almashinuvini tezlashtirish va iqtisodiy samaradorlikni oshirish orqali davlatlarga xalqaro ustunlik beradi. Tadqiqotda xalqaro raqobat, raqamlashtirish, inson kapitali va institutsional samaradorlik o‘rtasidagi bog‘liqlik tahlil qilinadi. Shuningdek, innovatsion ekotizimlarni mustahkamlash barqaror iqtisodiy o‘sish va davlatlarning raqobatbardoshligini ta’minlashning muhim sharti ekani ta’kidlanadi.

Kalit so‘zlar: innovatsion ekotizimlar, xalqaro raqobatbardoshlik, postindustrial iqtisodiyot, raqamli transformatsiya, intellektual kapital.

INNOVATIVE ECOSYSTEMS AND THEIR ROLE IN INTERNATIONAL COMPETITIVENESS

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Annotation: They represent a network of cooperation between research centers, government institutions, businesses, and scientific organizations. Such systems give countries an international advantage by promoting innovation, knowledge exchange, and economic efficiency. The study explores the interconnection between international competition, digitalization, human capital, and institutional effectiveness. It emphasizes that strengthening innovation ecosystems is essential for sustainable economic growth and competitiveness in an era of rapid technological change.

Keywords: innovative ecosystems, international competitiveness, post-industrial economy, digital transformation, intellectual capital.

Introduction. Since the beginning of the 21st century, the global economy has become increasingly complex, and innovation has turned into the main source of competitive advantage. Globalization, digital transformation, and rapid technological change have rendered traditional production models outdated, giving rise to new economic approaches based on innovative ecosystems. In the post-industrial economy, knowledge, intellectual capital, and technological potential have become key resources, making the formation of innovation ecosystems a strategic factor of national and global competitiveness.

Innovative ecosystems represent the interaction between the state, business, research institutions, and civil society. Their effectiveness depends on free information exchange, technological transfer, and institutional coherence. In modern theory, such systems are linked to the concept of open innovation, which allows different actors to jointly create and commercialize innovations. Developed countries such as the USA, Japan, Germany, South Korea, and Sweden have made innovative ecosystems central to their economic policy. For instance, the U.S. Silicon Valley and Japan’s triple helix (University–Industry–Government) model demonstrate how knowledge exchange and research integration drive competitiveness. In the post-industrial stage, innovation became the main engine of economic growth, and competition now depends on intellectual capital and scientific potential rather than production volumes.

Globally, innovative ecosystems foster growth, job creation, and the development of digital technologies - artificial intelligence, big data, blockchain, and robotics — forming the foundation of the knowledge economy. Their effectiveness largely depends on human capital, research capacity, and public

policy. Scandinavian countries lead in innovation due to education and research investment, while China advances through strong technological clusters.

For Uzbekistan, building an innovative ecosystem is an urgent national priority. The establishment of the Ministry of Innovation and support for young scientists are positive steps, yet success requires active participation of the private sector, universities, and research centers. Internationally, innovation ecosystems promote cooperation, technological exchange, and sustainable development, as recognized by the UN, OECD, and World Bank. Nevertheless, challenges remain — digital inequality, weak intellectual property protection, and limited financial resources hinder many developing countries. To enhance global competitiveness, it is essential to invest in innovation, modernize education, and cultivate an innovation culture. Thus, innovative ecosystems form the foundation of economic progress in the post-industrial world, harmonizing knowledge, technology, and creativity. Strengthening them ensures national stability, sustainable growth, and international competitiveness.

1. Innovative eco systems: conceptual dept hand theoretical frame works. The concept of aninnovative ecosystemhas become an integrative model in the fields of Economics, innovative research, and political science.The term ecosystem— a metaphor derived from Biology-describes economic agents (enterprises, universities, institutions, financial intermediaries, government bodies, civil society) as well as their interactions as a networked, dynamic and self-reinforcing system.In order tounderstandthe theoretically innovative ecosystem, it is necessary to combine several macro and micro approaches: national innovation system (NIS), triple/quadruple helix, open innovation, cluster theory, and network economics.The national innovation system paradigm(NIS) analyzes the institutions, regulations and their interactions that organize innovation activism in a national context.This approach serves as the basis for most public policies, as it sees R & D infrastructure, funding system and personnel resources as a whole.Triplehelix(university-industry-state), on the other hand, focuses on the interaction of the three main agents in innovation processes and the process of transforming knowledge created through this collaboration into economic value.The quadruple helix conceptalsoincludescivilsociety,culture, andconsumergroups, and addresses issues of socialacceptance and sustainability of innovations.The openinnovationmodelplays an important role in modern ecosystems: it is based on the principle of creating faster and more efficient innovations by not putting an end to the enterprise's internal resources, attracting external sources of knowledge, startups, universities and other partners.Clusterand network approaches, on the other hand, show the possibilities of generating a synergistic effect through the creation of local and regional concentrations — specialized firms, service providers, scientific institutions.

2. Composition and dynamics of the ecosystem: agents, resources and processes. The success of an innovative ecosystem depends on the quality of its constituent elements and the strength of the interactions between them. These elements can be divided into the following groups:

1.Knowledge harvesters: universities, research institutes, laboratories. They create new knowledge and prepare personnel based on fundamental and Applied Research.

2.Technological manufacturers and service providers: Cobb, large corporations, startups, technological incubators and accelerators — play a role in transforming an idea into a product.

3.Knowledge harvesters: universities, research institutes, laboratories. They create new knowledge and prepare personnel based on fundamental and Applied Research.

2.Technological manufacturers and service providers: Cobb, large corporations, startups, technological incubators and accelerators — play a role in transforming an idea into a product.

3.Financial intermediaries: banks, venture capital funds, business angels, grant agencies — provide funding for innovations and risk management.

4.Institutional organizational elements: legislation, intellectual property protection system, tax and subsidy mechanisms, techno parks and special economic zones.

5.Environment in terms of market and demand: consumers, Public Procurement (public procurement), international markets and global value chains.

6.Social and cultural context: innovative culture, risk acceptance rate, social trust, and collaborative tradition. Ecosystem dynamics-processes resulting from the flow of resources and communication between agents: knowledge creation, technology transfer, product marketing, growth and scalability. From Mokoro‘s point of view, the chain “idea → prototype → test → commercialization → scaling” must be effectively organized in an ecosystem.

3. Meso- and micro-scales: how to assess ecosystem health?

Many indicators and metrics are used to measure ecosystem performance. They can be divided into three categories: resource indicators, outcome indicators, and process indicators.

- **Resourceindicators:**
  - O R & D spending / GDP (R&D/GDP);
  - number of scientific staff and their level of qualification (scientific degrees, authorship of patents);
  - quality indicators of the educational system (STEM graduates).
- **Performance indicators:**
  - number of patents and quality indicators (cited patents);
  - scientific articles and quotes (publications & citations);
  - high-tech export pilgrimage and startup exits (unicorns, IPOs).
- **Process indicators:**
  - number of startups and success rate (survival/scale-up);
  - number of cooperation agreements between enterprises and universities;
  - number of licenses made through technology transfer agencies (TTO);
  - volume and distribution of venture capital flows into segments.

Quality indicators such as network analysis, social network analytics, cluster intensity, and job quality are also used in assessing ecosystem health. In order to assess ecosystem resilience (resilience), however, resilience and regeneration rates against market shocks, financial crises, or globalization turns are measured.

4. Funding mechanisms and capital requirements. Innovative processes are at high risk, and financing with traditional bank loans in the initial stages is difficult. Therefore, special financial instruments and investor input are necessary for innovation:

- Grants and subsidies: state and international grants fund R&D start-ups and encourage the transformation of fundamental research into economic manifestations.
- Venture capital (VC): carries out projects with high risk, high profitability potential; types seri A, B, C support startups in the growth phase. Grants and subsidies: state and international grants fund R&D start-ups and encourage the transformation of fundamental research into economic manifestations.
- Venture capital (VC): carries out projects with high risk, high profitability potential; types seri A, B, C support startups in the growth phase.
- Business angels: play an important role in supporting early-stage technological ideas; they bring expertise, networks, and funding.
- Corporate venture (CVC): venture chapters managed by large corporations are used to master strategic technology.
- Crowdfunding and alternative financing: through public funds, it allows you to test and market the product before it starts.
- Public procurement for innovation: ensures the introduction of innovative solutions to the market through public procurement; serves to form the demand side through government strategy.

Funding requires a suitable set of instruments for each stage of the ecosystem. Therefore, in successful ecosystems, there will be an inextricable connection between grant Programs, the venture sector and corporate investors.

5. The role of universities and technology transfer mechanisms. Universities not only create knowledge, but are also a center for training personnel and the cultivation of ideas with scientific foundations for startups. Their main roles were:

- Conduct Fundamental research;
- Providing students with entrepreneurial skills;
- Patenting, licensing and startup organization through technology transfer (TTO — Technology Transfer Office;
- Help bring ideas to market through incubators and accelerators.

The effectiveness of technology transfer often depends on university policy, incentive for inventors (royalty, spin-off support), and the level of professionalism of TTO. In advanced ecosystems, common laboratories, joint grants, and frame exchanges between universities and corporations are common practices.

6. Issues of socio-economic inclusion and inequality. While the development of innovative ecosystems can positively impact economic growth, it can exacerbate social and regional inequalities. High-tech clusters often result in a concentration of resources, financial opportunity, and talent - as a result of which areas remaining on the periphery may be left out of economic activity. Therefore, inclusive policies - expanding access to education, sharing opportunities through online education and microcredit-are important. Additionally, promoting gender and youth participation also increases the sustainability of the ecosystem.

7. International networks, globalization, and technological diplomacy. Today's innovative processes are implemented in international networks without restrictions. Collaboration between ecosystems accelerates innovations and reduces technological risks. International cooperation takes place in the following areas:

- Bilateral and multilateral scientific project grants;
- Interuniversity exchange and associate degrees;
- Regional networks of corporate R&D centers;
- Dissemination of technology and knowledge through Global value chains (GVC).

At the same time, technological sovereignty and national security have become an urgent problem: states are strengthening the policy of controlling strategic technologies (artificial intelligence, quantum computing, bio-technology) and ensuring information security. Technological diplomacy, on the other hand, allows countries to coordinate interests through cooperation.

8. Sustainability and green transformation of innovative ecosystems. Green innovation-renewable energy, efficient resource utilization, Waste Recycling Technologies — is a new growth area of ecosystems. Ecosystems developed on the principle of sustainability serve to adapt to climate change, increase energy independence and environmental efficiency. Solutions created through innovation reduce the carbon footprint of the economy and shape new business models (e.g. rotational economics, servitization).

9. Stages of development of an innovative ecosystem and strategic transformation. Ecosystems usually go through several stages of development: initiation (emergent), growth (scaling), stabilization (mature), and reorganization (renewal). Policies and instruments must be different at each stage:

- Initial stage: it is important to attract grants, incubators, University-startup contacts, personal investors.
- Growth phase: venture capital, corporate cooperation, strategies to reach the international market.
- Stabilization phase: standards, intellectual property portfolio, global brands and export directions.
- Reorganization: diversification and scientific updates to adapt to technological shocks or market changes.

10. Risks and limitations: technological closure (lock-in), path dependence, and monopoly trends. The growth of innovative ecosystems is not always positive; there are some risks and limitations:

- Path dependence: being tied to previous technological directions can make it difficult to negate new, potentially more efficient technologies.
- Technical lock-in: over-linking to certain standards or platforms impairs innovative competition.
- Monopolization: global giants can close Market doors for local startups and reduce innovative diversification.
- Data and cybersecurity risks: based on the international nature of data flow, data protection, privacy and sovereignty issues will be relevant.

Mechanisms for identifying and mitigating these risks - open standards, competition, and data protection - are essential to managing ecosystems.

Conclusion. The main sign of the post - industrial era is the leading position of knowledge and innovation in economic development. In this process, innovative ecosystems have become a fundamental factor determining the competitiveness of national economies. They establish cooperation between scientific institutions, the business sector, the state and civil society on a systematic basis, forming the necessary conditions for the creation of new technologies, their commercialization and introduction into the international market.

Analysis shows that the effectiveness of an innovative ecosystem - not only depends on the size of resources, but also on the quality of their management, the stability of institutions, the potential of human capital and the environment of open cooperation. Therefore, modern competition is no longer at the level of a separate enterprise or industry, but among whole innovative ecosystems. Ecosystems operating in the areas of digital transformation, green economy and technological diplomacy are gaining an advantage in the international market. At the same time, ecosystems that incorporate the principles of inclusiveness, social responsibility and sustainable development can provide long-term competitiveness.

In conclusion, the development of innovative ecosystems is the most important tool not only to accelerate economic growth, but also to strengthen national security, technological independence and position in the international arena. Therefore, it is necessary that public policy, the education system and the business sector together develop integrated strategies aimed at improving the efficiency of ecosystems.

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