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ECOSYSTEM STARTUPS IN KAZAKHSTAN

The scientific article sets out the definition of ecosystems, the findings of scientists. At the same time, a scientific analysis was made of topical issues such as global warming, causes and effects of climate change and problems related to national ecosystems, intensive development of the resources of the Caspian Sea shelf, pollution and water pollution.

The purpose of the article is to review the impact of air pollution in Kazakhstan on the implementation of measures to solve these problems and to analyze the content of legislative documents adopted in the Republic of Kazakhstan in solving global environmental problems.

An academic review of the writing skills of environmental journalists is given, based on the scientific and geographical value of the study, as well as the form and content of the materials delivered. The article also outlines issues that journalists should pay attention to when preparing material on the subject of ecology, and which areas should be taken into account when studying the subject.

The main result of the article is to prevent problems in the field of ecology, the interaction of the media and ordinary people. The article describes the launch of an ecosystem initiative.

The value of the book lies in the fact that the author focuses on the implementation of ecosystem initiatives in different countries of the world. Despite the relationship and interest between investors and startups, the ultimate goal is to earn a living for development. Local investors understand that start-ups are not short-term, but that they will happen quickly, but they are successful investors. Startups are also expected not only to raise funds, but also to participate in the beginner's life, as entrepreneurs often have only the product.

Key words: ecosystem, climate, ecological information, global warming.

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Қазақстанда экожүйе бастамасын іске қосу

Ғылыми мақалада экожүйе терминінің анықтамасы, ғалымдар тұжырымдары берілген. Сонымен қатар жаһандық жылынудың, климат өзгерісінің себептері мен салдары және Ұлттық экожүйе проблемалары, Каспий теңізі қайраңы ресурстарының қарқынды игерілуіне байланысты мәселелер, су ресурстарының жұтаңдауы мен ластануы сынды өзекті мәселелерге ғылыми сараптама жасалған.

Мақаланың мақсаты – Қазақстандағы ауа бассейнінің ластануы оған әсер еткен факторлармен аталған проблемаларды шешу шараларының мемлекетімізде жүзеге асуына шолу жасау және жаһандық деңгейде орын алған экологиялық проблемаларды шешуде Қазақстан Республикасында қабылданған заңнамалық құжаттар мазмұнын талдау.

Зерттеу жұмысының ғылыми және практикалық құндылығы ретінде экологиялық мәселелерді жазып жүрген журналистердің жазу шеберлігі, материалды беру формасы мен мазмұнына да ғылыми сараптама жасалған. Экология тақырыбына материал дайындағанда журналистер қандай мәселеге назар аударулары қажеттігі және тақырыпты зерттегенде қандай бағыттарды қарастыру керектігі жөнінде мақалада баяндалады.

Мақаланың басты нәтижесі – экология саласы аясында проблемалардың алдын алуда, бұқаралық ақпарат құралдары мен қарапайым халық арасында байланыста болып, бірігіп жұмыс жасау болып табылады. Мақалада экожүйе бастамасын іске қосу барысы анық айтылған.

Мақала құндылығы – автордың әлемнің әртүрлі елдеріндегі экожүйелік бастамаларды іске асыруға бағытталғандығына байланысты болмақ. Инвесторлар мен стартаптар арасындағы қарым-қатынас пен қызығушылыққа қарамастан, түпкі мақсаты даму үшін табыс табу. Жергілікті инвесторлар стартаптар қысқа мерзімді сәтте емес, олар тез арада өтетінін, бірақ табысты инвесторлар екенін түсінеді. Стартаптар тек қаражат жинау үшін ғана емес, сонымен қатар, жаңадан бастаған адамдардың өміріне қатысты, өйткені кәсіпкерлер жиі тек өнімге ие болады.

Түйін сөздер: экожүйе, климат, экологиялық ақпарат, жаһандық жылыну.

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Экосистемные стартапы в Казахстане

В научной статье изложены определения экосистем, выводы ученых. В то же время был проведен научный анализ актуальных проблем, таких как глобальное потепление, причины и последствия изменения климата, и проблем, связанных с национальными экосистемами, интенсивным освоением ресурсов шельфа Каспийского моря, загрязнением и загрязнением водных ресурсов.

Целью статьи является обзор влияния загрязнения воздушного бассейна в Казахстане на реализацию мер по решению этих проблем и анализ содержания законодательных документов, принятых в Республике Казахстан при решении глобальных экологических проблем.

Дан академический обзор навыков письма журналистов, пишущих по экологическим вопросам, на основе научной и географической ценности исследования, а также формы и содержания доставки материалов. В статье также излагаются вопросы, на которые журналисты должны обращать внимание при подготовке материала по теме экологии, и какие области следует учитывать при изучении предмета.

Основным результатом статьи является предотвращение проблем в области экологии, взаимодействие СМИ и простых людей. В статье рассказывается о запуске экосистемной инициативы.

Ценность книги заключается в том, что автор акцентирует внимание на реализации экосистемных инициатив в разных странах мира. Несмотря на отношения и интерес между инвесторами и стартапами, конечная цель – заработать на жизнь. Местные инвесторы понимают, что стартапы не являются краткосрочными, но что они произойдут быстро, но являются успешными инвесторами. Стартапы также ожидаются не только для сбора средств, но и для участия в жизни новичка, поскольку у предпринимателей часто есть только продукт.

Ключевые слова: экосистема, климат, экологическая информация, глобальное потепление.

Introduction

"Like Florence in the Renaissance," such a comparison was given in The Economist's edition of what has happened in Silicon Valley over the past few years. Startupers and venture capital investors from around the world are coming to this small hilly part of California to become the new inhabitants of the technological capital of the world (Brown, J., and M. Neil. , 2011). The combination of engineering expertise, breakthrough ideas, Stanford and empty garages in the courtyard of the parental home made the southern part of San Francisco Bay a unique ecosystem that many countries dream of copying. Does Kazakhstan have such potential? We talked to experts who told us what the local market lacks for creating a startup ecosystem and what problems entrepreneurs face (Reedy E.J. and Robert E. Litan, 2011).

Imitate – bad?

We all know that blindly copying an idea is like a lottery ticket or a cat in a bag: you never know how lucky you are. Yes, it may seem that in order to build the second Californian Valley, you just need to create a technopark, collect some cool projects, attract investors, and then it will work out. But the startup ecosystem of the Valley, Singapore, Israel, or the gaining momentum of the Silicon savanna are examples of successful, but not scalable. Arguments about how everything should look, rest on the specifics and specifics, due to which they were formed in other countries or on another continent (Finnoff, D., M. Gong, and J. Tschirhart, 2012).

For example, when part of the countries of the African continent headed for the creation of their own technological developments, no one began to create a second Uber or try to introduce the neighbor guys and girls through the new Tinder. Countries where Internet penetration was only 29% took into account all weaknesses and began to develop in the direction of mobile payments and security (Ryan Decker, John Haltiwanger, Ron Jarmin, and Javier Miranda. 2014). Kenyan startup M-Pesa enlisted Vodafone support and became the main provider of payment services for the market, and Nigerian Ushahidi allowed users to send anonymous messages in case of any incidents. Silicon savanna was formed because local startups were repelled by the specific needs of their countries.

So, maybe we should do something of our own? The local startup scene is far from talking about it as a whole ecosystem. At first, Kazakhstan tried to go along the beaten Valley and copied other examples, but changed its course in time and is now trying to focus on the identity and characteristics of the local market. According to Joseph Ziegler, head of Astana Hub, the local market understands its specifics, so it does not seek to borrow ideas for creating ecosystems from other countries.

– Difficulties in creating start-up ecosystems are unique and largely depend on cultural characteristics and the development of the country as a whole. I note that in Kazakhstan we are still at that early stage, where we need to focus on building a system, training investors and mentors, as well as teaching entrepreneurs all the skills they need at the moment, Ziegler says.

Kazakhstan has the potential to actively develop entrepreneurship in the IT field, but the forced or even artificial construction of the Kazakhstan Valley can be a premature step. Just because neither the market itself, nor local entrepreneurs are ready for this (Sarah A. Low. 2014).

Vector selection

Kazakhstan startups compete for the same markets as startups in the West. Nobody wants to create applications that match the variety of wine to your musical mood. But here they create a service to track the location of children or a solution for the distribution of goods for transport companies. According to Askar Aytuov, head of the DAR Lab, Western startups solve global problems. For example, what to do with garbage that has accumulated on the ocean floor, or how to deal with environmental pollution (Isenberg, Feld, and World Economic Forum, 2013).

Natural Born Killers: How Amazon, Google and Facebook Get Rid of Startups

"Since there are practically no such projects in the local context, solutions for business optimization, finance, medicine, as well as transport and logistics can be the most promising areas for us." Thanks to the digitalization of start-ups in the logistics industry, I can get the proper direction, "says Aytoov.

Logistics is indeed capable of becoming one of the drivers of digitalization at the level with banks and the oil and gas industry. The long distances between settlements and the favorable geographical location of the country provide space for local startups who wish to declare themselves in the market (Arustamov E.A., Levakova I.V., Barkalova N.V. , 2001).

– Now the state is investing heavily and efforts to develop the infrastructure, so transport and logistics have great potential for growth. With the advent of digitalization, this potential will increase by several times, especially since logistics now accounts for about 8% of Kazakhstan's GDP, "Aytuov is sure.

Looking for an investor

Despite the mutual flirtation and interest between investors and startups, the latter is still not easy to get funds for development. The problem is that local investors are only beginning to realize that startups are not short-term fashion, which will soon pass away, but profitable investments. Startups are waiting not only for fundraising, but also for participation in the startup's livelihoods, because entrepreneurs often have nothing but a product. According to Joseph Ziegler, one of the important steps in creating a startup ecosystem will be training investors.

Material and Methods

How to believe in Instagram and miscalculated with Uber one of the best investors in the world

Instead of the office at Steve Anderson's former children's photo studio. Toenails by ... →

"Any investors are interested in making their investments profitable, but many may confuse traditional investments and those made in startups. Local investors immediately want their investment to be profitable, "says Ziegler.

On the other hand, the investors themselves also did not fully determine the most profitable sectors for their investments. Convincing an investor with the original idea alone is not enough, so they need benchmarks in order to assess how much profit the investment can bring.

Kristin Ting Ting Du, co-founder of UIS, believes that investors should better choose areas such as artificial intelligence, biotechnology and environmental protection (Fish, D. R. 2011).

"Based on the current global business environment, large investments in assets can

significantly increase the risk of doing business, so it's best to start with" light "investments. Such business investments are safer for both companies and investors, says Ting Ting Doo.

A look at Asia

An important feature of Kazakhstan startups is their scalability to other Asian countries. The problem is that entrepreneurs with a more or less finished product tend to enlist the support of Western investors or accelerators, although it would be more logical not to threaten the European or North American markets right away, but look at Asia (Viglizzo, E. F., J. M. Paruelo, P. Laterra, and E. G. Jobbágy. 2012). Territorial proximity to Asia, similar consumption markets, the mentality ultimately gives the country its advantages, and integration with IT companies can open the way to promising consumption markets. After that, local startups can count on the export of their technology and an international investment elevator.

Kazakhstan ranks 74th in the world ranking and holds the 3rd place in the region of Central and South Asia, competing with India and Iran (Denisova V.V. 2002).

Leading countries from this international ranking have been developing the innovation ecosystem for decades, investing huge amounts of money in it and attracting the best specialists from different countries. The Americans began to build Silicon Valley in the 70s, among its main sources of funding at that time was the management of promising Pentagon research projects – DARPA, which created the Internet.

Tel Aviv competes with Silicon Valley, but in contrast to the United States in Israel, they are more often managed by local specialists, skillfully attracting foreign investment. At the same time, Israel remains the world leader in research and development spending in relation to GDP. The secret of the Israeli economic miracle lies in the competent state policy in the field of innovation. In 1993, the state venture fund Yozma with a budget of $ 100 million became the engine of the entire industry.

He took a dozen other venture funds with different specializations under his wing and for seven years invested $ 200 million through them, creating 4,000 tech companies that attracted $ 7 billion in foreign investment (Abson, D. J., and M. Termansen, 2011).

The participation of the state fund in the companies that received the investments was minimal, and when the budget funds for development ended, the government attracted foreign investments (Gasparatos, A., P. Stromberg, and K. Takeuchi. 2011). It was decided to finance the largest possible number of promising projects with small funds. Already in 1997, the state fund officially went into private hands, leaving behind a developed ecosystem. Later, the flow of foreign investment doubled. The investment climate in Israel to this day remains one of the most favorable in the world._ Read also: Incubators, transfer, online exchanges: how in China support innovation.

In China, state-owned enterprises are mainly engaged in technological development. In many regions, there are departments of science and technology, which are subject to technology parks, business incubators and universities. For example, in the province of Harbin, with a population of just under 40 million people, there are 190 business incubators. The National Oriental Technology Transfer Center (NETC) participates in the formation of the state innovation policy, one of its tasks is to integrate technical and scientific achievements into the economy (De Groot, R. S., R. Alkemade, L. Braat, L. Hein, and L. Willemen. 2010).

With the participation of NETC, there are 10 technology parks in China, more than 5,000 companies have passed through its business incubators. NETC has opened 11 branches and five foreign representative offices in developed countries. Their task is to help domestic companies to enter foreign markets, as well as invest in small foreign enterprises.

How to develop innovation in Kazakhstan

By 2050, the state is faced with the task of taking the 30th place in the international ranking of competitive countries. Kazakhstan is also striving to become the center of innovation development in Central Asia (Gee, K., and B. Burkhard. 2010). To achieve these ambitious plans, the government has developed two state programs: industrial-innovative development of the Republic of Kazakhstan for 2015-2019 and Digital Kazakhstan.

The first goal is to diversify the manufacturing industry and increase its competitiveness. The program is designed to modernize traditional sectors of the economy and create new areas with high innovation and export potential. To do this, we need to improve the innovation ecosystem: new industry technology centers have opened in different regions of the country, and promising IT developers have the opportunity to learn, participate, and receive grants. The government allocated 878.3 billion tenge for the implementation of the program (Adekola, O., and G. Mitchell. 2011).

The Digital Kazakhstan initiative complements the first program in the issues of digitization of

the economy and improving the quality of life of the population thanks to modern technologies. According to President Nursultan Nazarbayev, the Digital Kazakhstan program will provide the economy with an increase of 30%. The Government will spend 141,048,387 thousand tenge for its implementation until 2022.

The program has five key areas:

– digitalization of basic industries;

– digital state;

– human capital development;

– formation of high-speed and secure infrastructure for the transmission, storage and processing of data;

– creation of a new infrastructure for the digital transformation of the country (Philip E. Auerswald. 2015).

Results and discussion

The Alatau Innovation Technology Park, Tech Garden and Astana Hub were opened in Almaty and Astana. Projects should provide IT start-ups with working space, financial and non-financial opportunities for training and seeking investment (Deborah Markley and Ahmet Binerer, 2014).

In addition to the program "Digital Kazakhstan", the state program of industrial-innovative development for 2015-2019 also participates in the creation of a favorable innovation ecosystem.

Thus, in Kazakhstan, the state remains one of the main sources of financial and non-financial assistance to innovators. From 2011 to July 31, 2018, through the National Agency for Technological Development (NATD), it invested 340 innovative projects totaling KZT14,230.2 million. The greatest number of innovation grants was received by entrepreneurs and developers from Almaty, Astana and Karaganda region. During the first half of 2018, the agency concluded three contracts for a total amount of KZT 347.9 million (Gutenev V.V., Denisov V.V., Kamyshev A.P., Moskalenko A.P., Nagibeda B.A., Osadchiy S.YU., Khorunzhiy B.I. 2007).

The Kazakhstan Institute for the Development of Industry, responsible for the development of territorial clusters from different sectors of the economy, and the Science Fund Foundation, are engaged in supporting innovation in Kazakhstan. He issues grants for the commercialization of the results of scientific and scientific-technical activities on a competitive basis (Beaumont, N. J., M. C. Austen, S. C. Mangi, and M. Townsend. 2008).

It is still difficult to measure the effect of these investments on the economy, and it's too early. On the website of the National Agency in the section of statistical data are the following figures: 3,158 jobs created and 9 billion tenge of taxes paid (Plieninger, T., S. Dijks, E. Oteros-Rozas, and C. Bieling. 2013).

The current state programs have already provided the necessary infrastructure to strengthen the innovation ecosystem. Opportunities for the development of innovative projects in Kazakhstan are offered by clusters, start-up accelerators, business incubators and technology parks in different regions of the country. The largest and most famous start-up platforms, Almaty Tech Garden and Astana Hub, are supported by the state. There are private business incubators, for example, MOST or nFactorial. In the latter, train mobile application developers. For three years, 300 people from 14 countries became its graduates, having created more than 200 mobile applications (Heike Mayer. 2011).

Tech Garden Cluster is called "Kazakhstan's Silicon Valley", which is located in the foothills of the Trans-Ili Alatau

Tech Garden was created as the 63rd step under the program of the President "100 concrete steps to implement five institutional reforms." The executive body of the cluster is the Autonomous Cluster Fund (hereinafter the ACF). It supports the participants 'innovation activities from the fund's funds, which are mainly formed from subsoil users' deductions. The cluster participants are members of the special economic zone PIT (Park of Innovative Technologies) "Alatau", as well as legal entities approved by the ACF (Nikanorov A.M., Khorunzhaya T.A. 2003).

Cluster technological directions:

– "smart" industry and new materials;

– smart environment;

– new energy and clean technologies;

– fintech;

– e-commerce;

– new media.

The objectives of the cluster are to increase the share of Kazakhstani content in the field of high technologies and create an ecosystem of venture financing. Tech Garden specialists have developed acceleration and incubation programs through which innovative projects and companies receive financial and non-financial assistance through grants, seed investments and, if necessary, co-investment tools (Charles, H., and J. S. Dukes. 2007).

The park of innovative technologies "Alatau" and Nazarbayev University were to become the center of the domestic start-up industry and strengthen the position of Kazakhstan in the field of innovation in Central Asia. The failure of the PIT and

the departure of large international companies from it led to a change in the development strategy of the first national technopark in 2011. On the instructions of the President in 2018, the project was transformed into the Special Economic Zone (SEZ) "Almaty" and transferred to the city administration. Now it is one of the 50 driver projects of the southern capital (Holt, A., J. Godbold, P. White, A. Slater, E. Pereira, and M. Solan. 2011).

Another Kazakhstan Silicon Valley is born in the capital and is called the International Technopark of IT-startups Astana Hub.

For the second time, Astana Hub conducts a free acceleration program – 100 startups, providing promising technology projects with a free workspace on the EXPO territory, diagnostics of a startup, setting up business processes, investments and accelerating the development of the project (Yermolayev B.V. 1999).

Technopark offers the following development tools:

– tracking;
– education and consulting;
– community and networking;
– auction startups;
– PR;
– access to corporations and government agencies.

Successful projects have already appeared on the basis of the technopark, and in the Investors section there is a list of investors on the site. In some cases, it is even indicated how much they are willing to invest. Technopark forms community innovators who could receive knowledge not only from organizers and experts within the framework of acceleration programs, but also from each other.

Graduates of the first acceleration program launched 10 start-ups and in the three months of their studies attracted investments in their projects totaling 28 million tenge. In the second stream of acceleration, 11 projects from Kazakhstan and one each from Tajikistan, Russia and Uzbekistan are participating (John Haltiwanger, Ron S. Jarmin, Robert Kulick, and Javier Miranda. 2016). Magzhan Madiev, a young entrepreneur who, in the recent past, founded the successful startup Naimi.kz, an online job search platform with a mobile application of the same name that Madiev launched together with the National Chamber of Entrepreneurs Atameken, is in charge of the work of Astana Hub.

Of recent events organized by the team and partners of the general director of the Astana Technopark, the Digital Arena forum is worth noting. August 11, Astana Hub became a dialogue platform, where Kazakhstani developers were able to discuss topical issues of the IT market and innovation with vice ministers from relevant ministries (Conrad, E., M. Christie, and I. Fazey. 2011).

Conclusions

How efficient is the digitization of the economy?

There are good examples, like the Egov online e-government service. It regularly expands the range of services, makes life easier for the population and relieves the burden on PSCs.

The key role in the Kazakh economy is assigned to the extractive and processing industries, where the introduction of innovations into production processes is especially important. According to the report of the Ministry of Investment and Development of the Republic of Kazakhstan (MID) for 2017, 80% of manufacturing enterprises and 60% of extractive industries are at the level of semi-automated operations, which corresponds to industry 2.0. According to the head of the ministry, Zhenis Kasymbekov, most of them are not aware of the benefits of digitization of production. MIR conducted an analysis of the industry together with the Fraunhofer Institute and the Swedish Business and Investment Council of Sweden (Kowarik, I., L.K. Fischer, I. Säumel, M. von der Lippe, F. Weber, and J. R. Westermann, 2011).

Foreign experts believe that the introduction of Industry 4.0 technologies, for example, cyber-physical and robotic systems and analyzing large amounts of data, will help improve the efficiency of enterprises by 10–20% (David B. Audretsch, Roy Thurik, Ingrid Verheul, and Sander Wennekers. 2013).

Kasymbekov described several problems hampering digitalization in enterprises: the lack of qualified personnel, poorly developed telecommunications infrastructure, the high cost of foreign innovation technologies and unprofitable long-term lending.

To solve the problems, the ministry will create seven "reference digital factories" on the basis of existing enterprises and adopt a new concept of industrialization for 2019-2024. The concept will prescribe measures for stimulating enterprises: preferential loans and subsidies to industries introducing innovative technologies.

The Internet of Things is an important technology for the digitization of the economy of Kazakhstan. Smart devices connected to the network help monitor equipment operation, control it remotely and significantly improve efficiency. The Internet of Things is used both in large enterprises and strategic

sites, as well as in the systems of "smart home" and "smart city". But to become a contractor of a public sector company in order to supply solutions in the field of the "Internet of Things" is not enough for every technology startup. Our hero – Sergey Panchenko, Business Development Director at ICT service, told how his companies how his company managed to become a supplier of this technology for a large state-owned enterprise (Mike Konczal and Marshall Steinbaum. 2016).

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