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ABSTRACT

Nowadays, the creative industry in Kazakhstan is a young direction of the economy. The government supports this industry with tax benefits, the provision of infrastructure, as well as the creation of Special Economic Zones (SEZ) in large megacities of the country like Nur-Sultan (Astana) and Almaty. "Astana Hub" and the park of innovative technologies "Alatau" are the main centers of development of the organization of the ICT industry as cluster formations. In this paper, an overview study was conducted to determine the role of these SEZs for the development of the creative industry in Kazakhstan. Firstly, the concept of the creative industry was considered, then a literary review of the creative industry and special economic zones was conducted, and thirdly, a review was made on special economic zones that contribute to the development of the creative industry in Kazakhstan.

Attualmente, l'industria creativa in Kazakistan è un giovane settore dell'economia. Il governo sostiene questo settore con agevolazioni fiscali, fornitura di infrastrutture e creazione di Zone Economiche Speciali (SEZ) in grandi megalopoli del paese come Nur-Sultan (Astana) e Almaty. "Astana Hub" e il parco delle tecnologie innovative "Alatau", come formazioni di cluster, sono i principali centri di sviluppo dell'organizzazione dell'industria ICT. In questo lavoro è stato condotto uno studio generale per determinare il ruolo di queste SEZ per lo sviluppo dell'industria creativa in Kazakistan. In primo luogo, è stato considerato il concetto di industria creativa, quindi è stata condotta una revisione letteraria dell'industria creativa e delle zone economiche speciali e, in terzo luogo, è stata effettuata una revisione delle zone economiche speciali che contribuiscono allo sviluppo dell'industria creativa in Kazakistan.

Keywords: ICT sector, creative industry, special economic zones, Kazakhstan

1 – Introduction

Since the origin of the “creative industry” in the UK, the world has gradually realized the economic power of culture and promoted creative industries one after another. The research on creative industry policies in western countries is more mature and extensive, including the definition of the

connotation and extension of the concept of creative industry, the analysis of its nature and function, and the discussion of policies and strategies. There are also case studies, regional studies, industry studies, comparative studies, and humanities theory studies on creative industries. Some private groups, foundations and companies have also participated in such research, and many cities, universities and their affiliated faculties and scientific research institutes have also set up special creative industry research institutions one after another. In recent years, experts and scholars have used various forms such as newspapers, monographs, networks, conferences, annual reports published by decision-making bodies and statistical agencies as carriers to conduct enthusiastic discussions on the emerging industry of creative industries. In the past two years, Kazakhstan's research on creative industries has also begun to develop, in the same form as abroad.

Among the many research literature, employment issues are the most concerned issue for western experts and scholars (Caves, 2000; Howkins, 2001). Almost all articles and monographs on creative industry policies, without exception, talk about the impact of creative industry policies on employment. It should be noted that European governments and scholars are more concerned about employment issues than the US government and scholars, and creative industries and employment have risen to the top of Europe's agenda (Domenech, et.al. 2014). The research mainly involves the following aspects: examining the economic benefits of creative industries to the government and individuals; studying the funding system of the creative industries in the United States (including both government and private aspects, of which private funding also includes individuals, foundations, and companies); emphasizing the importance of government funding and support to the creative industries. A common feature of these studies is that they are based on statistical data and based on quantitative analysis, and there is no shortage of in-depth analysis.

In terms of the research field of creative industries by western scholars, with the continuous penetration of modern science and technology into traditional creative industries, the extension of creative industries is also expanding, showing more and more the dual characteristics of new technology and high intellectual content; in terms of research methods, there are more common and general studies on creative industries abroad, while there is very little comparative analysis of differences between countries; in terms of research focus, there is more attention to large cities, while there is less attention to rural areas and local development, for example, Capone (2007) mapped and analyzed creative systems in Italy.

While the creative industries in Europe and the United States are developing and researching, the Asian countries that have attracted the attention of the world with their economic miracles are no exception. Since 1998, South Korea has called out the slogan "Internationalization of Korean culture" and prioritized the development of creative industries as a new driving force to promote South Korea's economic development. Since then, Hong Kong has adopted the "Hong Kong Unlimited" three-year plan for the all-round development of art in 2000, and the Singapore Government has proposed the "Renaissance City Plan" in an attempt to make Singapore a global art city.

In the instance of Kazakhstan, the sector creates new very profitable positions, particularly for smart young people, and so creates whole new "social elevators" for them. In Kazakhstan, the amount of investments in the creative economy has more than quadrupled in the last decade. This industry employs 3.5 percent of Kazakhstan's entire employed population, or 310 thousand Kazakhs. Today, the contribution of creative industries to Kazakhstan's GDP is 2.7 percent. To

maximize the potential of this sector, the government is drafting a Concept for the Development of Creative Industries for 2021-2025 in collaboration with the professional community. A single governmental vision for the growth of the creative industry will be developed, as will innovative methods to its development. Furthermore, unique economic zones such as "Astana Hub" and the park of new technologies "Alatau" help to strengthen the country's creative sector.

In our city, Almaty, there are many talents, young individuals, and people with strong intellectual potential. Almaty has 37 universities with a total enrollment of 182 thousand students. At the same time, six institutions are among the top 1000 in the world, according to the QS World University Ranking 2020. As a result, IT and the creative industries are in high demand and require the assistance that is currently available. According to the research, 17.8 thousand businesses operate in Almaty's creative industry, accounting for 8.8 percent of all businesses. This figure is expected to rise to 31.4 thousand by 2025. (10.2 percent). There are around 44.9 thousand people employed here. Tax receipts from the city's creative industries firms totaled 37.7 billion tenge in 2020, with a volume of services delivered of 402.8 billion tenge (Syzdykova, 2021). As a result, Almaty possesses the resources required for the development of a creative economy. The synergy of creative firms, universities, and the city is given for the growth of the creative economy in accordance with global practice. The development strategy is organized into ten categories: film and animation, literature, fashion, new media and digital cultures, theater, opera and ballet, esports and game development, architecture and design, music, contemporary art, and the entertainment business.

Content analysis or analysis of documentary sources was used as a methodology in this work. According to the method of recording information, written documents from official sources were used (legislative acts, government resolutions, documents of the Astana Hub and PIT Alatau SEZ, etc.).

This research paper consists of 4 main parts. In the first paragraph in the introduction, the theoretical and conceptual foundations of the concept of the creative industry and the current state of the industry in Kazakhstan were considered. The literature review presented the main sources that developed the concept of the creative industry and special economic zones and their application. In the main overview part, using documents and other official sources, the main activities of the Astana Hub and PIT Alatau SEZ and other information on them were given. In conclusion, the importance of free economic zones in the field of ICT for the development of the creative industry and the main tasks that they solve are determined.

2 – Literature review

The notion of "creative industries" arose largely as a policy discourse in the late 1990s, but the following decade saw a vigorous set of academic, industrial, and policy-related discussions concerning its utility and consequences for research, criticism, and creative activity. Since its inception in the United Kingdom in 1998 (DCMS, 1998), the creative industries debate has evolved into genuinely global phenomena, with no country exempt from the necessity to take action in identifying, quantifying, and promoting their creative and cultural output (Comunian, Chapain & Clifton, 2014).

According to cultural economist David Throsby (2008), distinctions between cultural and creative industries stem from a combination of inherent definitional difficulties in delineating "culture" and "creativity," distinct national traditions in understanding these categories, and the politics of cultural policy and the impact of government priorities at the time on how the

relevant sectors are defined and their roles conceptualized. In the critical humanities, however, the political and ideological weight ascribed to these various industry signifiers is far stronger. The phrase "culture industry" derives from neo-Marxist ideology, in which the emergence of industrialized cultural production in the early twentieth century was regarded - and is still considered by many critical thinkers - as encouraging "class domination," a "capitalist lifestyle," and a "industrialized society" (Flew, 2012).

Richard Florida's work (2002) has enhanced research on the importance of creativity as a driver of economic progress. His creative class focuses on the presence of persons working in creative fields. In fact, he suggests three primary elements influencing the relationship between the creative class and economic growth: talent, tolerance, and technology. The presence of a big creative class creates a social milieu in which minorities and minority points of view are widely accepted (tolerance). Furthermore, the presence of the creative class enhances an area's desirability as a location to dwell for highly educated individuals (talent). Social variety, creativity, and talent make a place appealing as a location for (high-tech) enterprises and encourage organizational innovation in this sector (Stam, De Jong & Marlet, 2008).

The recent experience of economic transition in former planned economies has shed fresh light on this classic issue, highlighting new concerns about suitable economic policies that impact the allocation of scarce investment resources. China's relatively successful experience has been characterized by geographically uneven growth, which began in the East and coastal areas and was subsequently expanded to the West and interior. This progression mirrored early policy choices to construct a number of special economic zones and coastal open spaces (Litwack and Qian, 1998).

China is not the first country to use special economic zones, the Export Processing Zones, or EPZs, as a growth strategy. In fact, before China, India, and the East Asian marvels (Hong Kong, Singapore, Taiwan, and South Korea) used identical techniques. The usage of EPZs as export promotion development tactics has also been ascribed to the exceptional economic growth performances of Hong Kong, Singapore, Taiwan, and South Korea (Leong, 2013). Following the success of China's economic reforms, scholars and politicians have actively discussed the benefits of special economic zones (SEZs), even as the number of SEZs has swiftly expanded internationally. While research has actively studied the influence of these zones on national and, in some cases, regional growth and employment, there has been little theoretical and empirical attention on the highly concentrated zones.

Alkon (2018) proposes a theoretical framework based on the political and economic incentives faced by local politicians to explain why SEZs have not created developmental spillovers. The concept predicts that place-based export policies such as SEZs may be advantageous to local development only when local authorities are encouraged to promote such growth through elections or promotion (as in China) and rent extraction is appropriately restricted. One of the primary elements of current globalization is the expansion of special economic zones (5,383 SEZs across 147 economies in 2019) globally (UNCTAD 2019), particularly in poor nations.

A wide range of economic activities is considered as a creative industry, such as architecture, art, tourism, digitalization, fashion industry, innovation, etc. Sepashvili (2020) reviewed ten leading countries using UNCTAD (United Nations Conference on Trade and Development) data on e-commerce sales, where he revealed that the policy of digitalization of the e-commerce industry (through E-banking and E-signature) significantly increases the development of this

industry. And Figus (2020) argues about the importance of effective transformation of innovation and human development to build an adequate and modern policy of Kazakhstan. Considering one of the main branches of the Italian economy, Angeloni (2013) believes that the main determinants of competitiveness in this industry is also the development of human capital through the improvement of the educational system.

3 – The review of Special Economic Zones (SEZ)

3.1 – SEZ “Astana Hub”

3.1.1 – Structure of “Astana Hub”

Astana Hub is an international IT startup technopark. Conditions for the free growth of Kazakhstani and international technology enterprises are being developed here. Astana Hub's worldwide aim is to become a hub for the creation of creative projects, to build breakthrough IT firms, and to attract a critical mass of young and skilled IT workers from across the world. The technopark was established on behalf of Kazakhstan's President, Nursultan Nazarbayev, as part of the fifth direction - the development of the innovation ecosystem - of the state program "Digital Kazakhstan." Astana Hub is a strategic initiative for the country's digital development. All Astana Hub solutions are geared at the development of technical startups and the enhancement of the innovation culture (Astana hub, n.d.).

Astana Hub offers two entrepreneurial development programs: acceleration and incubation. The Astana Hub acceleration program is a procedure that accelerates the development of early-stage businesses. Projects that meet the selection criteria are given the following tools to help them improve their business performance more quickly: mentoring from successful entrepreneurs, tracking, 300 hours of training and consultations, networking with the best market teams, part-time developers, free office space, and media PR promotion.

“Incubation” is a broader, more complete program for the growth of nascent IT ventures. Participants receive access to a single coworking space, help recruiting funding, access to a knowledge source, professional counsel, and media exposure. Participants in the initiative will be prepared for acceleration in the Astana Hub Technopark. The technopark also houses the Sheberkhan prototype laboratory and R&D facilities of local and foreign IT enterprises, in addition to startup development programs. This provides Astana Hub inhabitants with the ability to create prototypes and conduct research.

Additionally, work is being done based on Astana Hub to help entrepreneurs targeted at generating business innovations. The primary goal of this platform is to combine responsibilities for business startups and standardize this work within a full-fledged laboratory. On this platform, companies may address real-world challenges and develop long-term partnerships with enterprises. Astana Hub also runs educational programs. The technopark will serve as the foundation for the academy, a platform for the execution of educational programs in the field of technology business. Full-time (online) and part-time training will be provided (online). The material and instructional program will be based on best practices from across the world as well as the demands of market players. In general, Astana Hub serves as a platform for crowdsourcing ideas, hosting networking events, master workshops, and training sessions for members of the Kazakh and international IT communities.

The worldwide openness of the technopark distinguishes it. Foreign participants will be actively involved in collaboration (entrepreneurs, professionals, and IT investors), allowing

Astana Center to secure the status as a regional hub for the global innovation ecosystem. On the hub's territory, English law and a specific tax structure apply to both Kazakhstani and international players. The law on venture finance was passed in July 2018, which protects parties to hazardous transactions and simplifies visa and labor regimes for international players in the Astana Hub International Technopark.

3.1.2 – Facilities for participants

On December 27, 2018, the President of Kazakhstan signed a law that exempts Astana Hub participants from paying certain taxes: IIT*, CIT**, VAT*** and social tax on non-residents.

* 0% IIT – Individual Income Tax for employees of Astana Hub participants,

**0% CIT – Corporate Income Tax, including on:

- income of Astana Hub participants in the form of property received free of charge from venture funds;
- income of venture funds in the form of gratuitously received property intended for transfer to Astana Hub participants;
- dividends and value gains: for residents -0%, for non-residents 5% (less than 3 years), 0% (over 3 years);
- income of non-residents from royalties and from the provision of consulting, marketing, engineering services, work on the creation of a data center

*** 0% VAT on the turnover of goods, works and services sold in the territory of the Republic of Kazakhstan, as well as on the turnover for the import of goods according to the list.

Such measures will enable Kazakhstan to become a more appealing country for international investors, experts, and participants, as the export potential of the domestic IT sector grows, technologies and competencies expand, and the international competitiveness of Astana Hub residents' goods, works, and services improves.

The Astana Hub infrastructure is being created on the basis of Expo (Pavilion C 4.6) and consists of 4 floors of 2000 sq.m for each floor:

- 1st floor - multi-space, classrooms, business gallery and outdoor coworking;
- 2nd floor - coworking area for hosting startup teams for the period of the acceleration program;
- 3rd floor – coworking area for startup teams, office space, R&D center for VR project development and information center;
- 4th floor - office space for partners and administration of Astana Hub.

3.1.3 – Documents required to participate in the Technopark

To register as a participant of the Technopark, the following documents will be required for the application:

1) *document on state registration:*

a. legal entities – residents of the Republic of Kazakhstan - certificate of state registration (re-registration) of a legal entity;

b. non-resident legal entities of the Republic of Kazakhstan – a document confirming state registration in the country of incorporation, indicating the state registration number or its equivalent;

2) a copy of the document confirming the authority of the person acting on behalf of the Applicant when submitting the Application, if such a person is appointed by the Applicant;

3) the business plan of the project (Table 1), formed by the Applicant on the web portal defined by the Technopark, with mandatory completion of the form.

4) information on the absence (presence) of arrears, accounting for which is maintained in the tax authorities, exceeding six times the size of the monthly calculation index established for the relevant financial year by the law on the republican budget, issued not earlier than 10 (ten) calendar days prior to the date of filing the application. These documents are not provided by non-residents of the Republic of Kazakhstan;

5) information about the location where the Applicant plans to carry out activities;

6) information on the number of non-residents and residents planned to be involved in the implementation of the project (estimated number and term).

№	The list of information required for the description in the business plan of the project
1	Project name and description
2	Location of the project
3	The basis for the ownership of the project (own development, license)
4	Information about the developer / author of the project
5	The purpose and objectives of the project
6	Project readiness stage
7	Key performance indicators (KPIs) of the project
8	Technical description of the project (architecture, structure, applied solutions)
9	Estimate of the planned costs for the implementation of the project
10	Method of sale expected revenue (income)
11	Clients/potential clients
12	Action plan required for the project implementation (description of specific measures (steps) required for the implementation and development of the project)
13	Types of goods, works, services, property rights offered under the project and the annual volume of estimated sales
14	Justification of the need to implement the project (social significance and the effect of successful implementation)
15	Information about patent and license protection, copyrights, trademarks and other intellectual property objects (if available).

Table 1 - Information required for the description in the business plan of the project

3.1.4 – Field of information and communication technologies. Priority activities

List of “priority activities” in the field of information and communication technologies:

1. Development, implementation, maintenance, development, modification and implementation of software and software product.
2. Creation, experimental and industrial operation, implementation, development, modification, maintenance of information systems (with the exception of information systems of state bodies).
3. Data processing activities (knowledge discovery in databases) using software.
4. Fundamental and applied research, experimental developments in the field of natural and technical sciences, the implementation of research, development or experimental technological work in the field of information and communication technologies and the implementation of the results of such research and development.
5. Development, implementation, maintenance, modification, or separate stages of development (research, design (construction), technical testing and production) of technologies, devices and systems of micro-, opto- and nanoelectronics, microelectromechanics, installation of printed circuit boards and implementation of the results of such developments.
6. Development, implementation, maintenance, modification or separate stages of development (research, design (construction), testing, technical testing) of technologies, devices and systems of robotics and implementation of the results of such developments.
7. Development, implementation, maintenance, modification, (research, design (construction), testing, technical testing) of technologies, devices and systems of radar, radio navigation, radio communication, radio control, radio frequency identification and implementation of the results of such developments.
8. Development, implementation, maintenance and modification or separate stages of development (research, design (construction), prototyping, testing, technical testing), production of technologies, equipment, and devices in the field of information and communication technologies, telecommunication technologies, devices and biometrics systems and implementation of the results of such developments.
9. Development, implementation, maintenance, development, modification, production, sale, installation, commissioning (all the above-mentioned works together or part of them) of technical, software-based information processing tools in protected execution, software, hardware and software in the field of information security, including software-technical methods and means of ensuring information security.
10. Development, modification, implementation, operation, and maintenance of software and (or) hardware and software complexes using cloud computing technologies.
11. Development, implementation, modification, maintenance of software and (or) hardware and software complexes based on or using blockchain technology.
12. Development, implementation, maintenance and modification and implementation of unmanned vehicle control systems, as well as systems and devices for satellite navigation, mobile communications, and emergency call of operational services in transport.

13. Development, implementation, maintenance, modification, or separate stages of development (research, design (construction), technical testing) of artificial intelligence technologies, devices and systems and implementation of the results of such developments.

14. Activities for the provision of services for the provision of software and technical capabilities via the Internet for establishing contacts and making transactions between sellers and buyers (provision of a trading platform operating on the Internet in real time) using software developed by a participant of the Astana Hub International Technology Park.

15. Development, maintenance, development, modification, implementation of the concept of a computing and communication network of physical objects equipped with built-in technologies for interacting with each other or the external environment (Internet of things).

16. Development, implementation, maintenance, modification of computer, mobile, online games (video games).

17. Provision of training services in the field of information- communication technologies in the following areas: architecture and administration of software, architecture and administration of network systems, design and development of information systems, architecture and design of solutions in the field of the Internet of Things, development of solutions based on software and hardware platforms, development of operating systems, development of web applications, algorithms (artificial intelligence, cryptography and others), analysis and work with big data, mobile application development, security in the field of information and communication technologies, development of interactive 3D applications, applications with virtual and augmented reality, video game development, programming languages.

18. Development, implementation, maintenance, modification or separate stages of development (research, design, technical testing) of virtual and augmented reality technologies, software design and implementation of the results of such developments.

19. Services for providing complex computing infrastructure for performing computing operations and data processing (except for data processing centers (Data centers) that provide infrastructure to persons engaged in digital mining activities).

3.1.5 – Implemented programs of “Astana Hub”

“Astana Hub” has implemented numerous programs for the development of different activities:

1. *Report on the startup project acceleration program* (Table 2).

The Acceleration Program (accelerator) is a series of initiatives designed to speed the development of innovative ventures. According to the startup project acceleration program, three streams were held in 2020: The program's streams 7, 8, and 9 had a total of 94 participants, and 91 startup projects were released. The final event - Demo Day - was conducted at the end of each stream.

Program Streams	Number of startups participating in the program
1 stream 7.02.18 - 5.05.18	8

2 stream 2.07.18 - 13.10.18	12
3 stream 01.11.18-28.12.18	27
4 stream 02.04.19- 15.07.19	31
5 stream 15.09.19- 15.12.19	30
6 stream 15.09.19- 15.12.19	30
7 stream 27.04.20 - 27.07.20	31
8 stream 20.07.20 - 20.10.20	33
9 stream 17.08.20 - 15.10.20	30
Total	232 took part 229 graduated

Table 2 - Report on the startup project acceleration program

2. *Report on the online mentoring program for startup projects (Table 3).*

The online mentorship program is designed to assist startup ventures at the concept stage in determining the sustainability of their ideas and providing development assistance. Participants in the program are given a tracker to help them with their growth. By the end of 2020, four streams of the Online Mentoring program had been completed, and the total number of startups sponsored by the technopark this year is 233 projects from around Kazakhstan. Participants in each stream learned the fundamentals of startup development; upon completion of training, a tracker was given to each project to help with project development.

Program Streams	Number of accepted participants
1 stream 2019	100
1 stream March 2020	14
2 stream May 2020	73
3 stream July 2020	80
4 stream September 2020	66
Total	333

Table 3 - Report on the online mentoring program for startup projects

3. Report on the "Tracker School" program (Table 4).

The Tracker School program was developed to expand the number of Kazakhstani professionals in the field of monitoring startup projects and to attract projects to tracking on the Foundation's programs (Acceleration, Incubation, Online Mentoring, and so on). Participants are taught the fundamentals of tracking as part of the curriculum.

The training consists of two stages:

- 2 days of theoretical training;
- 2 months of practice with real startups.

During the workshop, participants were taught the technique of working with startups, specifically how to work with the customer development methodology, how to work correctly on HADI cycles, construct hypotheses, and appropriately decompose them for high-quality work. Also covered are the nuances of dealing with startups and how to accurately identify their shortcomings and spots of potential growth.

By the end of 2020, two streams of the program had been held, with 50 trackers participating. At each stream, participants received a two-day comprehensive training on contemporary technologies and tools for working with startups. According to the schedule, webinars were held on May 13-14 and August 6-7, 2020.

Program Streams	Number of participants who have completed training
1 stream 2018	10
1 stream 2019	20
2 stream 2019	12
1 stream 2020	25
2 stream 2020	25
Total	92

Table 4 - Report on the "Tracker School" program

4. Report on the "Startup School" Program (Table 5).

Startup School is a two-day event designed to increase public awareness of technological entrepreneurship. Anyone can join in the course, which gives training on the fundamentals of building startup projects.

In 2020, three streams of training were held as part of the Startup School program, with a total of 1113 individuals admitted. Training on the fundamentals of founding and developing companies was provided in an online manner on the Foundation's Youtube account for two days at each stream.

Program Streams	Number of participants who have completed training
1 stream December 2018	122
2 stream December 2018	132
3 stream June 2019	150
As part of the Roadshow in the regions of the country November-December 2019	1 193
1 stream June 2020 (online)	465
2 stream August 2020 (online)	292
3 stream September 2020 (online)	356
Total	2710

Table 5 - Report on the “Startup School” Program

5. *Report on the incubation program* (Table 6).

The online mentorship program is designed to assist startup ventures at the concept stage in determining the sustainability of their ideas and providing development assistance. Participants in the program are given a tracker to help them with their growth.

27 business concepts were chosen to participate in the incubation program in 2020. Training in no-code programming on the Bubble platform, as well as website creation on Tilda, was provided as part of the curriculum. Startups are now completing prototype training, finalizing projects with trackers, and ready for release.

Program Streams	Number of startups participating in the program
1st stream July 2018	52
2 stream November 2018	90
3rd stream March 2019	17
4 stream April 2019	24
5 stream October 2020	27
Total	210

Table 6 - Report on the incubation program.

6. *Report on the development program of regional partners (technoparks, accelerators and incubators).*

The Foundation has devised a program for the development of regional partners in order to promote the Republic of Kazakhstan's innovation ecosystem (hereinafter referred to as the Program). The initiative is intended to help and grow regional technology parks, accelerators, incubators, and coworking spaces so that in the future, everyone in their region can broadcast or organize large events on their own. You must satisfy specific requirements to participate in this program. If all of the criteria are met, it is necessary to submit an application on the Technopark's website, where the commission selects participants, based on the results of which the selected participants will receive support from the Technopark in the form of educational courses, methodology, expert support, and, in general, can adopt the Technopark's methodology.

Program objectives:

- development of technological entrepreneurship;
- development of corporate innovations;
- attracting and activating participants of the innovation ecosystem;
- popularization and stimulation of innovation development;
- scaling solutions;
- development of venture financing;
- attracting IT companies to receive tax preferences.

At the time, the partners have been selected for the program "Incubation of startup initiatives in the regions" and are in the incubation stage in their respective areas. Applications were accepted between the dates of 04.05.2020 and 24.05.2020. Six applications were submitted in total. Following the results of the commission meeting for application selection and compliance with all of the Program's criteria, it was decided to conclude agreements with three regional technoparks with a validity period until the end of this year as a pilot project, which will provide understanding and vision for the development of regional partners:

1 - International Startup Academy at the RSE at the Pavlodar State S. Toraihyrov University, Pavlodar,

2 - Regional Smart Center (Digital hub "Parasat") at Kostanay State University named after A.Baitursynov, Kostanay,

3 - Technopark Algorithm LLP, Uralsk.

3.2 – SEZ “Park of Innovative Technologies” (also “PIT Alatau”)

3.2.1 – Mission, prior activities, and advantages of SEZ “PIT Alatau”

The Special Economic Zone "Park of Innovative Technologies" (hereinafter SEZ "PIT") was created in accordance with the Decree of the President of the Republic of Kazakhstan No. 1166 dated August 18, 2003, valid until January 1, 2028. Location: Almaty city, Kazakhstan. Total area – 163.02 ha (Alatau Technopark, n.d.).

The SEZ was created in order to:

- technological development of the following areas:

- information technology;
- technologies in the field of telecommunications and communications;
- electronics and instrumentation;
- renewable energy sources, resource conservation and efficient use of natural resources;
- technologies in the field of creation and application of materials for various purposes;
- technologies in the field of oil and gas production, transportation and processing;
- activation of the entry of the economy of the Republic of Kazakhstan into the system of world economic relations;
- the creation of highly efficient, including high-tech and competitive industries, the development of new types of products, attracting investment.

Priority activities of the SEZ "PIT":

1. formation of a modern infrastructure of the SEZ, including the development of business plans, design and estimate documentation, construction and installation work, work on the improvement of the territory of the SEZ;
2. retraining and advanced training of highly qualified specialists in the areas corresponding to the objectives of the creation of the SEZ "PIT";
3. design, development, implementation, pilot production and production of software, databases and hardware, as well as data center services, online services in areas corresponding to the objectives of the creation of the SEZ "PIT";
4. creation, implementation and promotion of new technologies in areas corresponding to the objectives of the creation of the SEZ "PIT";
5. marketing research in areas corresponding to the objectives of the creation of the SEZ "PIT";
6. carrying out research and development work on the creation and implementation of projects in areas corresponding to the objectives of the creation of the SEZ "PIT";
7. production of word processing machines, copying and multiplying equipment, addressing machines, calculators, cash registers, marking machines, ticket machines, production of other office machines and equipment, electronic computers and other information processing equipment;
8. production of electrical and radio elements, transmitting equipment, equipment for receiving, recording and reproducing sound and images;
9. production of household electrical appliances;
10. training of personnel for bachelor's, master's, doctoral PhD programs in areas corresponding to the goals of the creation of the SEZ "PIT";
11. business incubation of projects in the areas corresponding to the goals of the creation of the SEZ "PIT", implemented within the framework of programs of state bodies to support industrial and innovative activities.

Advantages of SEZ "PIT":

SEZ participants are exempt from payment:

1. corporate income tax
2. property tax
3. land tax

4. fees for the right to use land plots, but not more than 10 years from the date of provision of land plots

5. taxation of VAT at a zero rate for the sale of goods to the territory of the SEZ that are fully consumed during the implementation of activities that meet the goals of creating such a SEZ, according to the list of goods determined by the Government of the Republic of Kazakhstan.

3.2.2 – Main centers

The major routes of innovation cluster development include attracting anchor transnational businesses (TNCs) to form joint ventures to construct Technology Development Centers, high-tech enterprises, and laboratory complexes (50 percent co-financing). Five centers have been created:

1. *IntelliSense Digital Industry Center-LAB*

Tech Garden inaugurated the Intellisense-LAB Digital Industry Center in June 2018 in collaboration with TNK "IntelliSense.io Limited" (UK) for the development and application of Industry 4.0 technologies. The technology framework of industrial automation and digitalization for improving subsurface users' production processes (MMC, NGS, energy, transport) enables you to design solutions that employ Artificial Intelligence to decrease costs and boost productivity.

Development and implementation of strategies for the automation and digitalization of technological business processes in Kazakhstani industrial enterprises in order to create a critical mass of "mayaks" - market drivers (20% of the pool of MMC, NGS, mechanical engineering, etc.) actively introducing new technologies in order to gain financial and operational advantages. Brains.app is an industrial artificial intelligence platform that allows you to make real-time choices in the mining, oil and gas, manufacturing, energy, and logistics industries. This platform generates a process modeling environment that is constantly synchronized with real-time data, identifies process bottlenecks, runs "what if" scenarios, and instructs operators on how to choose the most effective solution in such instances. The study of big data enhances the efficiency of technologies and equipment. A module that allows you to assess an enterprise's business operations in order to create plans and phases for automation, making this process more productive.

2. *BIM+ Laboratory*

The BIM+ Laboratory Center launched in January 2019 in collaboration with TNK EcoDomus Inc (USA) to digitalize the whole life cycle of facility development, including industrial facilities, in order to minimize operating costs. The BIM+ Laboratory technology center's activity is aimed at solving the tasks of implementing BIM technology (Building Information Modeling) at the stage of operation of construction facilities, as well as the use of related technologies, such as the Internet of Things and Big Data, in the civil and industrial construction sectors, for automation of facility maintenance and operation.

The technique is based on the Digital Twin idea and is intended to solve Industry 4.0 difficulties. Digital twins based on an interface based on a BIM model are a comprehensive solution for the interaction of humans, sensors, equipment, and artificial intelligence in the management of a construction item for data monitoring, information registration, and prompt decision-making. A shooting technique that enables the creation of a digital representation of the surrounding objects, which is represented as a "3D point cloud" with coordinates. A BIM

model is then constructed based on the point cloud. Creating a three-dimensional model of items linked to a database, with each element of the model being able to be allocated all of the essential characteristics. Implementation of software based on BIM models that decreases the cost of keeping an item during maintenance and operation, as well as allowing you to store asset records. Making a digital replica of a physical object or process to aid in the optimization of the technical process.

3. *"Tech Garden" and Center for New Materials and Additive Technologies*

Tech Garden inaugurated the Center for New Materials and Additive Technologies in December 2018 in collaboration with TNK Metalysis Inc. (UK). Carry out the transfer of innovative technology for the manufacturing of metal powders, which will lower production costs by 35%, as well as treat tailings and dumps from Kazakhstan's MMC.

Creation of a critical mass of technological businesses through the worldwide Startup Kazakhstan acceleration program. Tech Garden conducted the Startup Kazakhstan international acceleration program under the auspices of the Republic of Kazakhstan's Ministry of Industry and Infrastructure Development. Its goal is to build a critical mass of high-tech firms in the small and medium-sized company sector. Startups were sought, accelerated, and funded in important sectors such as Industry 4.0, new materials and energy, Smart City, and FinTech. The worldwide venture fund Tech Garden Ventures was established to finance and attract investments in businesses.

Three waves of acceleration were carried out, around three thousand applications were reviewed, and 96 new enterprises received funding totaling approximately 990 million tenge. All startups signed an investment agreement and established an LLP in Kazakhstan. The funds are paid to these firms' accounts, and according to the conditions of the contract, startups must use the funds solely for the development of their product in Kazakhstan. Each firm received up to 31 thousand US dollars in investment. These are the initial investments that establish a startup's venture history. Each team went through a three-month accelerated program. The accelerator program includes diagnostics for each firm, followed by a specific roadmap for its development in Kazakhstan.

Tech Garden organizes international field visits for company executives and managers who make judgments on the technological upgrading of manufacturing and commercial operations. In 2017, 10 enterprises from Kazakhstan's special economic zone "Park of Innovative Technologies" and ten corporations from the Republic of Kazakhstan received corporate acceleration in Silicon Valley, California. Representatives from 10 firms — the country's oil and gas, mining, metallurgical, and energy sectors, MIIR, and Samruk-Kazyna — experienced corporate acceleration at leading South Korean organizations in November 2019.

The company acceleration program provided by Tech Garden is the quickest and most adaptable tool for technology deployment. Diagnostics of your business, task creation, technical solution selection, development, and operational piloting of automation and digitalization projects in practice are all completed in a timely manner. The organization has the possibility to obtain a technology solution that is specifically tailored to certain business needs. The introduction of new advancements results in revenue growth or cost savings through the introduction of new goods and services.

The autonomous cluster Fund "Park of Innovative Technologies," which operates under the Tech Garden name, is an operator for the implementation of research and development activity for subsurface user firms in accordance with their requirements to deduct 1% of SRS/ZND. Tech

Garden creates a trust fund from subsurface user responsibilities to finance innovation cluster initiatives worth at least 1% of the SRS (production costs from 2018). From March 2015 until March 2020. As part of their requirements to transfer 1% of the SRS, the Republic of Kazakhstan's subsurface users signed 119 contracts with the AKF totalling 11.18 billion tenge. From these funding, 120 projects of the "PIT" innovation cluster participants were funded for a total of around 8 billion tenge. For the remainder, there is an ongoing hunt for subterranean users who can fulfill technological duties.

4. *Smart Industry Management Platform (SIMP)*

Smart Industry Management Platform (SIMP) is a supermarket platform of local IT solutions for scaling at Republic of Kazakhstan industrial businesses. The platform's goal is to support the digitization of the country's economy and the growth of local technology enterprises. On the platform, a pool of high-quality IT solutions is built, and industrial businesses set their actual jobs. Thus, according to the idea of "open innovation," industrial organizations may immediately obtain the most effective solutions for their jobs from local IT companies, including Tech Garden's Technology Development Centers. The industry becomes familiar with the world's best practices for developing a successful digitalization strategy and gains access to a selection of already proven solutions from which to select the finest. IT businesses are the first to get knowledge about industrial organizations' duties and demands, and they are the first to provide solutions to them.

4 – Conclusion

The significance of Special Economic Zones in the ICT industry in the growth of the creative industry is highly important, since they generate advantageous business circumstances for both local and international enterprises, and they are all located in large cities such as Almaty and Nursultan. Almaty is Central Asia's only city to be listed in the UNESCO network of creative cities in the creative direction of "music." It is intended to start the Open Music Lab in 2022 to compose modern music and collaborate with the laboratory's resident artists. The Alatau creative center, which employs up to 700 people daily, is the city's first successful infrastructure project in the sector of creative industries. There includes a coworking space, 25 free creative groups for kids, a master class playground, a media library, and an ArtBi teaching and exhibition center. Similar facilities are being built in all of the city's districts. A network of creative haves will be established in each district of the city in the future (*Za 10 let obem, 2021*).

Nursultan has founded the Council for the Development of Creative Industries. The Council will be involved in developing proposals for the development of creative entrepreneurship and the potential of the city, identifying barriers to the development of the creative economy and proposing solutions to these barriers, and working out the issue of developing new instruments of state support for the development of the creative economy.

As a conclusion, it can be argued that the formation and development special of economic zones of the ICT industry for the development of the creative industry in Kazakhstan may promote to:

- mass expansion of the creative cluster of the big cities of Kazakhstan;
- development of entrepreneurship in the creative industry;
- the formation of a high-quality creative product.

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