


<https://doi.org/10.21272/hem.2021.2-06>

JEL Classification: D51, E20, F01

Halyna Mishenina,

Ph.D., Associate Professor, Sumy State University, Ukraine

 ORCID ID, 0000-0003-4366-1864

email: misheninag@management.sumdu.edu.ua

Dmytro Kirichenko,

Sumy State University, Ukraine

email: 97kirich@gmail.com

Viacheslav Puzemsky,

Lithuania

email: seconnect@seconnect.lt

Correspondence author: misheninag@management.sumdu.edu.ua

COVID-19 IMPACT ON THE COMPANY'S DEVELOPMENT: A CASE OF UNIT.CITY

Abstract. This article addresses problems and directions of innovative activity of real national economy amidst the COVID-19 pandemic. The authors evaluated the pandemic impact on the business state in the studied industry. The problem of the economic efficiency restoration after removing quarantine restrictions relates to the search for effective tools to overcome the COVID-19 crises consequences and boost innovative economic development. The research purpose is to substantiate the development potential of innovative entrepreneurship and identify ways of UNIT.City performance improvement against quarantine. The research object is the Ukrainian innovation park UNIT.City. The subject of the study is the organizational and economic, social relationships in UNIT.City activity. The methodological basis of the study is a systematic approach and the fundamental principles of general economic theory and management theory. For practical implementation, the study involved the research methods as follows: abstract-logical and system-structural analysis to identify problems that decrease the economic performance of Ukrainian enterprises and, especially, UNIT.City; methods of statistical and expert assessments to determine the prospects and possibilities for developing companies in the innovation sector and UNIT.City. The research covers 2019-2020. The study involved the analysis of the main macroeconomic indicators of Ukraine during and after quarantine restrictions. The organizational and economic mechanism of UNIT.City innovation park functioning against the quarantine restrictions is investigated. The authors identified the prospects and problems of the investment activity in the Ukrainian IT sector and the government's role in promoting the technology sector. The findings identified the main ways for improving the management mechanisms and developing the innovation park UNIT.City during and after quarantine restrictions. Besides, the study suggested the tools for effective management and the prospects for further development in UNIT.City innovation parks during quarantine. The authors supposed that changes in the IT sector may aggravate the crisis or contribute to the national economic recovery due to its digitalization. Further research could address the analysis of the COVID-19 pandemic impact on the innovation enterprises and UNIT.City activities, in particular.

Keywords: quarantine restrictions, pandemic, innovation, entrepreneurship, cluster, innovation park, IT sector, investment, enterprise, economic activity.

Introduction. The world society, global and local socio-economic processes were significantly affected in 2019-2020. Each country more or fewer losses incurred heavy casualties in all social and economic spheres since the snowballing COVID-19 spread. The governing bodies of most countries were forced to implement efforts to crack down on the pandemic and optimize the ratio of sick people to the available hospital beds.

Cite as: Mishenina, H., Kirichenko, D., & Puzemsky, V. (2021). COVID-19 Impact on the Company's Development: a Case of Unit.City. *Health Economics and Management Review*, 2, 58-70.
<http://doi.org/10.21272/hem.2021.2-06>



Indeed, Ukraine was no exception. On 25 March 2020, the Cabinet of Ministers of Ukraine imposed a state of emergency nationwide. Thus, the emergency regime introduced several measures as follows: mandatory requirement to wear face masks in public; body temperature check before visiting public facilities; cancellation of all mass events; closure of cultural, entertainment, trade, and educational facilities; imposing restrictions on entry and exit to other countries, as well as movement within the country; transition to remote work and study, etc. (Resolution, 2020). As a result, most socio-economic spheres suffered enormous losses. Many small and medium businesses significantly reduced their staff and costs or declared themselves bankrupt. Due to the pandemic, the GDP of the Eurozone countries decreased by an average of 3.6% in the first quarter of 2020. Notably, the lowest drop rates in the GDP were observed in Italy – 5.3%, France – 5.3%, and Spain – 5.2% (Center for Applied Research, 2020). In turn, in the first quarter of 2020, the level of GDP decreased by 1.3% compared to the previous year. However, the Ukrainian economy suffered the most significant losses in the second quarter, where real GDP drop by 11.4% at an annual rate. The severe quarantine restrictions reduced the domestic demand. It was a precondition for the deterioration of the socio-economic situation. It stands to mention that the most challenging period for Ukraine and the whole world turned out to be April. This time, the number of COVID-19 patients rapidly increased, while the sanitary and epidemiological measures were intensified.

After easing the quarantine restrictions, the world business activity began to recover gradually. Therefore, from May 2020, most areas of economic activity began to restart work processes. Table 1 shows the dynamics of recovery of some significant areas of economic activity.

Table 1. Dynamics of resumption of activities by Industry sectors of Ukraine, April-June 2020

Industry sector	Decreasing output sold/services		
	April	May	June
Production sector	16,2%	12,2%	5,6%
Cargo carriage	27,2%	26,0%	18,3%
Passenger transportation	95,9%	92,3%	72,0%
Construction	16,0%	2,6%	0,1%

Sources: developed by the authors based on (One philosophy, 2020).

In general, from January to June 2020, only retail trade increased in turnover. In turn, there was a decline in all other fields such as construction, agriculture, industrial production, wholesale trade, and passenger and freight traffic (Table 2). Following the estimations by the Ministry of Economic Development, Trade and Agriculture of Ukraine, GDP in the first half of 2020 decreased by 6.5%.

Table 2. Comparison table of production and sales change, 2019-2020

Industry	January-June	January-June
	2019	2020
Agriculture	5,8% ↑	18,7% ↓
Cargo carriage	3,4% ↑	19,6% ↓
Passenger transportation	3,0% ↑	55,9% ↓
Retail	10,5% ↑	3,0% ↑
Wholesale	0,2% ↓	0,5% ↓
Industrial production	1,3% ↑	8,3% ↓
Construction	25,3% ↑	5,5% ↓

Sources: developed by the authors based on (NGO, 2020; Cabinet of Ministers of Ukraine, 2020).

Although strict restrictions and unfavorable socioeconomic conditions, the dynamics of Ukraine's domestic prices in 2020 remained lower compared to the previous years. The temporary decrease in

demand due to the COVID-19 pandemic significantly affected internal and external trade. However, the goods and services market supply decreased slightly. Thus, the prices did not increase substantially. In contrast to changes in production, the real salary decreased only in April 2020 (compared to the previous year). Notably, the average monthly salary of a full-time employee ranged from 10-11 thousand UAH in January-June 2020. It is worth emphasizing that the consumer demand conservation and the positive dynamics of salary contributed to mitigating the negative lockdown consequences.

On the other hand, the employment level decreased in Ukraine and worldwide during the quarantine period. Notably, businesses were forced to put employees on leave at their own expense and reduce staff. Table 3 shows the unemployment indicators in Ukraine for the first and second quarters of 2020 (SSSU, 2020a).

Table 3. Unemployment level in Ukraine, Q1-Q2 2020 (ths.)

2020	Total population	Economically active population	Employed population	Unemployed population	Unemployment level	Registered unemployed
QI	41830,6	17329,9	15781,3	1548,6	8,9%	349,4
QII	41762,1	16992,1	15362,0	1630,1	9,6%	517,7

Sources: developed by the authors based on (SSSU, 2020a; Cabinet of Ministers of Ukraine, 2020).

Following the official data by the State employment service of Ukraine, the unemployment rate was 9.6% at the end of the second quarter of 2020. Therefore, almost one in ten Ukrainian lost his job (SSSU, 2020a). Notably, beginning in June, the situation started to improve, and the number of unemployed had a declining trend. COVID-19 pandemic affected foreign trade. Herewith, due to the lack of significant fluctuations in the dollar, exports met less losses than imports. According to the State Statistics Service, exports from Ukraine decreased by 1.7 in 2020, while imports – by 9.3% compared to the previous. At the beginning of 2020, Ukraine traded with 215 countries. The most significant exports were to China (1.78 bln USD), while China has become the strongest importer in Ukraine (2.4 bln USD). On the other hand, Ukraine shipped goods that amounted to 6.19 bln USD to the European Union and received about 7.31 bln USD. The total amount for imported goods from Russia was 1.56 mln USD, to Russia – 889.2 mln USD. One more area that suffered severe losses is foreign investment. Table 4 shows that the foreign investments to Ukraine decreased by 2-3 due to the COVID-19 influence and socio-economic cessation led (SSSU, 2020b).

Table 4. Foreign investments, 2019-2020

Country	2019 (mln USD)	2020 (mln USD)
Germany	39,6↑	427,5↓
The Netherlands	186,1↑	178,4↓
France	79↑	45↑
Switzerland	104,3↓	112,1↑
Great Britain	36,2↑	21,8↑
Poland	45,9↑	48,0↑
Sweden	37,6↑	38,4↑
Belarus	22,1↑	20,4↓
Japan	29,6↓	24,4↑
Austria	68,2↑	38,5↑
USA	58,1↑	22,8↑
Cyprus	248,3↑	366,3↓
Russian Federation	141,5↑	10,5↑
EU countries	791,6↑	1735,1↓

Sources: developed by the authors based on (Analytical Portal, 2020).

Data analysis showed that Switzerland provided Ukraine with the largest revenues – 112.1 mln USD. It stands to note that in 2020, the investment outflow from Ukraine to the EU was 1.74 bln USD.

Quarantine measures raised a point to organize management among large and small enterprises worldwide properly. For maintaining business activity and entrepreneurship, it was necessary to make fast and specific management decisions.

The findings showed that general approaches for adaptation to quarantine measures were as follows: 1) temporary cost reduction and active implementing Lean-principles; 2) establishing trust-based and reliable relationships with suppliers; 3) retention of qualified and experienced employees and teams; 4) strengthening the company's reputation and its socially responsible attitude towards staff and consumers; 5) retaining customers during a crisis through an individual approach or certain loyalty programs.

In turn, it is possible to determine several trends of enterprise operation during the quarantine period as follows:

- 61% of heads of Ukrainian enterprises were forced to reduce the salaries for employees or put them on leave at their own expense due to the deteriorating economic situation. Besides, there were cases of staff dismissal due to payroll burden. Besides, more than half of the companies have changed their development and investment strategies;
- 29% of organizations temporarily shut down for lockdown;
- 39% of companies refused to rent some premises or agreed with the landlord to partially change the contract terms;
- 23% reduced the marketing and PR cost. Many entrepreneurs were forced to change their activities or close their businesses.

On the other hand, some companies benefited from quarantine. It was a good opportunity for development and improvement. Thus, 71% of organizations put new products on the market, while 10% – increased the budget for marketing services and market promotion. Approximately 61% of companies are to develop a new product or service soon, 58% focus on cost optimization, 55% prepare for entry into new partnership agreements and develop a strategy to improve customer service (One philosophy, 2020).

Besides, after the first wave of quarantine restrictions, some companies implement the latest technologies to change their business model to some extent. Moreover, approximately a third of domestic companies plan to expand their customer base and enter a new market. Many entrepreneurs plan to direct part of their income to train and develop the team.

Considered all, the activities of separate enterprises were and remain dependent on the preliminary crisis preparation, the completeness of risk assessment, the quality of forecasting, and the competent strategic planning of further organizational and production activities.

It is known that the success of the national economic development is closely linked to innovative developments, the emergence of new technologies, and the growth of high-tech production. In turn, stable, innovative development could contribute to overcoming the systemic COVID-19 crisis. Moreover, the country could take the lead among other developed countries in innovation and technological development. Following the annual report of the Global Innovation Index by the World Intellectual Property Organization (WIPO), the top 5 most innovative countries in 2020 were Switzerland, Sweden, the USA, UK, and the Netherlands. In this list, Ukraine ranked 45th among 131 countries. Notably, it is two positions higher compared to the previous year. Besides, Ukraine is included in the TOP-2 countries of the economic group lower-middle-income (Global Innovation Index, 2020).

Literature Review. The global COVID-19 pandemic retrogressed access to financial resources and capital markets. Conversely, it revealed the strategic importance of innovation and high-tech industries, particularly electronics, telecommunications and medical equipment, software, etc., for economic development. The development of the above activities rests on increasing the intellectual component of labor and requires additional investment in the commercialization of the knowledge and innovation sphere.

In particular, innovation parks (clusters) have recently become a promising tool for the active growth of innovation and technological progress. It stands to note that innovation parks concentrate resources and efforts of the public, private (business) sector, the scientific community, etc., for the development of innovation and startup culture. They are becoming centers of economic and social growth on both regional and national scales.

Therefore, studying the development of innovative entrepreneurship and stimulating innovation has been still relevant to many domestic and foreign scientists for several decades.

Notably, the theory of innovations, their impact on economic development, national economic and social security were investigated by Drucker (2007), Porter (1990), Lundvall et al. (1988), Freeman (Dosi et al., 1988), Howitt, (Aghion et al., 2005) and others. Approaches to the formation of strategies for innovation development and state innovation policy were considered by Amosha and Salomatina (2017), Alekseev and Urba (2016), Bubenko (2016), Geyets (2015), Hrynkevych and Kvak (2020), Demchyshak (2016), Dumanska (2020), Kvak (2017), Malitskiy (2016), Shovkalyak (2013), Yurynets (2016), et al.

The intellectual potential in the implementation of innovation and investment models of economic development, areas of stimulation and support of technology and innovation, as well as mechanisms to stimulate innovation and sources of funding, are reflected in sectoral reports, legislation, strategies (On Innovative Activity, 2002; SSSU, 2019; Resolution, 2019; Market Report 2019; IT Ukraine Association, 2018).

Methodology and research methods. This study involved the abstract-logical and system-based structural analysis to identify problems of enterprises' organizational development caused by the COVID-19 quarantine restrictions (in particular, the main activities of UNIT.City were analyzed). The study was conducted on real data presented in the open sources. The information basis of the study is the relevant sectoral analytical reports on the website of the State Statistics Service of Ukraine, etc., which determine the impact of COVID-19 and quarantine measures on the Ukrainian economy. The research covers 2019-2020. A systematic approach was used to determine areas for optimizing the enterprises' functioning (particularly, UNIT.City) during the quarantine conditions. The method of generalization was used to summarize the results and identify ways to overcome organizational and economic problems of the investigated enterprise. This article highlighted the need for further research into the prospects for the innovative development of the national economy, given the impact of the COVID-19 pandemic and its consequences.

Results. For Ukraine, as an EU potential candidate, it is essential to integrate into the EU technological environment and realize its innovation potential.

However, due to the COVID-19 pandemic, many entrepreneurs in Ukraine and worldwide have been facing the threat of a large-scale economic crisis and the problem of doing business. Herewith, the IT sector suffered to a lesser extent.

Indeed, Ukraine is a resource-constrained country with sufficient potential to become the leading innovative country in Eastern Europe. Recently, there has been a positive trend in the country's digitalization and innovation development.

Thus, the private developers, led by the state, have been creating the necessary conditions for developing the latest technologies for several years running. At the same time, the government serves as a legislative and direct executive role.

It stands to note that the Ministry of Digital Transformation of Ukraine and the Committee for Digital Transformation of Ukraine, and Committee on Digital Transformation plan to provide 100% access to public services to citizens and businesses online by 2024 to attract 6 million Ukrainians to the program of digital skills development (Diia, 2021).

In turn, the Ministry has already successfully implemented the following significant projects:

1. Diia. E-government (online public services that are constantly updated and technically improved).

2. Diia. Business (national project on business development, advisory assistance to representatives of the business environment).
3. Diia. Digital education (national digital literacy campaign).
4. Diia. Child safety on the Internet (protection of children from online threats).
5. E-Residence (online services for foreigners that provide them with remote access to public services) (Ministry and Committee, 2020).

The Ministry of Finance is also launching public services guidelines. It is an online information portal providing all services to the executive and local governments.

On the other hand, the project Diia City is a special legal regime for the IT industry, which would create the most potent IT hub in Ukraine in Central and Eastern Europe without boundaries for investment, job creation, or the development of new technologies. Ukrainians and entrepreneurs from all over the world would have the opportunity to quickly implement the most ambitious innovative and business ideas and implement them effectively. The main activities of Diia City are as follows:

1. Software development and testing, including the video games release.
2. Software release and distribution, in particular, Saas.
3. Training computer literacy, programming, testing, and software technical support.
4. Digital marketing and Ads using software developed by residents.
5. R&D in IT and telecom.
6. E-sports.
7. Delivering services related to the virtual assets' turnover.

Ukraine holds the No.24 spot in global rank on software technology attractiveness. Moreover, it is the largest IT services exporter in Europe. Meanwhile, following the Hacker Rank, Ukrainian developers hold the No.11 spot out of 50 countries. In 2017, Ukrainian companies and startups made 44 deals for 265 mln USD. In turn, more than 110 international companies and startups opened R&D offices in Ukraine. The IT outsourcing share (software development services, delivering infrastructure solutions for customers, etc.) would increase along with the market's overall growth. In 2017, this segment's revenue amounted to 64.3 bln USD (IT Ukraine Association, 2018). According to UNIT.City data, IT service export in 2025 would be 8.4 bln USD (Tech Ecosystem, 2019).

Further IT development is stimulated by consistently high demand, which holds the growth tendency due to the digital transformation and digitalization of all economic branches and society, the public sector. It stands to mention that the pandemic spread significantly accelerates IT development. Thus, a few years ago, the regional communities of IT companies were a phenomenon more typical for large cities, while nowadays, IT industries and innovation parks (clusters) appear in the small towns (IT Ukraine Association, 2018).

Notably, innovation parks are platforms for ecosystem development. Herewith, IT, tech and innovation companies, educational facilities, accelerators and incubators for startups, domestic and international companies focus on finding new solutions, technologies, and creating new businesses (Kharlamov, 2020; Dumanska, 2020).

On the other hand, cluster initiatives often include projects that are not directly related to the industry but aimed to support local or regional development, increasing their competitiveness at the national level. Among the participants of the clusters are both service and product IT companies.

The five most active IT clusters in Ukraine cover about 158 thousand specialists, or 85% of the total number in Ukraine. Table 5 shows the number of companies and specialists employed in the leading IT clusters in Ukraine.

Table 5. The number of IT-specialists and companies in TOP-5 IT clusters of Ukraine

IT cluster	Number of employees engaged in IT, specialists	Number of IT-companies
Kyiv IT Cluster	76000	1194
Kharkiv IT Cluster	31000	500
Lviv IT Cluster	25000	461
Dnipro IT Cluster	16000	378
Odessa IT cluster	10000	150
Total:	158000	

Sources: developed by the authors based on (Diia, 2021).

In general, currently, the Ukrainian IT sphere covers the following number of IT subjects (Resolution, 2019):

- 40 industrial parks (31 are in the Register of industrial parks);
- 26 science parks;
- 16 technology parks;
- 24 innovation and technology transfer center;
- 22 innovation hubs;
- 38 commercial centers;
- 24 innovative business incubators;
- 1 investment and technology cluster
- more than 30 clusters
- 1 innovation and production association;
- other startup schools.

Moreover, it stands to note that, on average, one cluster's employee provides 27 ths. USD of economic effect in Dnipro, while 42 ths. USD in Kharkiv (Table 6).

Table 6. The economic effect per one worker of TOP-5 IT cluster of Ukraine

IT cluster	The economic effect of IT industry, mln USD	The economic effect per one worker, ths. USD
Kharkiv IT Cluster	962	31
Lviv IT Cluster	1,051	42
Dnipro IT Cluster	435	27

Sources: developed by the authors based on (Diia, 2021).

In Ukraine, 8 business incubators and more than 200 universities annually provide 16000 new IT graduates. The best universities are Igor Sikorsky Kyiv Polytechnic Institute, the Kharkiv National University of Radio Electronics, and the National Technical University «Kharkiv Polytechnic Institute» (Market Report, 2019).

Based on expert estimates of the IT Ukraine Association, the IT industry would expand by 22-30% annually in the years ahead. Herewith, the number of specialists would double by 2024. Besides, if the number of IT companies increases in the market, the number of specialists could be higher.

Although the significant innovation potential for IT development, Ukraine has is a significant gap compared to the EU. However, it is appropriate to mention the founded in 2017 UNIT.City innovation park. It is considered to be a guide to the competitive environments of Ukrainian and European innovation.

By the middle of 2021, UNIT.City had attracted the attention of the Ukrainian and international communities in innovation and startups. Moreover, it has influenced science and technology development.

Unit.City is the first innovation park in Ukraine aimed to develop projects in high-tech and creative industries. Besides, it is one of the crucial innovation hubs in Central and Eastern Europe, attracting investors, partners, and new technologies worldwide to Ukraine.

According to the production plan, the UNIT.City infrastructure construction is slated for completion in 2025. Table 7 shows the indicators and characteristics for the current year and at the end of the project.

Table 7. Basic characteristics and performance indicators of UNIT.City in 2021 and 2025

Actual values of UNIT.City at the beginning of 2021	Plan indicators UNIT.City in 2025
- 150 resident companies	- 1500 seats in coworking spaces
- 1200 students	- 15000 residents
- above 500 events annually	- 3000 students in IT and business
- 5 business buildings and coworking space	- above 700 events annually
- 8 laboratories	- above 300 companies and research and development laboratories
- 5 investment funds	- approximately 3000 of new workplaces
- Main industries represented on campus: fintech, agritech, foodtech, energy and clean technologies, VR/AR, AI/ML/BigData, cybersecurity, digital health, blockchain	- 10 R&D-centers
	- 25 ha of territory for work, rest, and development

Sources: developed by the authors based on (UNIT.City, 2021; Market Report, 2019).

The innovation park residents have the opportunity to rent several types of premises as follows:

- coworking space;
- individual office;
- clubhouse office;
- building rental.

In turn, the UNIT.City management organizes special events and creates scientific and educational IT programs to develop the innovation sphere, train qualified specialists, and build innovation and startup culture. Figure 1 presents the above projects.

Particular attention should be given to the residential complex UNIT.Home covering 11.7 hectares to provide people with space for work or study on the UNIT.City space. UNIT.Home complex is part of the cluster ecosystem, consisting of 2475 apartments with approximately 4500 inhabitants (9 full residential quarters). In turn, the residential quarter infrastructure would include the university, school, kindergarten, digital library, medical center, innovation center, sports complex, etc.

Therefore, UNIT.City demonstrates the rapid growth dynamic. Many successfully implemented projects and programs, rapid and large-scale infrastructure development, have become a center of innovative development of Ukraine. However, the COVID-19 pandemic crisis and its consequences affected the innovation park's organizational and economic activities and financial condition.

Notably, due to quarantine restrictions, UNIT.City suffered the most from the organization of large-scale events. The innovation park has two large conference halls: UNIT.Core admitting 150 persons (288 square meters) and UNIT.Verse – 350 persons (315 square meters). In recent years, these facilities have been actively used for various events, which provided significant financial income. However, during the lockdown, revenue from these premises was little, if any. Indeed, the quarantine affected the real estate market resulting in the change of the UNIT.City financial performance. Thus, following the official data by the State Statistics Service of Ukraine, in 2020, the volume of construction decreased by approximately 7% compared to the previous year. Besides, almost all construction companies stated the sales decline by 40-80% for March-May 2020 compared to the spring of 2019 (Commercial Property, 2020).

Due to the erosion of purchasing power in the real estate market, most building projects did not receive sufficient funding to start or complete construction.

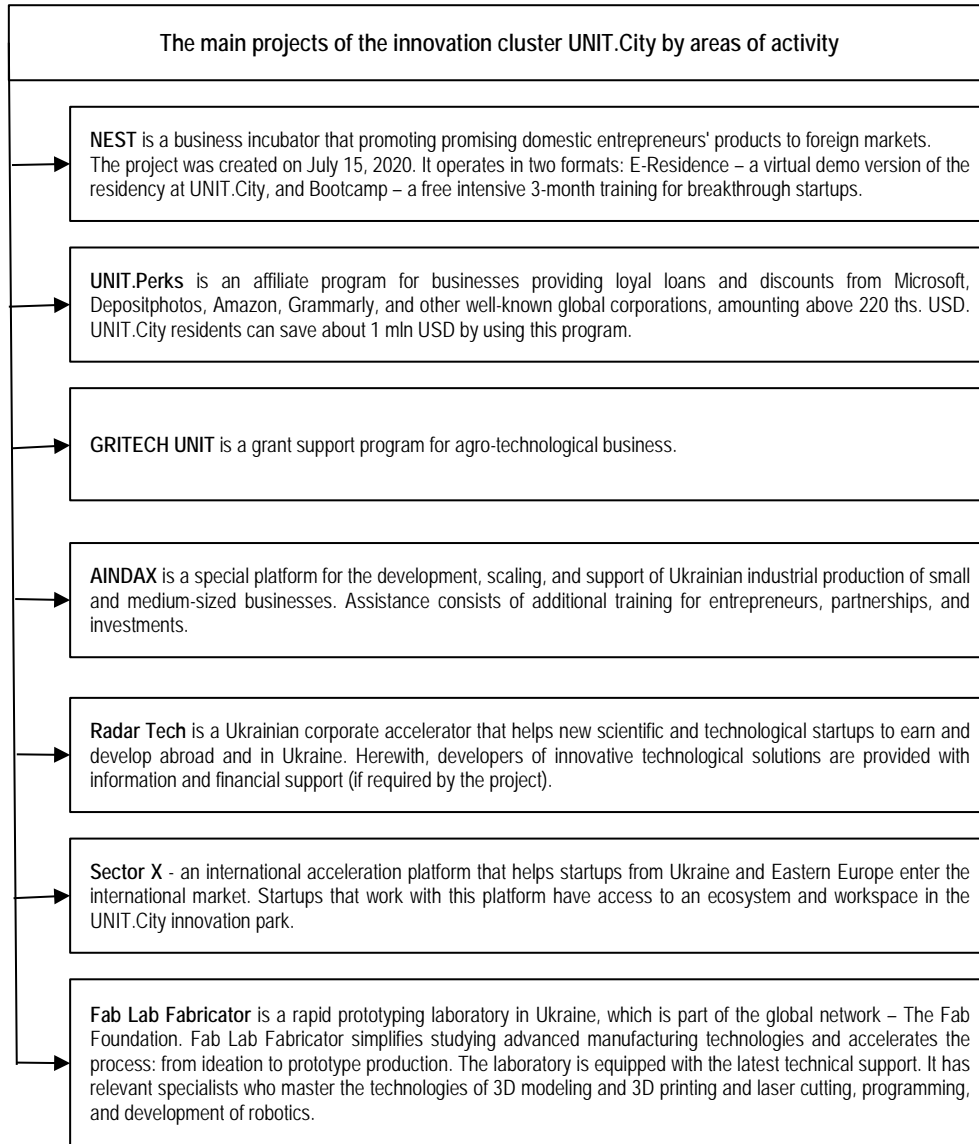


Figure 1. Main UNIT.City projects by business areas

Sources: developed by the authors based on (UNIT.City, 2021).

In turn, the UNIT.Home residential complex was no exception. Table 8 demonstrates the basic prices for apartments.

Table 8. General characteristic of UNIT.Home premises

Number of rooms	Price, mln UAH	Square, m ²	Price per 1 m ² , UAH
One room	from 2	32-54	53700-72800
Two rooms	from 4.2	79-96	50400-62500
Three rooms	from 4.5	98-123	45950-56300

Sources: developed by the authors based on (LUN, 2021).

The findings showed that the price per square meter in UNIT.Home is higher by 1.5-2 times compared to the average level in Kyiv. It stands to note that UNIT.Home provides modern environmental technologies in construction. However, the high real estate prices decreased the demand for apartments. In turn, the construction has slowed down and even stopped.

Another critical area of UNIT.City is the office and buildings lease for resident companies. Therefore, development companies could survive in the real estate market despite the quarantine and provide new offers. Herewith, although the COVID-19 pandemic and quarantine restrictions, they hardly changed their activity in the Kyiv office real estate market compared to the previous year.

Notably, in November 2020, the UDP company, with the main shareholder UFuture holding company, put into operation another building in the innovation park UNIT.City, where the construction cost was 200 mln UAH.

Therefore, despite the difficult economic conditions caused by the pandemic, the innovative park's infrastructure proceeded to expand, providing new opportunities for resident companies. In October 2020, the office space was occupied by 95%. Therefore, it means that built offices and coworking spaces were in demand. Although some companies terminated the lease because of pandemic and financial insolvency, new businesses took their place.

Therefore, the analysis of UNIT.City activities during quarantine showed that the high managerial competence allowed minimizing the loss in income and the number of residents. Besides, all epidemiological measures were ensured without losing the comfort and safe work for all resident companies.

From the quarantine begging, no employees lost jobs or salaries. Notably, all UNIT. City's divisions viz top management, ecosystem, marketing, sales, Smart City, the unit of communications and events, and operating division have worked full-time without layoffs due to the previously created reserve wage fund.

Although the negative COVID-19 economic consequences, the UNIT.City's management saved resources and continued further project realization thanks to effective organizational and economic management mechanisms. In general, the main measures to reduce the quarantine restrictions impact the of UNIT.City activities were as follows:

1. Transition to distance work to maintain business continuity and fulfill contractual obligations. The cluster residents developed detailed visit plans for the specialists who need to work in the office due to technical reasons.
2. Organizing the employees' transportation (private carriers), delivering food for staff in offices, purchasing disinfectants, observing social distance norms, strengthening electronic document flow, purchasing medical equipment (including oxygen concentrators).
3. During severe quarantine restrictions, resident companies made concessions to their customers, agreeing on delay payments, temporary discounts, reduction of orders, and so on. Currently, some clients return their contracts.
4. Difficulties arose in organizing remote work in UNIT.City is concerned about strengthening cybersecurity (encryption of certain internal services) and the convenience of work from home for some categories of staff.

It stands to note that the lack of government assistance insignificantly affected the activities of IT companies and UNIT.City. They could financially cover their costs for the quarantine period and adapt to changes in organizational and economic nature.

However, the uncertainty and unpredictability of the global financial processes are among the main risks for developing UNIT.City and most IT companies.

Besides, the uncertainty of IT reforms in Ukraine outlines the risks associated with regulatory and fiscal policies. In particular, the government needs to further support the IT sector development in the Ukrainian market, viz: to simplify regulatory policy and facilitate business conditions (especially in taxation of IT companies). Notably, the relevant changes could be implemented in Ukraine following the best international practices. It stands to indicate that the COVID-19 pandemic completion would provoke a lack of financial resources in the budget of Ukraine. In turn, the provision of tax benefits may be impossible. Therefore, the Ministry of Digital Transformation of Ukraine implements legislative and organizational changes in this aspect.

Conclusions Under the conditions of investment deficit during the COVID-19 pandemic, innovation parks (clusters) could become the drivers of the domestic economic recovery. It allows attracting investments, commercializing innovations, and transforming the current production sphere into a more high-tech one. Although Ukraine has a significant gap in the innovation parks' functioning, the development tendencies are quite prospective in general.

Notably, in 2019, the IT sector grew by 30%, while in 2020 – by 20%, overcome despite the pandemic effects. IT growth was ensured by the export of services for the amount over 5 bln USD. Moreover, according to the venture capital fund A Ventures Capital, the industry received 563 mln USD investments. Under the NBU data, computer services account for more than 8% of the country's exports, following metals, food, and labor. Besides, one out of five Fortune 500 companies uses the IT services of Ukrainian companies (Tech Ecosystem Guide, 2019).

UNIT.City received significant investment support in July 2020. An important agreement for the future innovation park development was concluded with the European Investment Bank. According to the agreement, UNIT.City was granted a loan of 50 mln euros to design, renovate, and construct new specialized facilities and structures in the park (Zhyriy, 2021).

For promoting the culture of innovation and startups, in 2020, UNIT.City gained the support of the Ukrainian Startup Fund signed a relevant agreement on strategic cooperation. The main task is to identify ways of mutual support, which may include both event management and participation in joint projects. In turn, for UNIT.City development and full-scale project implementation on time, it is necessary to involve more strategic partners.

Author Contributions: conceptualization, H. M. and V. P.; methodology, H. M. and D. K.; validation, V. P.; formal analysis and investigation, H. M. and D. K.; resources and data curation, D. K.; writing-original draft preparation, H. M.; writing-review, editing, and visualization D. K. K. All authors have read and approved the final manuscript.

References

- Aghion, P., Bloom, N., Blundell, R., Griffith, R., & Howitt, P. (2005). Competition and innovation: An inverted-U relationship. *The quarterly journal of economics*, 120(2), 701-728. [\[Google Scholar\]](#) [\[CrossRef\]](#)
- Alekseev, I., & Urba, S. (2016). The innovative strategy as a means to enhance the security and competitiveness of Ukraine's economy. *Efficient economy*, 9.
- Amosha, O., & Salomatina, L. (2017). Innovative development of industrial enterprises in the regions: problems and prospects. *Economy of Ukraine*, 3(664), 20-34. [\[Google Scholar\]](#)
- Analytical Portal «Word and Action». (2020). How much foreign investment came to Ukraine in 2020. Retrieved from [\[Link\]](#)

- Bubenko, P. (2016). Strategic planning and management of innovative development: theory and practice. *Business Inform*, 1, 77-80. [\[Google Scholar\]](#)
- Cabinet of Ministers of Ukraine (2020). Economic Incentive Program to Overcome the Consequences of COVID-19: «Economic Recovery». Information and analytical materials. Retrieved from [\[Link\]](#)
- Center for Applied Research (2020). Impact of COVID-19 and quarantine restrictions on the economy of Ukraine. Retrieved from [\[Link\]](#)
- Center for Applied Research. (2020). Consequences of the COVID-19 epidemic and quarantine measures for leading sectors of the Ukrainian economy. Retrieved from [\[Link\]](#)
- Commercial Property. (2020). Kyiv office segment: in a pandemic. Retrieved from [\[Link\]](#)
- Demchysyak, N. (2016). Financial regulation of innovation activity in Ukraine. [Doctoral dissertation, Ivan Franko National University]. [\[Google Scholar\]](#)
- Diia (2021). Official web site. [\[Link\]](#)
- DiiaCity (2021). Official website. [\[Link\]](#)
- Dosi, G., Freeman, C., Nelson, R., Silverberg, G., & Soete, L. (1988). *Technical change and economic theory*. Laboratory of Economics and Management (LEM), Sant'Anna School of Advanced Studies, Pisa, Italy. [\[Google Scholar\]](#)
- Drucker, P. (2007). *Innovation and Entrepreneurship*. Williams Press, 432 p.
- Dumanska, I. (2020). Technoparks without offshore jurisdictions in the conditions of investment hunger of the COVID-19 pandemic. Scientific Research Institute of Fiscal Policy. Retrieved from [\[Link\]](#)
- Geyets, V. M. (2015). Barriers to the development of industry on an innovative basis and the possibilities of overcoming them. *The economy of Ukraine*, (1), 638. [\[Google Scholar\]](#)
- Global Innovation Index (2020). Retrieved from [\[Link\]](#)
- Hrynkevych, O., & Kvak S. (2020). Monitoring and strategic diagnostics of innovative development of industrial activities in Ukraine. *Efektivna ekonomika*, 3, 1-7. [\[CrossRef\]](#)
- Innovative Park UNIT.City (2021). Official website. [\[Link\]](#)
- IT Ukraine Association. (2018). Development of the Ukrainian IT industry. Retrieved from [\[Link\]](#)
- Kharlamov, P. (2020). Place of power: why Ukraine has industrial and technology parks. Retrieved from [\[Link\]](#)
- Kvak, S. (2017). Polish-Ukrainian industrial parks-corridors. Socio-Economic potential of Cross-Border Cooperation: International collective monograph/Ivan Franko National University of Lviv (Ukraine), University of Rzeszow (Poland). Lviv-Rzeszow, P. 81–91
- Kvak, S. (2018). Prerequisites and features of successful functioning of the economic mechanism of stimulation of the innovative activity of the machine-building industry of Ukraine. *Scientific Notes of Lviv University of Business and Law*, 19, 69-75. [\[Google Scholar\]](#)
- Law of Ukraine as of 26.12.2002 №380-VI «On Innovative Activity». Retrieved from [\[Link\]](#)
- LUN. New-build of dream (2021). Official website. [\[Link\]](#)
- Lundvall, B. A., Dosi, G., & Freeman, C. (1988). Innovation as an interactive process: from user-producer interaction to the national system of innovation. *1988*, 349, 369. [\[Google Scholar\]](#)
- Malitskiy, B. (2016). Analysis of the scientific development in Ukraine in the context of changes in state science policy. *Science and science*, 3, 3-17. [\[Google Scholar\]](#)
- Market Report (2019). The country that codes. IT Industry in Ukraine. Retrieved from [\[Link\]](#)
- Ministry and Committee of Digital Transformation of Ukraine (2021). Official web site. [\[Link\]](#)
- Pidhayna, Ye. (2019). Guide to the Ukrainian IT industry: top 10 important figures. Retrieved from [\[Link\]](#)
- Porter, M. E. (1990). The competitive advantage of nations *Harvard business review*. *Harvard Business Review*, 91. [\[Google Scholar\]](#)
- Rachkevich, M. (2021). The boom in the IT sector in Ukraine helped survive the pandemic, but problems remain in the industry. Retrieved from [\[Link\]](#)
- Resolution of the Cabinet of Ministers as of 10.07.2019 № 526-p. On approval of the Strategy of developing the innovative activity sphere for the period up to 2030. Retrieved from [\[Link\]](#)
- Resolution of the Cabinet of Ministers of Ukraine as of 22 July, 2020, № 641 «On the establishment of quarantine and the introduction of enhanced anti-epidemic measures in the area with a significant spread of acute respiratory disease COVID-19 caused by coronavirus SARS-CoV-2». Retrieved from [\[Link\]](#)
- Shovkalyak, V. (2013). Innovative development of Ukraine: the case for 2012. *Science of Ukraine in the Global Information Space*, 7, 14-25.
- Sokolenko, D. (2020). Topp-5 IT clusters of Ukraine. Retrieved from [\[Link\]](#)
- SSSU. (2019). Scientific and Innovative Activity of Ukraine: statistical publication. Retrieved from [\[Link\]](#)
- SSSU. (2020a). Employment and unemployment in the second quarter of 2020. Retrieved from [\[Link\]](#)
- SSSU. (2020b). Ukraine's foreign commodity trade. Retrieved from [\[Link\]](#)
- Tech Ecosystem Guide to Ukraine. (2019). Retrieved from [\[Link\]](#)
- Yurynets, Z. (2016). Innovative capacity and state innovation policy in the system of improving the national economic competitiveness. Investment, practice and experience, 4, 35-37. [\[Google Scholar\]](#)

Zhyriy, K. (2021). During the pandemic, the EIB increased investment in Ukraine by 50%. Retrieved from [\[Link\]](#)
One philosophy. (2020). Report on the viability of Ukrainian organizations in a pandemic. Retrieved from [\[Link\]](#)

Галина Мішеніна, к.е.н., доцент, Сумський державний університет, Україна;
Дмитро Кіріченко, Сумський державний університет, Україна;
В'ячеслав Пуземський, Литва

Вплив COVID-19 на розвиток компанії: на прикладі UNIT.City

Ця стаття присвячена аналізу проблем та напрямів інноваційної активності реального сектору економіки країни в умовах пандемії COVID-19. Авторами оцінено вплив пандемії на економічний стан підприємств досліджуваної галузі. Проблема відновлення ефективної діяльності підприємств після зняття карантинних обмежень, запроваджених внаслідок поширення пандемії, актуалізує пошук дієвих інструментів подолання наслідків кризи та покращення стану інноваційного розвитку національної економіки. Метою дослідження є обґрунтування перспектив розвитку інноваційного підприємництва та визначення шляхів підвищення ефективності UNIT.City в карантинних умовах. Об'єктом дослідження є діяльність інноваційного парку – кластера UNIT.City. Предметом дослідження є організаційно-економічні та соціальні відносини, які виникають у процесі діяльності компанії. Методологічною базою дослідження є системний підхід, а також фундаментальні положення загальної економічної теорії та теорії управління. Для практичної реалізації застосовано наступні методи наукового дослідження: абстрактно-логічний і системно-структурний аналіз для визначення проблем, які спричинили зниження показників економічної діяльності підприємств України та, зокрема, досліджуваного підприємства; методи статистичних та експертних оцінок для визначення перспектив та можливостей розвитку підприємств інноваційного сектору та UNIT.City. Періодом дослідження є 2019-2020 рр. У ході дослідження проаналізовано основні макроекономічні показники України під час та після карантину. Досліджено організаційно-економічний механізм функціонування інноваційного парку UNIT.City під час дії карантинних обмежень. Авторами встановлено перспективи та проблеми інвестиційної складової функціонування IT-сфери в Україні, а також роль держави у сприянні розвитку технологічного сектору. За результатами проведеного дослідження було визначено основні шляхи удосконалення роботи механізмів управління та забезпечення розвитку інноваційного парку UNIT.City під час та після карантину. Визначено інструментарій ефективного управління інноваційним парком UNIT.City в період карантинних обмежень, а також розглянуті перспективи його подальшого розвитку. На думку авторів, зміни в IT секторі можуть поглибити кризу або сприяти відновленню всієї економіки внаслідок її цифровізації. Напрямами подальших досліджень є поглиблений аналіз впливу пандемії COVID-19 на діяльність підприємств інноваційної сфери та UNIT.City, зокрема.

Ключові слова: карантинні обмеження, пандемія, інноваційна діяльність, підприємництво, кластер, інноваційний парк, IT-сектор, інвестиції, підприємство, економічна діяльність.