

Ministry of Education and Science of Ukraine  
Black Sea Universities Network

# ODESA NATIONAL UNIVERSITY OF TECHNOLOGY

International Competition of  
Student Scientific Works

# BLACK SEA SCIENCE 2022 PROCEEDINGS



ODESA, ONUT 2022

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Odesa National University of Technology

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# **BLACK SEA SCIENCE 2022**

**Proceedings**

Odesa, ONUT 2022

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Proceedings of International Competition of Student Scientific Works «Black Sea Science 2022» contain the works of winners of the competition.

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## INTRODUCTION

International Competition of Student Scientific Works “Black Sea Science” has been held annually since 2018 at the initiative of Odesa National University of Technology (formerly Odesa National Academy of Food Technologies) with the support of the Ministry of Education and Science of Ukraine. It has been supported by Black Sea Universities Network (the Association of 110 higher education institutions from 12 countries of the Black Sea Region) since 2019, and by Iseki-FOOD Association (European Integrating Food Science and Engineering Knowledge into the Food Chain Association) since 2020.

The goal of the competition is to expand international relations and attract students to research activities. It is held in the following fields:

- Food science and technologies
- Economics and administration
- Information technologies, automation and robotics
- Power engineering and energy efficiency
- Ecology and environmental protection

The jury includes both Ukrainian and foreign scientists. In the 4 years that the competition has been held, the jury included scientists from universities of 24 countries: Angola, Azerbaijan, Benin, Bulgaria, China, Czech Republic, France, Georgia, Germany, Greece, Israel, Italy, Kazakhstan, Latvia, Lithuania, Moldova, Pakistan, Poland, Romania, Serbia, Slovakia, Switzerland, Turkey, USA.

At the same time, every year the geography has expanded and the number of foreign jury members has increased: from 46 jury members representing 25 universities from 12 countries in 2018, to 73 jury members of the 46 universities from 19 countries in 2022.

More than a thousand student research papers have been submitted to the competition from both Ukrainian and foreign institutions from 25 countries: China, Poland, Mexico, USA, France, Greece, Germany, Canada, Costa Rica, Brazil, India, Pakistan, Israel, Macedonia, Lithuania, Latvia, Slovakia, Romania, Kyrgyzstan, Kazakhstan, Bulgaria, Moldova, Georgia, Turkey, Serbia.

The interest of foreign students in the competition grew every year. In 2018, the students representing 15 institutions from 7 countries have submitted 33 works. In 2021 the number of submitted works increased to 73, authored by the students of 40 institutions from 18 countries.

The competition is held in two stages. In the first stage, student research papers are reviewed by members of the jury who are experts in the relevant fields. In the second stage of the competition, the winners of the first stage have the opportunity to present their work to a wide audience in person or online.

All participants of the competition and their scientific supervisors are awarded appropriate certificates, and the scientific works of the winners are included in the electronic proceedings of the competition. Every year the competition receives a large number of positive responses from Ukrainian and foreign colleagues with the desire to participate in the coming years.

## **2. ECONOMICS AND** **ADMINISTRATION**

**BUSINESS PROJECT TO START AND DEVELOP THE BUSINESS OF  
DODON&CO DESIGN AND CONSTRUCTION AGENCY**

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**Summary of the Project.** *The purpose of this work is to create a business plan based on market research of the construction industry and services in Ukraine, for establish and develop a design and construction agency «Dodon & Co». To do this, the target audience was identified, the strategy of market conquest, marketing research was performed, SWOT - analysis of the agency's activities was formed. The Ukrainian construction market, the market of design and construction services in Vinnytsia and the main competitors of the Design and Construction Agency are analyzed «Dodon & Co». The organizational scheme of personnel management of the agency is formed. The financial and investment plan on the basis of which economic efficiency and expediency of realization of business idea, payback of the project is defined is made. A pilot project of the restaurant complex "Kalyna", p. Chernyatin, Zhmerynyskyi district, Vinnytsia region.*

**Keywords:** *business project, market, competitors, construction industry, design and construction services, design, monolithic services, strategy, perspectives, results.*

## **I. INTRODUCTION**

Most people think of working in the construction industry, they think about the actual construction - building structures such as houses, commercial buildings or other structures. The beginning of real estate construction involves the creation of a project and the use of a number of construction services that allow you to create a real construction project. No large investment is required to start such a business. The team of specialists, experience and modern design technologies are important. The business plan for the creation and development of a design and construction agency is a roadmap for a successful partnership with the best professionals and meet customer needs.

Like the five blind men encountering different parts of an elephant, each of the numerous participants in the process of planning, designing, financing, constructing and operating physical facilities has a different perspective on project management for construction. Specialized knowledge can be very beneficial, particularly in large and complicated projects, since experts in various specialties can provide valuable services.

Market analysis based on the results of the monthly analytical study "Review of the development of the construction industry of Ukraine" from PAU, for 6 months. In 2021, the Ukrainian construction market grew by + 0.2% compared to the same period in 2020. The general market trend is the growth phase of the Ukrainian construction industry market and the acceleration of growth trends [2].

The volume of the construction works performed from January to June 2021 made 77 billion hryvnias (+0.2)% in comparison with 2020, owing to the following: (+16.4)% in residential construction; (-4,9)% in commercial construction; (-2,8)% in

infrastructure construction (hereinafter without the statistics for Crimea and the ATO area). It should be noted that the construction market started growing two months earlier in comparison with the last year (it started to grow in September 2020). The volume of the construction works performed in 2020 made 202 billion hryvnias (+4.0)% in comparison with 2019, owing to the following: (-18.5)% in residential construction; (-2,7)% in commercial construction; (+14,8)% in infrastructure construction. The indices are specified in the comparative prices.

Dodon&Co Design and Construction Agency will be established a private agency to provide the package of design and construction services, which will include conceptual and brief design, development of the design project, construction documentation and monolithic services at 19Sh Nahirna Str., Vinnytsia.

The main type of economic activity of Dodon&Co Design and Construction Agency according to the Classifier of the Types of Economic activity is: 41.20 — construction of residential and non-residential buildings, 42.99 - construction of other facilities, 71.1 — activities in architecture and engineering, provision of technical consulting services, 71.11 — architecture activities, 74.10 — specialised design activities.

The purpose of the project is to establish the design and construction agency to develop the business of provision of high-quality monolithic services and a number of services of design, modelling and interior design in construction projects. It is a family business done by the coordinated team of the experts who implement construction projects in different areas. The agency will be focused on needs of customers with the different paying capacity. The design and construction agency will organise the continuous flow of orders to provide high-quality monolithic services.

The principal task of Dodon&Co Design and Construction Agency is to provide full-scale design and construction services.

The project will be implemented in stages within a year, in accordance with the schedule that is made of the pre-investment, investment and operational stages (Table 1).

Table 1. Implementation Schedule of Dodon&Co Design and Construction Agency

Stage	Actions	Deadline
Pre-investment stage	– fund-raising	January 2022
	– development of the business plan	
	– receipt of technical documentation	
	– funding	
Investment stage	– lease (purchase) of the premises	February 2022 - March 2022
	– purchase of the equipment	
	– purchase of the starting materials	
	– development and launch of the agency's website	
Operational stage	– achievement of the operating profit	By December 2022
	– achievement of the design capacity by the agency	

In order to optimise its project costs and income, Dodon&Co needs to develop the data base for the market entry strategy. It takes analysis of the market environment, assessment of the competition level, determination of the market capacity and prospects of its development in Vinnytsia.

## II. LITERATURE ANALYSIS

The construction industry in our country has become one of the indicators showing that the Ukrainian economy is overcoming the crisis. The construction product index, which was less than 100% from 2012 to 2015, has been confidently demonstrating annual growth of construction product volumes since 2016. Thus, according to the State Statistics Service of Ukraine, the index in 2016 made 117.4%, in 2017 — 126.4%, in 2018 — 108.6%, in 2019 — 123.6%, in 2020 — 105.6% (Fig. 1).

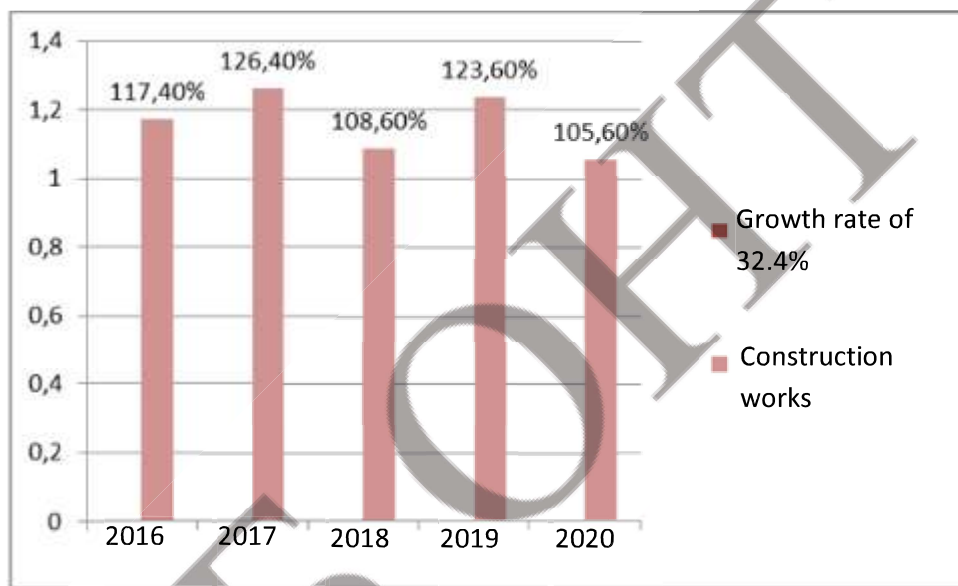


Figure 1. Dynamics of performance of the construction works in Ukraine in 2016-2020, in %

Source: data of the State Statistics Service of Ukraine

In 2020, the construction market demonstrated the negative dynamics in comparison with the previous years. The main negative factors of 2020 were the coronacrisis deteriorated with the reform of the state architectural and construction control and supervision introduced almost concurrently with the strict quarantine in March. As a result of the decrease in the household income and more complicated authorisation procedures in the construction industry, the volume of residential construction went down by almost 20%. For reference, in 2019, there was an increase by 4.2%. Instead, the engineering structures gave plus 3.9% (in 2019 — plus 26.6%). The outcome was reached owing to the Big Construction Programme.

The drivers of growth at the Ukrainian construction market are the sectors of construction of non-residential premises and engineering structures. The construction product indices by the types for January to August 2021 in the given sectors made 101.8%. The residential construction volume grew by 2% only in comparison with the equivalent period of the previous year.

The Ukrainian construction market kept developing in 2021, the demand levelled off, and the market is stable now. In general, the consumer demand has the good level although it is lower than it used to be in 2019.

Therefore, the construction industry facilitates development of small and medium-sized businesses more than any other industry. Development of the construction industry entails imminent economic growth in the country and resolution of numerous social issues.

According to the Main Statistics Directorate in Vinnytsia Region, the volume of the construction products made in the region in January 2020 made 196.1 million hryvnias.

The volumes of the construction products by the types made:

- for construction of buildings — 101.8 million hryvnias or 51.9% of the total volume;

- for engineering structures — 94.3 million hryvnias or 48.1%.

According to the Main Statistics Directorate in Vinnytsia Region, the construction product index in January 2020 made 131.7%.

In 2019, the regional enterprises and organisations utilised 15,524.2 million hryvnias of capital investment at the expense of all the funding sources, which was 1.6% less than the volume of the capital investment for 2018 in the comparative prices.

The most specific share of the capital investment (98.7% of the total volume) was utilised to create tangible assets, including:

- buildings and structures — 44.1% of all the investment;

- machines, equipment and tools, vehicles — 51.9%.

The main investment source still was own funds of enterprises and organisations, which resulted in utilisation of 68.9% of the total capital investment.

The share of the borrowed funds, bank and other loans made 3.7%.

The household funds for construction of the housing made 7.8% of the capital investment.

The state and local budget funds were 17.9%, and the other funding sources were 1.7%.

The volume of the housing commissioned in 2019 was 287.4 thousand square meters of the general area.

The general area of the housing commissioned in 2019 in comparison with the respective period of 2018 went up by 28.3%.

As for the region, most housing was constructed in Vinnytsia and Vinnytsia District (68.3% of the total volume of the housing).

The founders of the agency are experienced in provision of the monolithic construction services, so the market analysis should focus on the existing and potential competitors at the market.

Monolithic construction is a popular technology, both in construction of high-rise buildings, residential estates, office centres and low-rise industrial facilities or cottages. It is a complex unique technology of reinforced concrete construction, which enables constructing buildings and facilities of any shape and height in really unique projects in the short time frames.

The main principle of monolithic construction is that concrete is poured into the form work, which determines its future form. When the concrete sets, further actions are taken with or without the form work subject to characteristics of the building.

The benefits of monolithic construction include speed of construction, long period of operation of more than 110 in the moderate climate, high strength, even allocation of load upon the foundation and small weight, especially in comparison with the panel and brick structures.

Customised design projects should be developed with account of the terms of reference so that the monolithic building will have all the maximum benefits of the structure, and its defects will be mitigated. The monolithic construction market is developing actively now, which allows designers to use their imagination to the full. It means that the sector will have endless innovation.

Dodon&Co Design and Construction Agency is going to perform the entire working process: design to construction, engineering works, so the full package of the services will be provided.

The model of the product/market matrix is used to determine the market sweeping strategy (Fig. 2).

		MARKET	
		Old	New
PRODUCT	Old	Market entry <i>if the market is growing</i>	Market development <i>if new niches appear</i>
	New	Development of the product <i>if the company is well known</i>	Diversification <i>if there is a small range</i>

Figure 2. Product/market matrix for Dodon&Co Design and Construction Agency

Thus, in order to enter the growing market and to offer the existing service in the best manner, Dodon&Co Design and Construction Agency must use the strategy for entering the market niche of the package design and construction services. The low-cost strategy should be used to win over consumers and develop the corporate policy, and development of the project needs the vertical integration strategy. Combination of certain aspects of these strategies will allow performing the project tasks and achieving the purpose.

### III. OBJECT, SUBJECT, AND METHODS OF RESEARCH

*The object* of the competition is indicators of revenue and expenditure of the project, as well as indicators of the effectiveness of its implementation.

Subject - the project of creating a design and construction agency.

The purpose of the work is to determine the feasibility and effectiveness of the project to provide comprehensive construction services.

**Research methods.** The competition used general scientific and special methods that allow to systematically solve problems in the chosen direction of research. The most important theoretical and applied developments are based on the provisions of

general management theory, financial and economic management, strategic management and the use of such methods as: *systematic approach* - in the general study of the problems of implementation and implementation of the idea in a certain business atmosphere; *analysis and synthesis* with the use of abstraction, as well as modeling and formalization - in the development of the project of the Design and Construction Agency "Dodon & Co" to provide comprehensive construction services; *interpolation* - in determining the indicators of economic efficiency of the project; *discounting method* - when determining the future value of cash flow; *observation, comparison and measurement* - during the assessment of the market situation and the project implementation potential of the Dodon & Co Design and Construction Agency; *graphical method* - to illustrate the results of the analysis.

#### IV. RESULTS

In the competitive scientific work it is defined full-scale design and construction services, which will include conceptual and brief design, development of the design and construction documentation. Development of the unique, highly-functional and efficient design of the house for each customer. Qualified consulting at all the stages, from design to final implementation and start of work at the facility. Full-scale design that is consistent with the customer's lifestyle, needs and taste. Provision of monolithic services by the agency. Cooperation with the best experts and specialised suppliers. The services to be provided by Dodon&Co Design and Construction Agency are presented in Table 2.

Table 2. Services of Dodon&Co Design and Construction Agency

No.	Work types	Unit of measure (UAH)	Cost (UAH)
1	Cost estimate works	pcs	7,000
2	Design of residential houses	sq. m	50
3	Design of townhouses, cottages	sq. m	65
4	Design of low-rise houses	sq. m	70
5	Design of garages	pcs	5,000
6	Design of industrial buildings	sq. m	70
7	Replanning of premises	pcs	4,000
8	Monolithic services	with customised calculations	
9	Designer supervision	0.1% to 0.4% of the cost of the construction works	
10	Construction consulting	cons.	700
11	Interior design	sq. m	700
12	Obtaining authorisation documents	doc.	8,000

The benefits of Dodon&Co Design and Construction Agency will be provision of both individual services and a package of design and construction services. Customers will be offered a package of high-quality design and construction services provided by the highly-qualified experts at one place.

### Analysis of Competitors

There are the following main competitors at the market of design and construction services in Vinnytsia.

Architectural Bureau “Korovai architects”, Vinnytsia provides full-scale architectural services, including conceptual and brief design, development of the design and construction documentation.

TradeWade LLC, the construction and installation enterprise. TradeWade LLC offers the following services: monolithic construction, construction of residential and non-residential premises, major and minor repairs at buildings and structures, practical assistance and support during production of design documents.

Ukrbudproektrestavratsiia, Vinnytsia designs and constructs industrial and residential buildings. Services provided by Ukrbudproektrestavratsiia: construction consulting, drafts of construction intentions; examination of buildings and structures.

Architecture and Design Workshop PLIASOVYTSI LLC, Vinnytsia. Company’s services: development of architectural projects of any complexity (from low-rise buildings to full-scale design of neighbourhoods, industrial enterprises, malls, cultural facilities and other residential and public buildings), development of building drafts, design documentation on construction and reconstruction, designer supervision over construction.

Plans, building design, Vinnytsia. The company’s principal activity is selling standard designs of residential detached houses, customised design as well as provision of additional services that help construct the building promptly.

Orange Studio, the design studio in Vinnytsia, is a team of creative and experienced designers.

The analysis of competitors has shown that the full-scale construction services offered by Dodon&Co Design and Construction Agency are mostly provided by the Architecture Bureau “Korovai architects” and TradeWade LLC. Comparison of the competitive ability level by the types of works is shown in Figure 3.

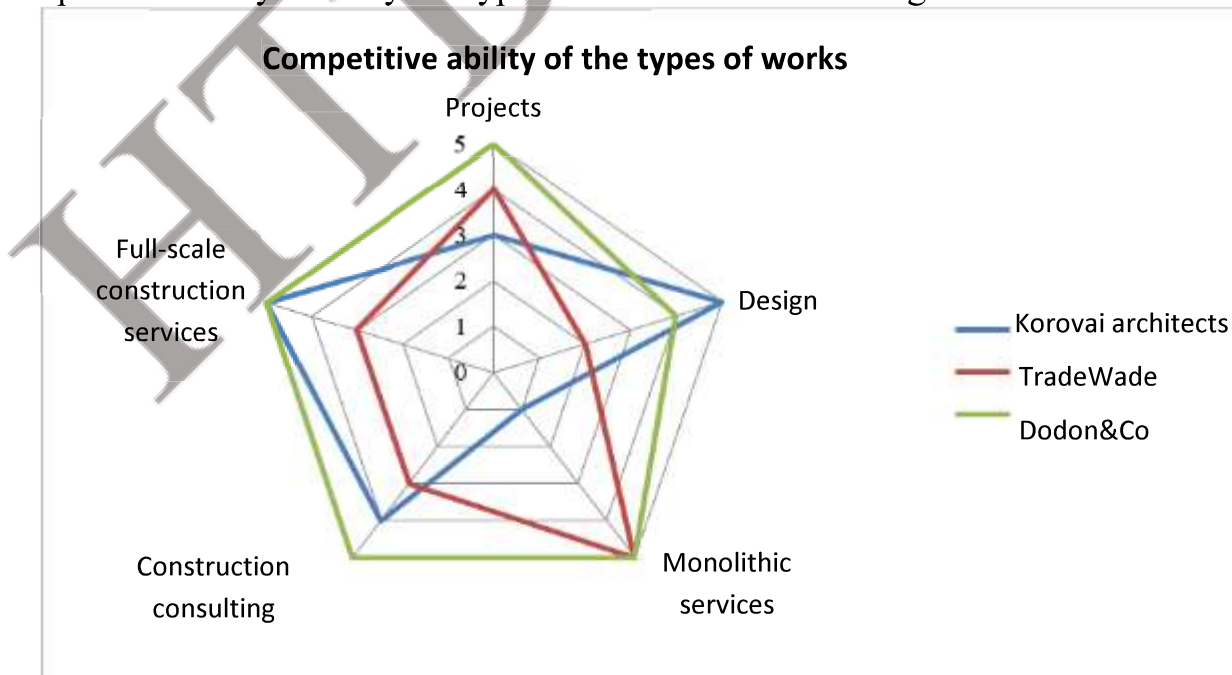


Figure 3. Competitive ability of the types of works

The benefits of Dodon&Co Design and Construction Agency will be full-scale design and construction services. Customers will be offered a package of high-quality design and construction services provided by the highly-qualified experts at one place.

**Sales and Marketing Plan**

The marketing strategy of Dodon&Co Design and Construction Agency will be developed within the market penetration strategy, the idea of which is to get new customers (without having to solicit the competitors’ customers) owing to the growth of the market and target niche.

The annual sales volume plan for the Project will depend on growth of the segment in physical terms. Coverage of 70% of the new niche is planned by the end of the first year of the agency’s operations (2022). When the services are provided during the year, the sales volume will be as follows (Table 3).

Table 3. Sales plan (provision of services) of Dodon&Co Design and Construction Agency

Period (months)	Estimated volume of the full-scale services (psc)	Estimated cost of the full-scale service (UAH)	Total (UAH)
1	1	28,500	28,500
2	2	28,500	57,000
3	3	28,500	85,500
4	3	28,500	85,500
5	4	28,500	114,000
6	4	28,500	114,000
7	5	28,500	142,500
8	5	28,500	142,500
9	6	28,500	171,000
10	6	28,500	171,000
11	7	28,500	199,500
12	8	28,500	228,000

The pricing strategy is developed within the framework of the low-cost strategy, so it will be the lowest in the niche.

For Dodon&Co Design and Construction Agency to enter the market and maintain its competitive ability, special marketing actions are necessary (Table 4).

Table 4. Marketing Plan of Dodon&Co Design and Construction Agency

<b>Purpose</b>	Establishment of the design and construction agency, market entry with building and interior designs by April 2022		
<b>Analysis</b>	stages	period	cost, UAH
	Analysis and assessment of the macro and micro environment of the project	November to December 2021	
	SWOT analysis	January 2022	
	Analysis of the target audience	February 2022	
<b>Achievement tools</b>	stages	period	cost, UAH
	<b>Development and implementation of the advertising strategy</b>	January-February 2022	

	Selection of advertising channels	February 2022	
	Development of the website	February 2022	5,000
	<b>Contact collection system</b>	on a permanent basis	
	Use of personal contacts for notification	on a permanent basis	
	Survey	February-March 2022	
	Survey	February-March 2022	
	<b>Determination of marketing communication</b>	on a permanent basis	
	Development of the SMM marketing strategy	on a permanent basis	
	Creation of a Facebook business page	April 2022	
	Development of advertising messages	on a permanent basis	2,000
	Search engine advertising	on a permanent basis	3,000
	Social media campaigns	on a permanent basis	
<b>Budget:</b>			<b>10,000</b>

The potential customers of Design and Construction Agency will be owners of private buildings, land plots, commercial and technical buildings. (Table 5.)

Table 5. Target audience of the business

Business model	Work types	Monolithic services
B2B Construction organisations, production, trade and state-owned, municipal and private enterprises	Cost estimate works, design of residential houses, townhouses, cottages, low-rise buildings, garages, industrial buildings, replanning of commercial and technical premises	Monolithic services for construction business customers, owners of commercial and technical premises
B2C Married couples and families with children who improve their living conditions or make their dream of living in a detached house come true	Cost estimate works, design of the residential house, garage, technical premises, replanning of premises, interior design, construction consulting, designer supervision, execution of authorisation documents	Monolithic services by customised orders

At present, the most efficient methods for an advertising campaign are Internet and social media advertising. The active advertising campaign will be run only in 2022.

Dodon&Co Design and Construction Agency is planning the following types of advertising:

- Own small promo-website that describes its services, prices and works performed
- Social media page

- Advertising at online bulletin boards
- Placement of advertising materials in construction stores
- Partnership with construction companies and construction stores
- Placement of information materials into mail boxes
- Recommendations by existing customers

Both the advertising campaign and website development costs must be optimum within the low-cost strategy. As of March 2022, development of the company’s website costs at least UAH 5,000, and expenses for maintenance and promotion thereof depend on the package of services. The average price of the optimum business package is at least UAH 1,000.

Also, it is planned to make the service more accessible for consumers by developing Dodon&Co mobile application, which plays an image role (care about consumers, exclusivity of the service, innovation by the agency), makes the service closer to immediate consumers, improves the service and generally enhances the quality.

**Organisational structure of Dodon&Co Design and Construction Agency**

By its legal form, Dodon&Co Design and Construction Agency is a small enterprise whose activity does not require many employees, and the low-cost policy does not provide for high salaries. In the beginning, no employees are going to be hired, and the agency is going to cooperate with the outsourcing companies.

The senior executive of the agency is the Director, who is also the owner. His principal functional duties are to resolve current and legal issues of the company, to enter into contracts with suppliers and contractors, to regulate the level of salaries, to select the agency development strategy, to implement the pricing policy etc. The Director carries out overall management of Dodon&Co Design and Construction Agency and controls implementation of strategic tasks by the staff.

The organisational staff management structure is based on linear connections (Fig. 4).

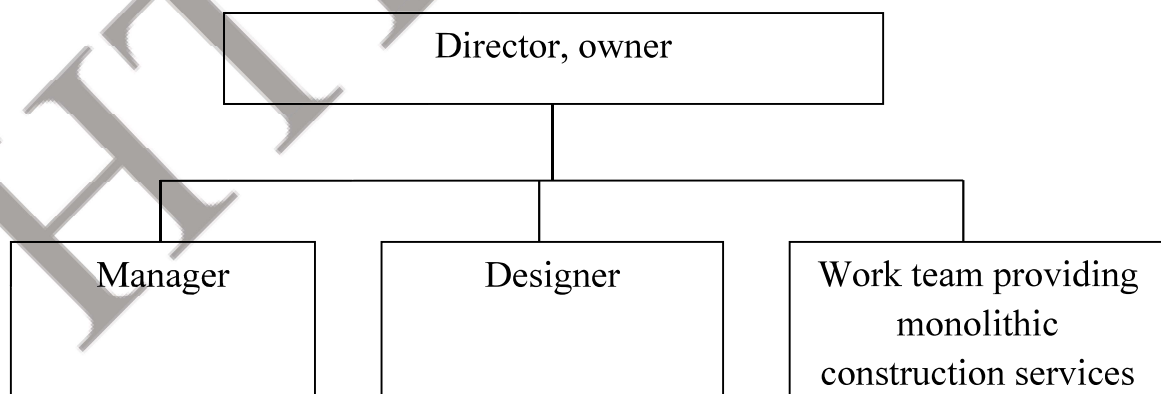


Figure 4. Organisational staff management structure of Dodon&Co Design and Construction Agency

The Director is in charge of the manager, who is responsible for: receiving orders on the website and by telephone, forming orders and organising project implementation, maintaining the customer base, and advertising.

The designer’s main duties include: collecting design input data, resolving technical issues in connection with the designated objects during the entire construction design period, designer supervision over construction of the objects being designed, consulting on the issues within the competence, participating in analysis and consolidation of practical experience in development of projects and implementation thereof in construction, and proposing feasible adjustments to the general and principal design solutions.

**SWOT analysis of operations**

The low-cost strategy is based on the SWOT analysis of operations, which is presented in Table 6.

Table 6. SWOT analysis of operations

	<b>S, Strengths</b>	<b>W, Weaknesses</b>
	1. Wide range of types of activities 2. Work team providing monolithic services and tools 3. Established connections with construction organisations 4. Contacts with highly-qualified experts who are ready for partnership 5. Qualified management staff 6. Experience in design software 7. Experience in modern technologies for monolithic services 8. Social project sponsorship	1. Insufficient experience in provision of full-scale design and construction services 2. Insufficient experience in partnership with highly-qualified experts 3. Need to study new versions of software products for design
<b>O, Opportunities</b>	<b>SO, Strategic solutions</b>	<b>WO, Strategic solutions</b>
1. Consumers’ interest in high-quality full-scale design and construction services 2. Use of the potential of the family business team in construction services, design and organisation of options of full-scale design and construction services	General strategy for developing full-scale design and construction services by the types of activities, more active communication with construction organisations, development of partnership with highly-qualified experts	1. Strategic options of packages of design and construction services 2. Strategy for partnership with highly-qualified experts 3. IT strategy for updating software versions and training
<b>T, Threats</b>	<b>(ST), Strategic solutions</b>	<b>(WT), Strategic solutions</b>
1. Insufficient funding to implement the general development strategy 2. Decrease in the real household income as a result of the economic crisis 3. Decrease in orders as a result of Covid-19 quarantine 4. Appearance of new competitors 5. Weather conditions	1. Engagement of investors into new projects by developing a business plan (S-5, T-5) 2. Use of efficient marketing communication channels (S-4,6, T-2, 4) 3. Analysis of strategic solutions and practical implementation of equivalent services of competitors (S-1, T-4)	1. Discounts on the package of design and construction services (W-1, T-2) with different options 2. Discount to regular customers (W-1, T-2) 3. Optimisation of costs with alternative packages (W-1, T-2) 4. Optimisation of marketing communication costs (W-1, T-2)

According to the SWOT analysis, the strategic solutions that will be gradually implemented within the business plan have been established.

**Financial and Investment Plan**

The financial plan of Dodon&Co Design and Construction Agency provides for grouping of income and costs of the pre-investment, investment and operational stages by elements and items, on the basis of which economic performance and feasibility of the business idea are determined.

The estimated costs of the first year of the Project are UAH 200,670; UAH 252,246 are costs of the investment stage that form initial investment. The estimated income of the Project is UAH 677,828, plus depreciation of the fixed assets during the first year: UAH 1,539,000.

The detailed expenses for market entry to be incurred by Dodon&Co Design and Construction Agency are presented in Table 7.

Table 7. Detailed expenses

<b>Description</b>	<b>Amount (UAH)</b>
Expenses for fixed assets (non-recurring ones)	
PC	53,448
Laptop	62,472
<b>Total</b>	<b>115,920</b>
Expenses for intangible assets (non-recurring ones)	
Website development	5,000
AutoCAD software	57,278
3-D MAX software	54,898
ABK-5	9,150
<b>Total</b>	<b>126,326</b>
Sales expenses (monthly ones)	
All types of advertising	5,000
Website maintenance and update	2,000
Personal vehicle expenses	4,000
<b>Total</b>	<b>11,000</b>
Administrative expenses (monthly ones)	
Communication	300
Internet	200
Office supplies	200
Coffee, tea, water for customers	500
Lease of premises	3,000
<b>Total</b>	<b>3,900</b>
Business expenses (monthly ones)	
Utilities	300
<b>Total</b>	<b>300</b>
Financial expenses (monthly ones)	
Cash withdrawal %	
Payment system service %	
Taxes	5% of profit
Unified social tax	1,320
<b>Total</b>	<b>1,320+ 5% of profit</b>
Organisational expenses (non-recurring ones)	
Licensing of activities	10,000
<b>Total</b>	<b>10,000</b>

High-quality services of Dodon&Co Design and Construction Agency require the computer equipment of the higher level to work with the special software and to develop the website for dynamic communication with customers. Moreover, there are planned monthly expenses for advertising, website maintenance and transport.

The aggregate income is planned to equal the aggregate expenses (to reach the break-even point) at the fifth month.

Starting from the fifth month of project implementation, Dodon&Co Design and Construction Agency will obtain the additional result, profit.

The design process will involve such software as AutoCAD, 3D MAX, ABK-5. This software requires modern hardware, namely a PC, a laptop.

Figure 6 shows the share of the founders' own contribution and the investment necessary.

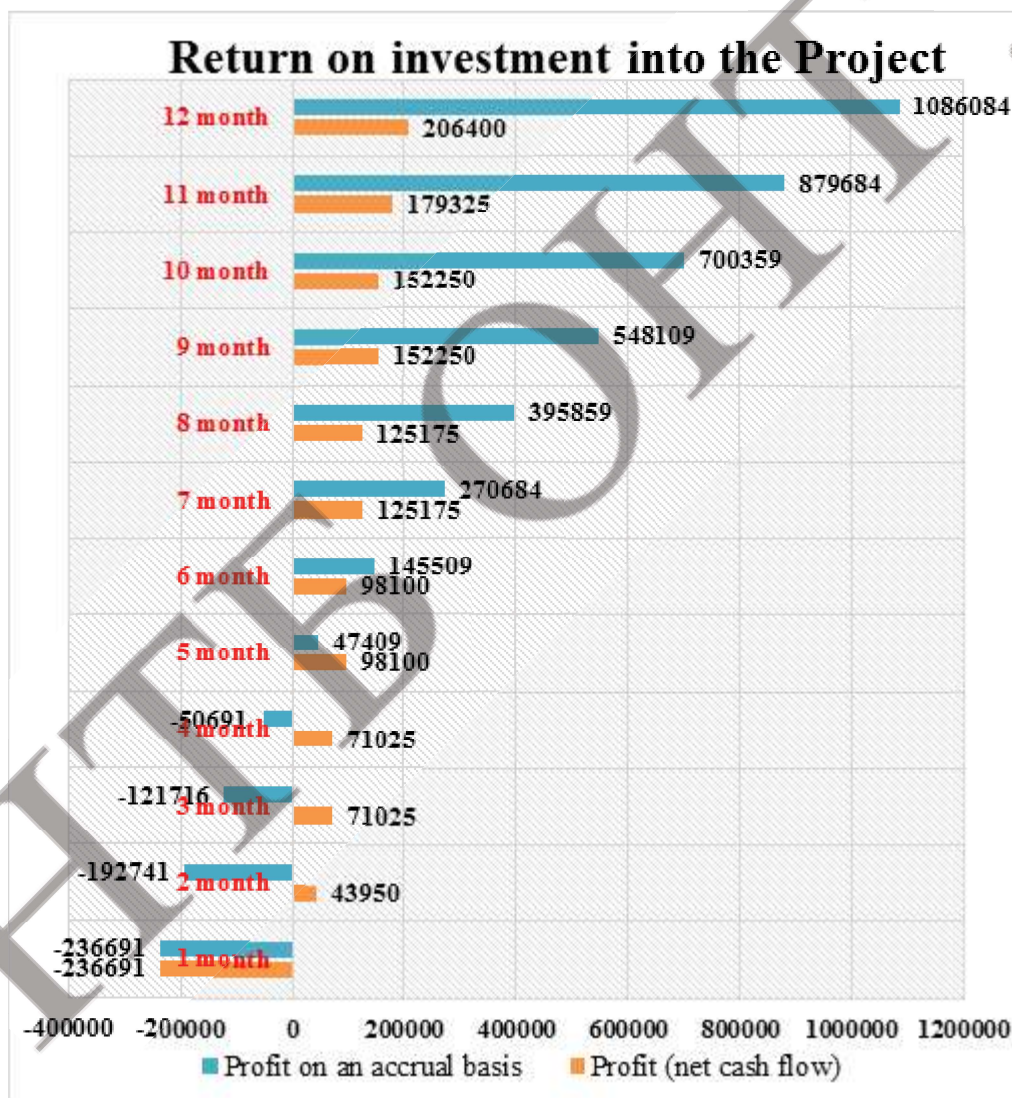


Figure 5. Business profitability (break-even point)

UAH 256,446 is the amount necessary to start the business, which is 100%.

Own contribution: UAH 28,200, which is 11%.

Licensing — UAH 10,000.

Lease of premises — UAH 3,000.

Website development — UAH 5,000.  
 Advertising — UAH 5,000.  
 Transportation expenses — UAH 4,000.  
 Communication — UAH 300.  
 Internet — UAH 200.  
 Office supplies — UAH 200.  
 Coffee, tea, water for customers — UAH 500.

Modern specialised equipment for monolithic services (approximate value of UAH 100,000, purchased in 2019-2021, period of provision of monolithic services).  
 Open-source software.

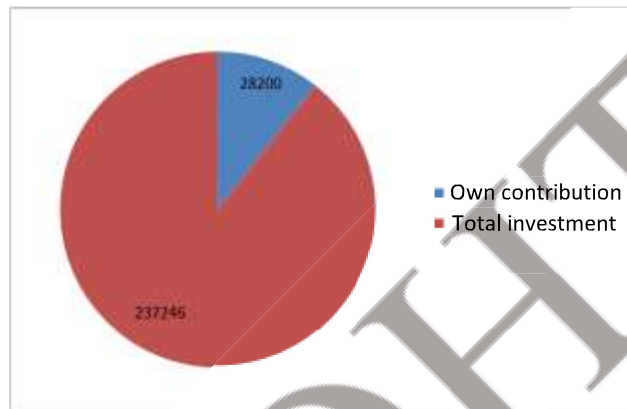


Figure 6. Shares of own contribution and investment

The investment is going to be raised as grants, loans and partnership.

The necessary investment will be used to purchase the specialised software and hardware, to provide design services

## V. CONCLUSIONS

Studies of the construction services market have shown that the construction industry facilitates development of small and medium-sized businesses more than any other industry. Development of the construction industry entails imminent economic growth in the country and resolution of numerous social issues.

Monolithic construction is a popular technology, both in construction of high-rise buildings, residential estates, office centres and low-rise industrial facilities or cottages. It is a complex unique technology of reinforced concrete construction, which enables constructing buildings and facilities of any shape and height in really unique projects in the short time frames.

The benefits of Dodon&Co Design and Construction Agency will be full-scale design and construction services. Customers will be offered a package of high-quality design and construction services provided by the highly-qualified experts at one place.

The results of research and approbation can be used for similar business projects.

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