

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE  
KYIV NATIONAL ECONOMIC UNIVERSITY  
named after VADYM HETMAN**

***Institute of Business Education***

**Department of International Management**

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External Form of Education

***MASTER THESIS***

**Title “Improving Project Management System at the Enterprise (on the basis of “Da-Stroy” LLC)”**

**By Bogdan Krainii**

(Student's name, surname)

(Signature)

***Academic Supervisor*** **Vitaly Tsarov**

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**Master Thesis has been approved for defense at  
Attestation Examination Commission (EC)**

Head of the Department of International  
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**KYIV 2022**

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE  
KYIV NATIONAL ECONOMIC UNIVERSITY  
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INSTITUTE OF BUSINESS EDUCATION  
Department of International Management**

|                                                                                                                     |                                                            |
|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| <b>MASTER DEGREE PROGRAM</b>                                                                                        | <b>«BUSINESS ADMINISTRATION (GENERAL) »</b>                |
| <b>BRANCH OF KNOWLEDGE</b>                                                                                          | <b>07 Management and administration</b>                    |
| <b>SPECIALTY</b>                                                                                                    | <b>073 «Management »</b>                                   |
| <b>SPECIALIZATION</b>                                                                                               | <b>8M10i «Business Administration (general)»</b>           |
| <b>AGREED</b>                                                                                                       | <b>APPROVED</b>                                            |
| Head of the project group (guarantor) of the educational-professional program<br><u>Y. Panchenko</u><br>(Signature) | Head of the Department<br><u>M. Burmaka</u><br>(Signature) |
| _____ 2022                                                                                                          | _____ 2022.                                                |

**INDIVIDUAL TASK**  
**higher education seeker** **Bogdan Krainii**  
Name, Surname  
Extramural studies

**Master Thesis**  
Title: “Improving Project Management System at the Enterprise (on the basis of “Da-Stroy” LLC)”

**The title of the Master’s thesis has been approved by the Rector’s Order “16”12.2021 № 1903-ct**  
**Master Thesis is based on**

**Preliminary plan of Master Thesis and the terms of its submission to the Academic Supervisor**

**Chapter 1** MODERN SCIENTIFIC AND THEORETICAL FOUNDATIONS AND APPROACHES TO PROJECT MANAGEMENT

*(Title, deadline – up to 24.01.22)*

**Chapter 2** ASSESSMENT OF THE FINANCIAL AND ECONOMIC CONDITION AND APPROACH TO PROJECT MANAGEMENT ON THE EXAMPLE OF THE COMPANY “DA-STROY” LLC

*(Title, deadline – up to 21.02.22)*

**Chapter 3** IMPROVEMENT OF THE PROJECT MANAGEMENT MECHANISM AND ITS EFFECTIVE CONTROL ON THE EXAMPLE OF THE COMPANY “DA-STROY” LLC

*(Title, deadline – up to 21.03.22)*

**Deadline for submitting the final version of Master’s Thesis to the Academic Supervisor**

*(Deadline - 16.05.22)*

|                                   |                                                                                                                                                                                                                 |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Object of research:</b>        | <u>Process of implementing project activities, taking into account the design and construction specifics of the enterprise.</u>                                                                                 |
| <b>Subject of research:</b>       | <u>The theoretical, methodological, and practical foundations for the implementation of project activities, identification of areas for improving project management approaches, and the system in general.</u> |
| <b>The purpose of the Thesis:</b> | <u>To reveal the scientific, theoretical, and practical foundations for the improving project management system at the enterprise</u>                                                                           |

**Specific tasks seeker has to accomplish to meet the objective:**

**In Chapter 1** Explore modern scientific and theoretical foundations and approaches in project management, identify the main concepts of the projects and their classification, review the essence and tasks of project management, project management systems, and their features, and analyze features of project management in a construction company.

**In Chapter 2** Conduct the assessment of the financial and economic condition and approach to the project management on the example of enterprise

Analise features of the design and construction market of Ukraine, with competitors' assessment. Review and study the current financial, economic condition, and financial management of the company. Make the assessment of existing project management approaches at the enterprise

**In Chapter 3** Propose a mechanism for improvement in the enterprise together with effective control on the example of the company. Develop the ways and approaches to improving the project management system,

and conduct the evaluation of the effectiveness of the proposed solutions and the cost of their implementation. Review the potential risks and alternative approaches. review the existing corporate social responsibility and advise some improvement if any.

The task has been set  
by the Academic Supervisor \_\_\_\_\_  
(Signature)

Vitaly Tsarov  
(Name, Surname)  
“     ”     2022.

The task has been given to  
seeker \_\_\_\_\_  
(Signature)

Bogdan Krainii  
(Name, Surname)  
“     ”     2022.

## ABSTRACT

Master's thesis for a master's degree on "Improving Project Management System at the Enterprise (on the basis of "Da-Stroy" LLC)" contains 86 pages, 22 tables, 2 figures. The list of references includes 50 items and 1 Annex.

The object of research thesis is the process of implementing project activities, taking into account the design and construction specifics of the enterprise.

The subject of the study is the theoretical, methodological, and practical foundations for the implementation of project activities, identification of areas for improving project management approaches, and the system in general.

The purpose of this master's thesis is to reveal the scientific, theoretical, and practical foundations for the improving project management system at the enterprise. The assessment is based on the performance of the LLC "Da-Stroy" which is a design and construction company and highlights areas for improving the mechanism of its management.

The main tasks to be covered in the master's thesis are the following:

- Identify the purpose of project management, the concept of the project, and their classification;
- Assess tasks of project management;
- Analyze the project management systems and their features;
- Organization and features of project management in a construction company;
- Conduct an economic and organizational assessment of the business activity;
- Assess the management approach taking into account the specifics of the business activity such as design and construction;
- Assess the economic efficiency of project management at the enterprise;
- Develop the ways to improve the project management mechanism at the enterprise;
- Develop recommendations for the implementation of a functional approach in the project management system at the enterprise;
- Assess advised solution from an economical point of view with identification of potential risks for implementation.

Year of thesis completion - 2022

Year of thesis defense - 2022

*Keywords: project management, project, management, process improvement, BIM (Building Information Modeling), planning, development.*

## **ACADEMIC SUPERVISOR'S REVIEW**

**on the master thesis  
by the student of the Institute of Business Education  
KYIV NATIONAL ECONOMIC UNIVERSITY  
named after VADYM HETMAN  
Master's degree program "Business Administration"**

**Bogdan Krainii**

Title: **Improving Project Management System at the Enterprise (on the basis of  
"Da-Stroy" LLC)**

### **1. Relevance of the research:**

The effectiveness of project management is always a critical issue for business. World practice and experience show that project management has become a common standard of conduct in almost any project-related industry. Therefore, improving the project management system of the enterprise is one of the priority directions toward sustainable company growth. Only in the systematic determination of the actual project goals, through monitoring its effectiveness it is possible to influence the negative factors and prevent the waste of different types of resources.

### **2. Positive aspects of the thesis:**

The paper has a comprehensive overview and analysis of the best practices and approaches to project management systems. The author suggested a new way of implementing an enterprise project management system.

### **3. The author's independent ideas and conclusions, scientific novelty:**

The author of the thesis proposed the innovative method of encouraging workers to follow the project-based approach within the company, which can be crucial in business administration.

### **4. Practicality of the conclusions and recommendations:**

The information presented in the thesis is relevant and can contribute to the development of the project management system of the enterprise.

### **5. Total result of the master thesis:**

The papers are well written, with very few clerical errors, and the style and layout are good. The student showed creative skills in the field of research and meets the required standards. The work is highly appreciated and approved for defense.

Academic Supervisor  
**PhD, Economics**

“ \_\_\_\_\_ ” 2022

**V. Tsarov**

## **Review**

on the qualification master's thesis of a higher education applicant

### **MASTER'S DEGREE PROGRAM «BUSINESS ADMINISTRATION (GENERAL)»**

**Bogdan Krainii**

The title “Improving Project Management System at the Enterprise (On the basis of “Da-Stroy” LLC)”

This qualification master’s thesis has shown a high level of understanding of the modern approach to project management supported by leading practice world practices and standards. The work was performed following the solution of identified and current problems at the enterprise, taking into account the specifics of the construction industry (design and construction).

A comprehensive analysis of financial and management activities and results of the company in recent years, analyzed the strengths and weaknesses, assessed approaches to the implementation of construction projects, which is the main area of the company. According to the results of the analysis, a set of solutions was formed to improve the project management process at the enterprise, the implementation of which will significantly increase the efficiency and potential of the company. The practical implementation of the proposed solutions will significantly reduce the duration of construction projects compared to the current approach and will help the company to achieve better financial results and competitive advantage.

The paper reveals the logic and correctness of the proposed solutions that have practical applications and conclusions. The student has a deep level and professional understanding of project management processes, and theoretical and practical aspects.

This work is relevant and has practical application in the field of BIM technology and advanced project management processes.

The work meets the requirements and deserves high praise and can be admitted to the defense.

Place of work and position of the reviewer  
Scientific degree, academic rank (if any)  
(Signature, full name)

Da-Stroy LLC Director  
Vitalii Vengerak

Signature certifies:

Place of a seal of the organization where the reviewer works  
(Post, signature)



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## INTRODUCTION

Relevance of the research topic. In the modern economy, most economic tasks are solved based on certain projects or programs (group or related projects) that initially determine the goals and priorities and then make attempts to achieve them within some constraints such as time, cost, resources, etc. Proper planning together with a clear understanding of the life cycle of any project significantly increases the chance of successful project implementation. World practice and experience show that project management has become a common standard of conduct in almost any project-related industry however in Ukraine the proper project management approach very often is ignored or implemented partially. That is why such topic research is very actual in the context of the design and construction industry.

Globally, there are several leaders in a project management standardization process together with many small or mid-level size companies who systemize the knowledge of proper project management, create approaches and explain the benefits of using modern tools and techniques in comparison to the “case by case” approach or intuitive without any methodological proven actions. This thesis is used the main concepts and ideas explained by the Project Management Institute (PMI), one of the well-known and structured leaders in the project management educational program who certifies different categories of specialists and especially Project Managers in the meter industry where they are working for.

The purpose of this master’s thesis is to reveal the scientific, theoretical, and practical foundations for the improving project management system at the enterprise. The assessment is based on the performance of the “Da-Stroy” LLC which is a design and construction company and highlights areas for improving the mechanism of its management.

The main tasks to be covered in the thesis are the following:

- Identify the purpose of project management, the concept of the project, and their

classification;

- Assess tasks of project management;
- Analyze the project management systems and their features;
- Organization and features of project management in a construction company;
- Conduct an economic and organizational assessment of the business activity;
- Assess the management approach taking into account the specifics of the business activity such as design and construction;
- Assess the economic efficiency of project management at the enterprise;
- Develop ways to improve the project management mechanism at the enterprise;
- Develop recommendations for the implementation of a functional approach in the project management system at the enterprise;
- Assess advised solution from an economical point of view with identification of potential risks for implementation.

The object of a master's thesis is the process of implementing project activities, taking into account the design and construction specifics of the enterprise.

The subject of the study is the theoretical, methodological, and practical foundations for the implementation of project activities, identification of areas for improving project management approaches, and the system in general.

Research methods. General and special approach methods are used for analysis. Among the general ones are: analysis and synthesis used in assessing the essence of the project activity meaning, its classification and stages of implementation, generalization, and structural analysis in assessing the project management approach taking into account the specifics of the design and construction industry enterprise with further calculating of economic efficiency of the proposed solutions for implementation. Identifying ways of improving the project management approach using modern tools, techniques, and recommendations. Statistical, graphical, and comparison methods were used as special

methods together with ones supported by modern software of Building Information Modeling (BIM)

The practical value of a master's thesis. The theoretical and practical developments made in this master's thesis are of the greatest value for implementation at the enterprise, as the recommendations concerned those places that needed change the most, but the experience gained can be used by other entities engaged in the design or construction activities. The implementation of recommendations on professional project management aimed at changing the functional approach to the project management system at the enterprise is of great value. It is important to consider in detail the project management mechanism in terms of best practices and approaches, given the specifics of the enterprise and its weaknesses compared to competitors, which can be corrected by improving the project management mechanism and using modern approaches and software available at the market.

The structure of the master's thesis consists of an introduction, three main sections, conclusions, and references. The first section describes the scientific and theoretical principles of project management. The second section describes the mechanism of project activities based on the work performance "Da-Stroy" LLC. The third section is given the possible changes for the improvement and implementation of the management processes and approaches at the enterprise.

# CHAPTER 1

## MODERN SCIENTIFIC AND THEORETICAL FOUNDATIONS AND APPROACHES TO PROJECT MANAGEMENT

### 1.1 The concept of the projects and their classification

The current term "project" resembles a Latin word "Projectum", as stated from the words "pro" and "jacere", meaning "Throw forward."

There is no one universal definition of the project but one of the simplest is mentioned in Rita Mulcahy's book [1, page 21]: "Project is a temporary endeavor with a beginning and the end creates a unique product, service or result". From this point of view, each project is unique and the result must be unique too. However, most work and activities being done in firms or organizations can be described as either operational or project work.

Operational work is ongoing work to support the project or business of the organization, and project work ends when the project is closed. The operational work is not a project. This difference is important to understanding and is curtail for project management development.

A similar meaning is mentioned in the DSTU ISO 10006: 2005 (ISO 10006: 2003, IDT) "National standard of Ukraine. Quality management systems. Guidelines for quality management in projects ", the project is the only process that consists of a set of coordinated and controlled species work with start and end dates, performed to achieve objectives that meet specific requirements and contain restrictions on a term, cost, and resources [2].

The other popular definition of the project given by different authors/institutions are reflected in Table 1.1

Table 1.1 - Definition of the project

| Number | Author/Resource                              | Definition                                                                                                                                                                                                                                                                       |
|--------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1      | British Standard BS<br>BS 6079-1:2002<br>[3] | A unique set of coordinated actions (works) with specific start and end points, started by an individual or organization to achieve specific goals with a set timeline, cost, and performance parameters                                                                         |
| 2      | Pedagogical dictionary [4]                   | Provides a definition of the project method, which is a system of teaching students, in the course of which they acquire the knowledge and skills of planning and executing certain tasks-projects.                                                                              |
| 3      | Wikipedia [5]                                | A project (or program) is any undertaking, carried out individually or collaboratively and possibly involving research or design, that is carefully planned (usually by a project team, but sometimes by a project manager or by a project planner) to achieve a particular aim. |
| 4      | Merriam Webster Dictionary [6]               | A planned undertaking: such as<br>a: a definitely formulated piece of research<br>b: a large usually government-supported undertaking<br>c: a task or problem engaged in usually by a group of students to supplement and apply classroom studies                                |
| 5      | B. Wolfson [7]                               | The project was understood as the process of studying certain material with the acquisition of knowledge and skills and then designing projects based on the knowledge gained.                                                                                                   |
| 6      | E. Polat [8]                                 | Considers the project through the project method it is – a set of educational and cognitive techniques that allow solving one or another problem as a result of independent actions of students with the compulsory presentation of these results.                               |
| 7      | O. Pometun [9]                               | Emphasizes that the project is an idea, a plan, a prototype of a certain object.                                                                                                                                                                                                 |
| 8      | O. Kobernik [10]                             | The scientist also looks at the project through the method, namely, he sees a learning system under it, where users gain knowledge in the process of planning and performing progressively more complex tasks.                                                                   |

*Source: built and translated into English by the author according to the sources*

Today, the “gold standard” of project management is described in the PMBOK ® (Project Management Body of Knowledge) – created and supported by the Project Management Institute [11].

Project Management Body of Knowledge (PMBOK) is a set of standard terminology and guidelines (a body of knowledge) for project management. The body of knowledge evolves over time and is presented in A Guide to the Project Management Body of Knowledge (the Guide to the PMBOK or the Guide), a book whose sixth edition was

released in 2017. The Guide is a document resulting from work overseen by the Project Management Institute (PMI), which offers the CAPM and PMP certifications[12].

The 7<sup>th</sup> revision of PMBOK was announced in August 2021 and some changes would be implemented. The key difference was described in some methodological methods and behavior skills. For example, agile methodologies are no longer an addition to the standard, they are part of it. The reason was simple, in recent years we have been living in an environment where customer preferences and technologies are changing rapidly, and competitors are putting pressure. Therefore, project teams need to be able to quickly respond to changes both inside and outside the project.

It is important to note that PMBOK does not abandon classical or hybrid approaches, but invites the manager to choose a project implementation methodology that will help create maximum value for the customer.

The choice of methodology depends on the industry, the specifics of the project, and the wishes of the customer.

Also, some changes were implemented into behavior skills where previous versions, PMBOK focused on knowledge areas and process structure for each knowledge area. In the new one, behavioral skills and the principles that a project manager must follow to create value came out on top. Formal results have given way to the satisfaction of key stakeholders from the implementation of the project and added value in the eyes of the customer and the organization.

This is not about completely abandoning the process approach. Where it is appropriate, typical repetitive sets of activities - the project manager should strive to use it.

All such changes show constant improvements in the process, concepts, and approaches of project management that can be realized in each sphere of science as a

universal tool that brings additional value in comparison to the “chaotic” unsystematic approach than may be applied by young enterprise, firm or project managers without understanding the key basis and principles.

Project management includes approaches and processes, involves roles and responsibilities, and authority levels. Applying the practices, tools, techniques, knowledge, and skills of project management helps increase the likelihood of project success. Project management involves more than can be considered at first look. It is a structured way of projects implementation.

A comparison of traditional (functional) and project management is presented in Table 1.2

Table 1.2 - Traditional (Functional) vs Project Management.

| Functional Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Project Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>•responsibility for maintaining the “status quo ”;</li> <li>•powers defined by the structure</li> <li>•management;</li> <li>•a stable range of tasks;</li> <li>•limited liability</li> <li>•their functions;</li> <li>•works are performed in stable</li> <li>•organizational structures;</li> <li>•the range of tasks to be performed</li> <li>•nude, inviolable;</li> <li>•the main task - optimization;</li> <li>•success is determined by the achievement of industrial</li> <li>•functional results;</li> <li>•limited variability of conditions and situations</li> </ul> | <ul style="list-style-type: none"> <li>•responsibility for changes;</li> <li>•uncertainty of authority;</li> <li>•a constant range of changing tasks;</li> <li>•responsibility for the inter-functional package</li> <li>•national tasks;</li> <li>•work in the structures operating within the boundaries</li> <li>•project cycle;</li> <li>•advantage of non-standard (innovative)</li> <li>•activities;</li> <li>•the main task - conflict resolution</li> <li>•those;</li> <li>•success is determined by the achievement of the</li> <li>•ultimate goals;</li> <li>•Uncertainty is intrinsic activities.</li> </ul> |

*Source: built and translated into English by the author according to the sources [13, page26]*

Projects may be groped in the program. A program is a group of related projects. By grouping related projects into a program, an organization can coordinate the management of

those projects [1, page 23]. Projects and programs may form a portfolio: a group of programs, individual projects, and other related operational work that are prioritized and implemented to achieve a specific strategic business goal.

Different types of projects may be implemented within the company's project portfolio. These can be projects aimed at making a profit and/or projects aimed at developing the company. It is not rational to use the same tools, methods, and models of project management to manage different types of projects. This leads to more confusion, conflicts, and the need to do unnecessary work. The proper portfolio management increases the company value or/and cost, diversify the sources of profit generation or value creation

The introduction of classification may standardize the processes, tools, and methods of project management for different types of projects. This allows to independently develop various methods and tools of project management in the company. As a result, the company develops its unique methodology that takes into account all the features of the company and its customers.

Projects may be classified by areas of activity (determines the technology of project implementation, phases and stages of project implementation) [14], [15], [16]:

- Technical. Usually initiated for the creation of the physical product with clearly defined technical parameters or characteristics;
- Organizational. Usually initiated for changing the organizational structure and processes of the organization. This also may be considered an organization development project. They may be developed and implemented during different stages of company development or modernization;
- Economic. Obtaining the company's profits to account for sales of products or assets of the company;

- Social. Focused on achieving socially important results. Very often it may be considered a non-profitable project;
- Mixed. Mixed projects include several elements of the above types.

Depending on the type (nature of the subject area), projects are divided into the:

- Investment projects, the main purpose of which is to create or update the fixed assets of organizations through the implementation of appropriate investments;
- Innovative projects focused on the implementation of fundamentally new developments necessary for the further development of economic systems;
- Research projects focused on research activities, development of new materials, designs, and modern software information processing facilities;
- Educational projects, aimed at solving problems related to the provision of educational services;
- IT projects, related to information technology, which in their queue are aimed at the creation, development, and support of information systems.

Depending on the duration, projects are divided into short-term (up to 3 years), medium-term (from 3 to 5 years), and long-term (more than 5 years).

Projects can also be classified:

- By scale (the size of the project itself, the number of participants, and environmental impact) - small, medium, large, very big.

The scale of projects can be viewed in a more specific form: interstate, international, national, interregional and regional, intersectoral and sectoral, projects of a specific business entity, etc;

- From the point of view of using the results, projects can be conditional;

- Divided into: research - aimed at conducting additional research of a specific problem situation; pilot - development-related new solutions and their approbation to identify possible technological problems; model - associated with the need to generalize experience and optimization of production and management processes; implementation projects - are aimed at achieving economic effect from the implementation developed model technologies.

Each type of project has its characteristics and limitations that are necessary to take into account when developing the project structure and finding the necessary resources to implement it.

This classification may be different for each company or even country or region, company work area, etc. For example, 100 000 UAH may be considered as a big project for a small shop refurbishment project while at the same time, for a laboratory research company it may be even not enough for initiation phase implementation.

## **1.2 Essence and tasks of project management**

In most projects, the project manager should work under some constraints that directly impact the final results and the success of the project. Usually, such constraints are represented in [17], [18]:

- Time;
- Cost;
- Scope;
- Resources;
- Quality;
- Risks;
- Customer satisfaction.

Such constraints are interconnected in different stages and during the project life cycle through the initiation – planning -execution (monitoring and controlling) -closing. The task of the project manager is to keep a balance between the desires of the client and available opportunities to do the project done within the constraints described above.

As mentioned in a project management book of professor Ulyanchenko, Project management means activities aimed at implementation of the project with the maximum possible efficiency at the set restrictions on time, means (and resources), and also the quality of final project results (documented, for example, in the terms of reference) [13, page 16].

Thus, the essence and tasks of project management should be considered from a philosophical point of view and based on understanding the project as a separate object of management. Its characteristic features may include earlier described: novelty, temporality, and uncertainty from the specifics of management methods.

This is management in the face of uncertainty of results. The project managers' solutions, approaches, and the uniqueness of the work performed cannot guarantee with sufficient probability the exact observance of the plan. Therefore, management should focus on reducing uncertainty throughout the project, eliminating the risks (or mitigating them), and exploiting opportunities. This allows the Project Manager to timely eliminate the flaws in the plan and errors of its developers, which are inevitable in conditions of uncertainty.

Project management should be relatively separate from ongoing activities. This is necessary to fully focus on achieving the goal of the project, as well as to ensure efficiency in making management decisions. However, it is not always possible and very often depends on the type of organizational structure [19]: project-oriented, functional-oriented, or matrix. In a project-oriented organization, the project manager has the highest level of authority on his/her team and implemented strategy, in functional organization resources belong to the functional managers and his power is the highest (for example, Engineering Department, Procurement Department, Logistic Department, etc.) and matrix type of organization shares the project power between the project manager and the functional manager. Each structure has pros and cons but from the project management point of view, the best one is project-oriented where power is concentrated in one manager who is fully responsible for the result.

One of the key tasks of the project manager is to find a compromise between various factors and resources. In project management, there is an unwritten rule that: "time is important above all else." For the sake of timely execution of design work, you can sacrifice budget, resource costs, and much, excluding, of course, the quality of design solutions.

Among the decisions that have to be made when implementing projects, priority is given to those that are more reliable in achieving the result, even if they may be considered ineffective in other parameters. Project management risk is unacceptable, even if it is assessed positively to the expected results.

The need to reconcile the interests of the project stakeholders determines the mandatory presence of a politician's features in the project manager. He/she must constantly maintain their interest in the results of the project, prevent possible conflicts, and eliminate bias about the possible consequences of introducing innovations into current activities.

From the point of view of the application of the most expedient methods that allow achieving the final results following the idea of the project, the theory of network modeling should be considered the methodological basis of project management. Analysis of network modeling makes it possible to avoid such problems by breaking down the total complex of works into separate works, determining their duration and required resources. There are several methods for doing this, the most popular of which are the Gantt Chart and Network Progress Schedule.

The project management methodology provides for the design, implementation, and development of a project as a complex reproducible, and functioning system in a dynamic external environment. The main elements of the project are the concept, idea (problem, tasks), means of their implementation (solution of the problem), and the results obtained in the process of project implementation.

The modern tools give the project manager opportunity to reduce the time of preparation of different graphical presentations of the project that include: task duration, interconnections (predecessor, successor) designated resources, effective tracking system, visual interpretation of reports, etc. All such fits are presented and realized in different software packages there the best known are Primavera and MS Project (some functions of MS Project may be imitated in its processor -Excel table).

### **1.3 Project management systems and their features**

Today, there are various sources of information on project management approaches and principles, which contain methodological knowledge of project management: professional standards of project management, author's concepts, and various scientific articles on project management.

The main developers of the project management methodology are the US Project Management Institute (PMI), the Japan Project Management Association (PMAJ), the International Project Management Association (IPMA), and the International Organization for Standardization (ISO). The developers have created the following standards: mono project management, such as ISO 10006 (ISO), PMBOK (PMI); program management standards such as P2M (PMAJ), Standard for Program Management (PMI); standards of organizational management of GDM 3 projects (PMI).

Today, one of the most popular is the PMBOK standard [20], developed by the US Project Management Institute (PMI), as evidenced by the annual number of new certified project management managers. PMI is the world's leading project management organization with over 600,000 Global Members and over 300 Local Chapters Internationally. The quantity of members grows annually even despite the initial requirements (certain experience, managerial position in project development and implementation process) for applicants where not everyone can become accepted to pass the exam after qualification training (both preparation and exam passing are payable options where the cost depends on memberships status of applicant ) [21].

IPMA is a federation of about 70 Member Associations (MAs). MAs develop project management competencies in their geographic areas of influence, interacting with thousands of practitioners and developing relationships with corporations, government agencies, universities, and colleges, as well as training organizations and consulting companies.

The structure of IPMA is different from the PMI certification program but still, it has a training preparation program, initial requirements for applicants, examination, and membership process. A training aid program (TAP), to promote project management and provide information about IPMA activities, IPMA's globally used and widely recognized 4 Level Certification scheme of project professionals, and also facilitate the host country to join IPMA as a Member Association through an appropriate professional association.

PMAJ, the Project Management Association of Japan is founded on October 5, 2005, the Project Management Professionals Certification Center (PMCC), and the Japan Project Management Forum (JPMF) combined to legally form the Project Management Association of Japan (PMAJ).

PMAJ activities commenced in November 2005 as a volunteer-driven Non-Profit Organization that provides a standard guide book, Program and Project Management for Enterprise Innovation (P2M), and the certification systems [22].

The goal of the Project Management Association of Japan (PMAJ) is to educate and train project management practitioners to foster public recognition of project management applicable to various private and public sector enterprise activities and contribute to the general public by strengthening international competitiveness in the industry and developing vital economic and social support, by offering project management practitioners a certification system, training courses and a means for spreading project management knowledge.

However, PMAJ is not such popular as PMP and even IPMA and is mostly used and recognized the Japanese project management, professionals.

Also, Project management systems can be considered as special software.

The second definition of project management system generally refers to project management technology or software. This system incorporates the applications and tools used to plan, organize, and manage complex projects. These can include general software applications such as spreadsheets and email applications, or specific project management applications for:

- Estimation of activities;
- Creating, updating, and reporting schedules;
- Track costs and budgets;
- Allocation of resources;
- Risk recording and management;
- Control of project changes;
- Exchange of information and project updates.

The most used ones were mentioned in the previous paragraph but some others are below and can be grouped by type of software: stationary (standalone) software (Such programs usually allow you to store information in a file that can then be shared with other users or the data is stored in a central database) or Web.

Stationary:

- Cerebro - software designed for a large number of users to manage media projects;
- GanttProject - a program designed for project planning based on the construction of Gantt charts and PERT charts;
- KPlato - application for project management under Linux;
- OpenProj is a multi-platform project management software. Developed by LibreOffice;
- Open Workbench;

- ProjectLibre - free software for managing open-source projects in Linux, macOS, or Windows, which also supports compatibility with Microsoft Project files.

Web:

- Bitrix24 is a Russian corporate project management and CRM system.
- Workstation is a Ukrainian online service for project management, teamwork, and task control.

There are many others but mentioned ones are the most popular.

These tools can be considered for one or more users, big and small amounts of data received/sent/shared.

## **1.4 Organization and features of project management in a construction company**

Approaches to project management do not depend on the type of activity of the company but have certain features that must be influenced by the project manager. The process of building design and construction (which may include reconstruction or overhaul) in modern conditions is due to the presence of a large number of regulatory obligations and regulations, local, regional and national standards, international practices, and recommendations. Very often this activity is limited by the significant cost of resources, choice of facilities, and other factors, and therefore, without evaluation and proper management, it is usually difficult to identify risks associated with the project, and therefore investors face significant financial costs, budget overruns and violation of project deadlines. The main goal of project management in the construction sector is to avoid existing risks, assess the costs incurred, and ensure the successful implementation of the project. At the same time, project management in construction or design areas requires the development of effective management and understanding of the construction and design process. Projects implemented in construction have a set of objectives and certain constraints, especially in terms of implementation time budgeting, and adequate funding.

With the help of modern methods of effective management, it is possible to achieve the planned scale of construction, in compliance with the terms of the project and justification of the cost of its construction. Before considering the stages of organizing project management in a construction organization, we first assess the level of relationships between the entities with which companies interact (Figure 1.1).

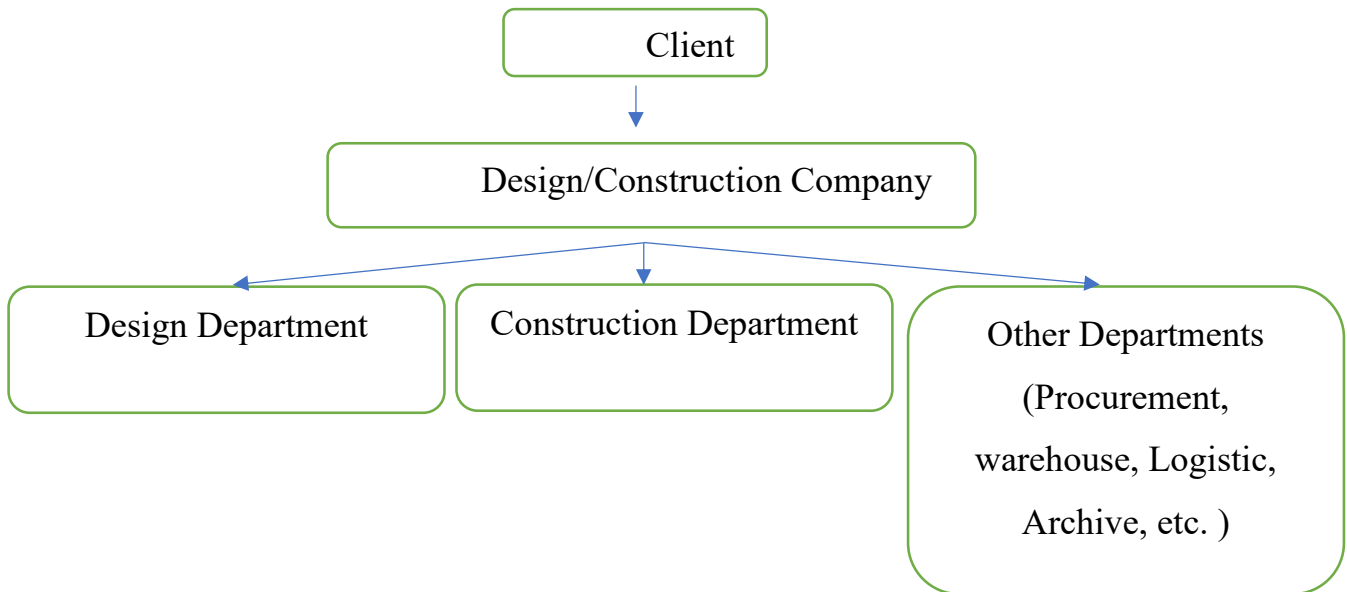


Figure 1.1. Scheme of relationships between entities that interact with the construction company.

Crated according to ([23, page 79-86])

There are different legal types of cooperation between Client and Contractor (in our case with Design/Construction Company) but western practice highlights the next ones as the most popular and effective that are described in the Procurement section on PMBOK knowledge area [14]:

- Fixed Price (also known as Firm Fixed Price or Lumpsum) - agreements in which the two parties state the goods or services one party will provide and establish the price the other party will pay for them;
- Time and Materials (or unit price) - a pricing model that calculates and charges the time spent by each specialist for sustained work, good or service, or as a cost for one unit price created or developed;
- Cost Reimbursement - the form of cooperation in which the contractor has reimbursed the actual costs they incur in carrying out the works, plus an additional fee that may be included (or separately described).

As described in Rita Mulcahy's book [1, page 470-475], there may be different variations of such contracts with some added value for the Contractor in form of some incentive fee, bonuses, or percentage of cost when the result meets the Client KPI (quality, timeline, budget, etc.).

All such types of contracts have some pros and cons and should be considered by both parties depending on the situation because they have some advantages at the same time disadvantages or risks for another. For example, a Fixed Price type of contract has a lower risk for the Client or seller it is the opposite (the highest) in case of wrong estimation or calculation of the necessary scope of work. At the same time, the Firm Fixed Price contract is a usually higher cost for a client because a Contractor tries to cover all possible risks or mitigate them as maximum as possible [24].

Any construction or design project should be properly assessed but, first of all, it should be initiated and usually, it is done during the creation of the Project Charter [25].

Even though some companies ignore the creation of this document, the Project Charter is mandatory and serves as an internal document that contains information on high-level planning (scope, results, assumptions, etc.) about the project. The Project Manager / Sponsor creates the Project Charter at the project initiation stage in consultation with the program manager.

Its purpose is to recognize the existence of the project and to begin the planning process necessary to achieve the objectives of the Project. It is not intended to provide the client with a formal contract or legal document. The project charter is the input material at the project definition stage, where much of the information contained in this document forms the basis for detailed project planning.

It describes the project [26]:

- Vision, goals, scope, and results (what is planned to be achieved);
- Stakeholders, roles, and responsibilities (who will be involved);
- Resource, financial, and quality plans (how this will be implemented).

In addition, the Project Charter defines the boundaries of the project. It describes in detail the scale of the project, within which all results must be produced. Activities should be carried out outside the scope of the project only if the valid "change request form" has been approved by the project sponsor.

The next step after the approval of the Project Charter is the official appointment of the project team.

Another important step is the creation of the Project Management Plan (PMP) that covers all aspects of project development, changes implementation, acceptance, and project closure.

The complexity of the Project Management Plan (PMP) depends on a lot of factors and project scope, size, cost, time, etc.

The main goal of the Project Management Plan (PMP) is to support and control all components of the project together to achieve the goal of the project.

It includes, but is not limited to:

- Define the purpose and scope of the project;
- Describe any considerations of scope or objectives that should be excluded from the project or results;
- Ensure that the volume statement is consistent with similar statements in business cases, project statutes, and any other relevant system or business comparison documents;
- Identify and write a business or system that should be satisfied with the project;

- Give a brief summary: project objectives result to achieve the project objectives, methods by which the satisfaction of objectives will be determined, tools, methods for each segment, and recommendations needed during implementation.

It gives the link of this project with other projects that may be considered during the work or initial information assessment:

- If necessary, gives information on how the project will be integrated with other projects or current workflows;
- Add a link to the official statement of project requirements (procedures, specifications, descriptions);
- Gives the link or information about the people/company (entity) that may impact the project performance or may be impacted, including the project Client, Senior Program Leadership, and the Project Team.

Together with all mentioned above the project management in the construction company should consider the next factors the company:

- Strategic goals;
- Strategies for implementing projects in construction;
- Components of the potential of a construction company.

The factors above include Economic components:

- Financing and/or crediting the implementation of construction projects with the involvement of own or borrowed funds;
- Taxation of enterprises engaged in design and construction;
- Pricing for design/construction projects;
- Insurance of risks of project implementation;
- Assessment of the effectiveness of project implementation.

Organizational components:

- Organizational structural units responsible for the implementation of projects;
- Internal company culture and maturity;
- Stimulating the implementation of projects and result orientation;
- Monitoring the implementation of projects in the construction sector;
- Best practice approach.

## **CHAPTER 2**

### **ASSESSMENT OF THE FINANCIAL AND ECONOMIC CONDITION AND APPROACH TO PROJECT MANAGEMENT ON THE EXAMPLE OF THE COMPANY “DA-STROY” LLC**

#### **2.1 Features of the design and construction market of Ukraine, an overview of competitors**

The design and construction market during 2021 showed a small increase in comparison to the previous year even though almost full 2021 was under different Governmental restrictions created by the COVID pandemic situation not only in Ukraine but globally.

According to the Official website of the Ministry of Development of Communities and Territories of Ukraine [27], in the article “General results of the construction industry for January-August 2021” (dated 13.10.2021 excluding the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol and part of the temporarily occupied territories in the Donetsk and Luhansk regions) In January-August 2021, Ukrainian enterprises performed construction works worth 121 billion hryvnias. The construction output index is 101.8% compared to the corresponding period of 2020 (Table 2.1)

Volumes of construction work performed by region in January - August 2021 (excluding the temporarily occupied territory of the Autonomous Republic of Crimea, the city of Sevastopol, and part of the temporarily occupied territories in the Donetsk and Luhansk regions).

The graphical illustration of Table 2.1 is presented in Figure 2.1 - General results of construction activities in Ukraine (including each region) from January-August 2021 to January-August 2020.

Table 2.1 - General results of construction activities in Ukraine (including each region)

|                  | January-August 2021 to January-August 2020 | The place of the region in terms of growth | Construction works were completed in January-August 2021 |                   |
|------------------|--------------------------------------------|--------------------------------------------|----------------------------------------------------------|-------------------|
|                  |                                            |                                            | Million UAH                                              | In % to the total |
| Total in Ukraine | 101,8                                      | x                                          | 121043,9                                                 | 100,0             |
| including        |                                            |                                            |                                                          |                   |
| Vinnitsa         | 93,0                                       | 17                                         | 5405,0                                                   | 4,5               |
| Volyn            | 114,3                                      | 5                                          | 1547,0                                                   | 1,3               |
| Dnepropetrovsk   | 87,1                                       | 19                                         | 10924,1                                                  | 9,0               |
| Donetsk          | 97,0                                       | 13                                         | 4992,8                                                   | 4,1               |
| Zhytomyr         | 98,5                                       | 12                                         | 1214,6                                                   | 1,0               |
| Zakarpattia      | 71,4                                       | 23                                         | 696,5                                                    | 0,6               |
| Zaporizhzhia     | 87,5                                       | 18                                         | 1660,0                                                   | 1,4               |
| Ivano-Frankivsk  | 119,3                                      | 4                                          | 2386,0                                                   | 2,0               |
| Kyiv             | 107,9                                      | 9                                          | 8694,5                                                   | 7,2               |
| Kirovograd       | 69,1                                       | 24                                         | 602,6                                                    | 0,5               |
| Luhansk          | 77,4                                       | 21                                         | 292,6                                                    | 0,2               |
| Lviv             | 94,1                                       | 16                                         | 7361,1                                                   | 6,1               |
| Mykolaiv         | 100,3                                      | 11                                         | 2154,3                                                   | 1,8               |
| Odesa            | 110,1                                      | 7                                          | 15688,3                                                  | 13,0              |
| Poltava          | 96,8                                       | 14                                         | 5261,9                                                   | 4,3               |
| Rivne            | 121,9                                      | 3                                          | 2090,9                                                   | 1,7               |
| Sumy             | 95,4                                       | 15                                         | 993,9                                                    | 0,8               |
| Ternopil         | 155,5                                      | 1                                          | 2242,8                                                   | 1,9               |
| Kharkiv          | 109,7                                      | 8                                          | 10786,3                                                  | 8,9               |
| Kherson          | 79,7                                       | 20                                         | 673,0                                                    | 0,5               |
| Khmelnitsky      | 113,0                                      | 6                                          | 3699,2                                                   | 3,1               |
| Cherkasy         | 132,1                                      | 2                                          | 1842,5                                                   | 1,5               |
| Chernivtsi       | 62,8                                       | 25                                         | 829,5                                                    | 0,7               |

|           |       |    |         |      |
|-----------|-------|----|---------|------|
| Chernihiv | 77,2  | 22 | 1233,1  | 1,0  |
| City Kyiv | 104,7 | 10 | 27771,4 | 22,9 |

Source: built by the author based on the Official website of the Ministry of Development of Communities and Territories of Ukraine [27],

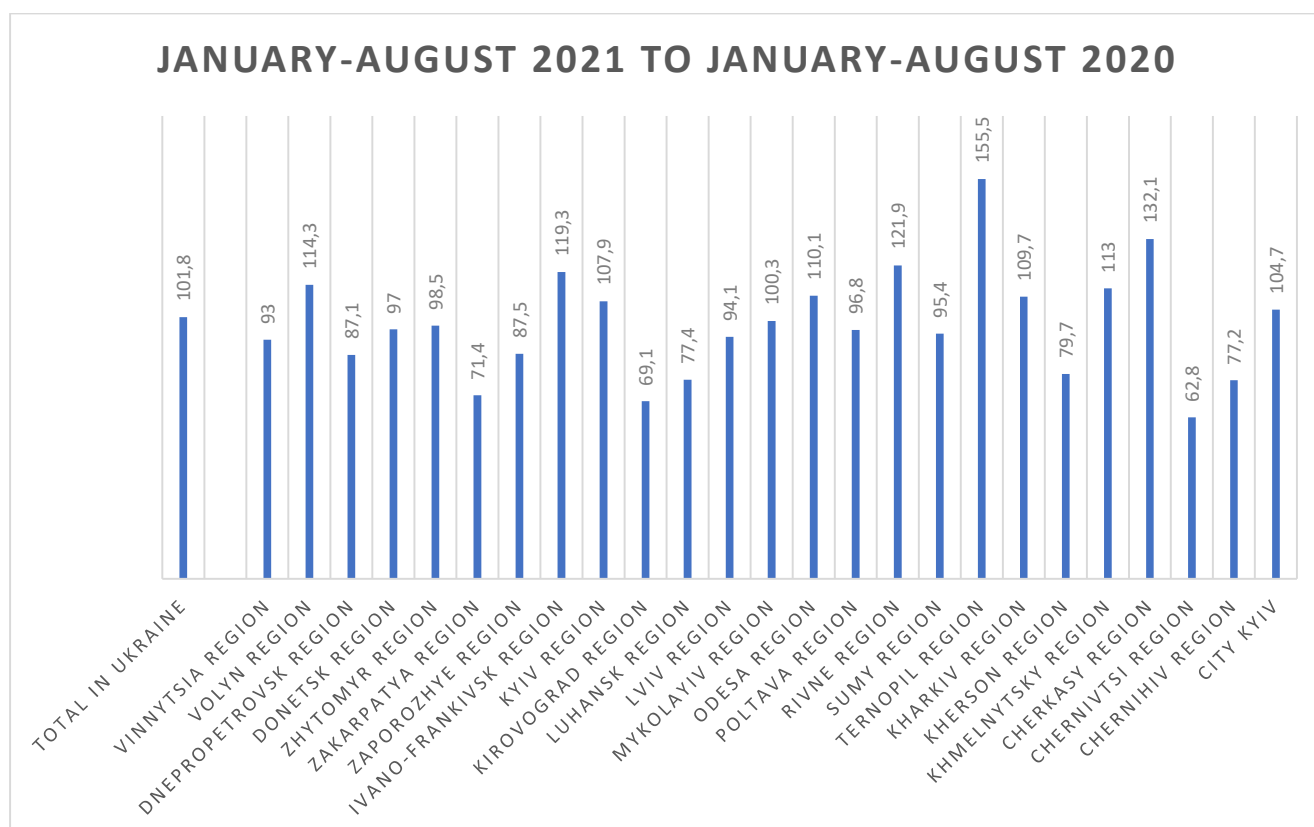


Figure 2.1 - General results of construction activities in Ukraine (including each region) from January-August 2021 to January-August 2020

Source: built by the author based on the Official website of the Ministry of Development of Communities and Territories of Ukraine [27]

New construction accounted for 34.9% of total output, capital and current repairs - 38.4%, and reconstruction and technical re-equipment - 26.7%.

The volume of construction works in January-August 2021 compared to January-August 2020 increased the enterprises of 11 regions, most of them: Ternopil (by 55.5%),

Cherkasy (by 32.1%), Rivne (by 21.9%)), Ivano-Frankivsk (by 19.3%), Volyn (by 14.3%), Khmelnytskyi (by 13%), Odesa (by 10.1%), Kharkiv (by 9.7%), Kyiv (by 7.9%), Mykolaiv (by 0.3%) oblasts and the city of Kyiv (by 4.7%).

The volume of construction works at enterprises in 14 regions decreased, including Chernivtsi (by 37.2%), Kirovograd (by 30.9%), and Zakarpatya (by 28.6%) oblasts.

The general trend in August 2021 compared to the previous month was influenced by an increase in the volume of construction of civil engineering by 17.9, non-residential buildings by 11.5%, and residential buildings by 0.5%.

Enterprises from 8 regions of the country (Kyiv, Odesa, Dnipropetrovsk, Kharkiv, Kyiv, L'viv, Vinnitsa, and Poltava oblasts) performed 76% of the total construction volume.

Per 1 person of the current population, the volume of construction work performed in Ukraine as a whole in January-August 2021 amounted to 2911 hryvnias (UAH).

According to the website of the Ministry of Economy [28], one of the factors of positive dynamics we observe in the field of construction is the increase in the pace of implementation of large-scale construction projects aimed at improving transport infrastructure. In 2021 year, the funding of the state road fund has almost doubled compared to last year, which allowed performing a much larger amount of work on the construction and rehabilitation of roads.

In addition, the launch of the state mortgage lending program also contributed to the growth of construction output. Ukrainians began to invest more in the construction of their own homes, which stimulated the intensification of the real estate market. According to the State Statistics Service, the volume of housing construction has increased by 18.4% since the beginning of the year 2021.

The information is mentioned on the Official website of the Ministry of Development of Communities and Territories of Ukraine [27].

In the construction industry, as of November 2019, there are 29.6 thousand enterprises with 268 thousand employees and 22.9 thousand individual entrepreneurs with 17.1 thousand employees. In total, the industry employs 312.3 thousand people (3.6% of the total number of employees in economic entities in all types of economic activities). For comparison, in the EU this figure ranges from 4.5% to 6.5%.

One analytical article mentioned that as of the beginning of 2020, 56,855 construction companies were operating, which is more than a year earlier [29].

All this together with the government-supported program of «Velyke Budivnytstvo» [30] shows the tendency for increasing players in the construction market and as result, completion. However, the growing percentage of construction in 2021 shows a tendency and outlook for keeping this dynamic, and in 2022 with the possible increase that is also may be considered a positive signal for design and construction companies.

## **2.2 Analysis of the current financial and economic condition and financial management of the company “Da-Stroy” LLC**

The object of analysis of this study is the project design and construction company “Da-Stroy” LLC, which focuses on different complexity of design work, and industrial and civil construction activities. The company was established in 2007, but every year the company tries to look for promising and new ways of development.

Full name of the legal entity "DA-STROY" LIMITED LIABILITY COMPANY (“Da-Stroy” LLC) [31]

Date of registration 22.05.2007.

The amount of the shareholder capital is 550,000.00 UAH

Main Activities:

- 41.20 Construction of residential and non-residential buildings.

Others:

- 43.12 Preparatory work on the construction site;
- 43.99 Other specialized construction activities;
- 46.73 Wholesale of wood, construction materials, and equipment sanitary equipment;
- 71.12 Activities in the field of engineering, geology, and geodesy, provision of technical consulting services in these areas;

The scope of work included but was not limited to:

- Design works (different stages such as pre-engineering, project, work project, etc);
- Reconstruction and capital repair work;

- Dismantling works;
- Finishing works;
- Plumbing works;
- Installation of networks and equipment for ventilation and air conditioning systems;
- Electrical works;
- Installation of Internet networks, video surveillance, control access, and fire-fighting systems;
- "Turnkey" projects;
- Procurement of equipment and installation;
- Project management consultant.

During its activity, the company has formed a team of professionals, with experience, and competencies that allow us to carry out projects of any complexity and during a limited period. All employees have significant experience and knowledge in their industry, therefore responsibility and quality of performance for the company are in the first place. The company fully owns all applicable legal acts and technical standards, which allow finding prompt solutions in the event of any non-standard situations during the execution of work.

Today, the company is an active player in different sectors of construction project service not only for private and governmental tasks but actively implemented different projects financed by international donors within the scope of interagency agreements between Ukraine and the USA.

The company's portfolio [32] includes dozens of different projects implemented around Ukraine and that is why company "Da-Stroy" LLC may be considered as a qualified partner that has comparative advantages in the market of design and construction services.

The company structure is presented by different functional engineers and technical personnel under the leadership of the company director Mr. Vitaliy Vengerak who is also a

Founder of “Da-Stroy” LLC and a manager with extensive experience in managing the construction business.

However, at present, the “Da-Stroy” LLC doesn’t have a functional structure division, and a team is formed from the main staff for projects implantation (permanent employees) and additional outsourcing staff upon request. The main staff is presented by a different specialist with an average experience of 15-20 years.

The company has all main necessary tools and equipment for project development and implementation but in case of necessity of something additional there are some partnership cooperation with other construction companies who are ready to provide all necessary on a reimbursable basis or necessary equipment is procured if a rental cost exceeds the cost for procurement.

Currently, this model is effective for a mid-size projects’ implementation that is conducted in some sequence, however, in case of increasing, reorganization actions may be required for more effective management.

To assess the peculiarities of the company's activities, it is necessary to assess its potential, which is reflected in the availability of sufficient capital, qualified personnel, organization of production, as well as the state of supply and demand in the market.

A SWOT analysis should be carried out which will highlight its strengths and weaknesses, opportunities and threats for the “Da-Stroy” LLC (Table 2.2).

Table 2.2 - SWOT analysis of “Da-Stroy” LLC

| INTERNAL STRATEGIC FACTORS |                                                                                                                             |                                                                                                                        |                |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|----------------|
| STRENGTHS (+)              | <ul style="list-style-type: none"> <li>• portfolio with successfully implemented projects for public and private</li> </ul> | <ul style="list-style-type: none"> <li>• uneven income during the year;</li> <li>• lack of structural units</li> </ul> | WEAKNESSES (-) |

|                              | <p>customers, in the framework of international programs funded by foreign donors;</p> <ul style="list-style-type: none"> <li>•highly qualified key personnel;</li> <li>•the latest technologies in the field of construction and sufficient technical equipment for its implementation;</li> <li>•well-developed domestic production infrastructure;</li> <li>•availability of agreements with companies to attract resources if necessary</li> </ul> | <ul style="list-style-type: none"> <li>•high cost of design and construction;</li> <li>•lack of professional and standardized project management under international practices and modern project support;</li> <li>•lack of a clear development strategy, management, and marketing strategy;</li> <li>•a low percentage of won tenders through «Prozorro»;</li> <li>• low quality of the involved labor resources that the company rents</li> </ul> |                    |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| EXTERNAL FACTORS             |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                    |
| <p>OPPORTUNITIES<br/>(+)</p> | <ul style="list-style-type: none"> <li>•expansion of the construction market in other regions;</li> <li>•participation in new international projects;</li> <li>•increasing turnover;</li> <li>•creation of additional units that will strengthen the portfolio and diversify dose sources;</li> <li>•creation of a marketing department;</li> <li>•expanding the company and increasing its qualified staff instead of the hired,</li> </ul>           | <ul style="list-style-type: none"> <li>•high competitions;</li> <li>•competitor's attack;</li> <li>•currency fluctuations;</li> <li>•incapacitated staff in projects or its inefficient use during the period of absence of projects;</li> <li>•pressure for business by supervision institution (Tax service, etc)</li> </ul>                                                                                                                        | <p>THREATS (-)</p> |

|  |                                   |  |  |
|--|-----------------------------------|--|--|
|  | which is sometimes of low quality |  |  |
|--|-----------------------------------|--|--|

*Source: built by the author based on the company's activities and the author's subjective assessment.*

As we may see in the SWOT matrix there are some factors that a company may for to convert weaknesses into strengths and threats created by external factors should be eliminated or mitigated (in such cases where they not be excluded).

Permanent monitoring/prediction of threats should be implemented. The action plan should be developed.

Also, as we may see, the main tasks of the “Da-Stroy” LLC are focused on getting new potential projects, increasing the market, and as result – getting additional profit.

Internal and external factors have a significant impact on Company performance and the external factors of the formation of the company potential include factors of the macro- and microenvironment. To achieve the company's goals, it is necessary to increase the volume of the design and construction projects, taking into account innovative technologies, to provide appropriate means for activities, with the involvement of state support for the construction industry, creation of additional units that will strengthen the portfolio and diversify dose an appropriate marketing service and dealer network, to update technical support and expand construction markets.

External factors of the macroenvironment and their impact on activities are assessed in Table 2.3 using a scale from 1 to 10 where 1 is the worst option and 10 is the best.

Table 2.3 - External factors of the macroenvironment and their impact on activities

| Group of factors | Factors | Reflection | Possible response | Weight coefficient<br>(From 1 to 10) |
|------------------|---------|------------|-------------------|--------------------------------------|
|------------------|---------|------------|-------------------|--------------------------------------|

|                          |                                                        |                                                                             |                                                                                                    |   |
|--------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---|
| Political                | Position of executive government                       | Instability                                                                 | Caution in strategic decision-making.<br>Additional cost to the Client's offer to cover such risks | 5 |
| Economical               | The general condition of the economy                   | The average level of profitability of domestic construction companies.      | Long design and construction process and high cost.                                                | 8 |
|                          | Support the industry by the government                 | Support the development of the industry at the state level in communication | Planning activities taking into account government support and regulation.                         | 8 |
|                          | Pricing system                                         | High production costs, do not always bring the desired profit.              | High production costs, do not always bring the desired profit.                                     | 9 |
| Structural               | The structure of branches of the national economy      | Insufficient infrastructure elements.                                       | Development of mutually beneficial cooperation with partners, suppliers, and customers.            | 6 |
| Scientific and technical | The share of science-intensive buildings               | High level of technology.                                                   | Staff training in this area.                                                                       | 6 |
|                          | Standardization and sanitary and hygienic requirements | Compliance with all parameters of standards and regulations.                | Development of product quality management system.                                                  | 6 |

|                   |                                     |                                    |                                                    |   |
|-------------------|-------------------------------------|------------------------------------|----------------------------------------------------|---|
| Socio-demographic | Available and potential labor force | Sufficient staff.                  | Development of own base of education and training. | 5 |
|                   | Labor costs                         | Enough.                            | Providing social support.                          | 6 |
| International     | The interest of foreign partners    | Will grow due to market expansion. | Implementation of new construction projects.       | 9 |

*Source: built by the author based on the company's activities and the author's subjective assessment.*

### Microeconomic conditions of work performance “Da-Stroy” LLC.

There are hundreds of design and constructions companies in the Kyiv and Kyiv region that can be considered the main competitors. Because the company implemented several projects supported by international donors in the scope of an interagency agreement between Ukraine and the USA, for the analysis, we will consider only such category of competitors applied for such work too.

An analysis of the activities of direct competitors shows that today it is impossible to single out companies on the market that would have significant advantages. In general, it should be noted that the competition policy of “Da-Stroy” LLC has its advantages over other companies, it has established itself as a reliable partner who has already performed several construction projects and also provided consistent service for Clients.

The main competitors are:

- Vavilov Group LLC

Actually, is not a direct design and construction company from the standard point of view but actively applied to a different construction project for implementation. The main specifications of the company are to construct small mobile architectural forms (containers, living modules, barriers, industrial gates, and shutters).

●NKBUD

Full cycle company that may offer different complex solutions in construction, reconstruction repair works, new building, procurement, and installation of equipment.

●Keentegro LLC

Full cycle company specialized in EPIC projects (engendering, procurement, installation, commissioning) that may offer different complex solutions in construction (civil, maritime, industrial, etc.), reconstruction repair works, new building, procurement, and installation of equipment, especially CCTV and security systems. The company has separate design and construction departments.

●CDM Engineering Ukraine

CDM Engineering Ukraine is an engineering and environmental consulting company focused on bringing a value-added service approach consistent with international best practices to the Ukrainian market. The company provides the engineering design, procurement, project management for construction and other engineering solutions as well as key environmental services in Ukraine for international and local clients.

Rating expert assessment of the competitive environment of “Da-Stroy” LLC is made in Table 2.4 using the scale from 1 to 5 where 1 is the worst option and 5 is the best.

Table 2.4 - Assessment of the competitive environment of “Da-Stroy” LLC"

| Factor  | "Da-Stroy"<br>LLC | Vavilov Group<br>LLC | NKBUD LLC | Keentegro<br>LLC | CDM<br>Engineering<br>Ukraine LLC |
|---------|-------------------|----------------------|-----------|------------------|-----------------------------------|
| Price   | 3                 | 4                    | 5         | 5                | 2                                 |
| Quality | 4                 | 2                    | 4         | 4                | 4                                 |

|                              |    |    |    |    |    |
|------------------------------|----|----|----|----|----|
| Experience                   | 5  | 3  | 4  | 5  | 5  |
| Staff                        | 3  | 3  | 4  | 4  | 4  |
| Tools and equipment          | 5  | 5  | 4  | 5  | 5  |
| Financial effectiveness      | 4  | 3  | 4  | 4  | 4  |
| Marketing/<br>advertisement  | 1  | 2  | 2  | 3  | 3  |
| Organizational effectiveness | 3  | 3  | 4  | 4  | 4  |
| Information system           | 3  | 3  | 4  | 3  | 5  |
| Other                        | 3  | 3  | 3  | 3  | 3  |
| Total                        | 34 | 31 | 38 | 40 | 39 |

*Source: built by the author based on the company's activities and the author's subjective assessment.*

According to the table above we may see that “Da-Stroy” LLC has some serious competitors for consideration and some factors for improvement. However, I think that the company is still a success because of previously implemented projects that made the credential, and clients’ recommendations and show not only willing to perform but the capabilities too.

To assess the financial condition of a company, we will consider the main general indicators that determine its size, the structure of prime cost, and total costs, as well as provide a calculation of financial stability (Table 2.5).

The information about 2021 was not presented for analysis by “Da-Stroy” LLC which is why consider the last three previous years (2018-2020).

Table 2.5 - The financial condition of the “Da-Stroy” LLC during the 2018-2020 years

| Indicators, UAH<br>thousand | Years   |          |          | 2020/2018, % |
|-----------------------------|---------|----------|----------|--------------|
|                             | 2018    | 2019     | 2020     |              |
| Availability of fixed asset | 842     | 761,9    | 675,5    | 80,2         |
| Current asset               | 5279,8  | 6 253,6  | 11 605,8 | 219,8        |
| Revenue                     | 17812.7 | 36 699,8 | 41 250,5 | 231,5        |
| Cost price                  | 17713.4 | 36 637,7 | 41 134,7 | 232,2        |
| Profit                      | 99,3    | 62,1     | 115,8    | 116,6        |
| Profitability level, %      | 0,56    | 0,16     | 0,28     | 50           |

*Source: built by the author based on the company's activities and submitted Balance sheets for each year.*

The profitability level was decreased in 2020 in comparison to 2018 but at the same time, it is bigger than in 2019. The result is extremely low and less than 1% which may be explained by decreasing profitability because of the global tendency in the construction industry during the Covid-19 pandemic period. The low meaning of the indicators is signaling the current issues in the financial management applied by management during the previous 3 years.

The trends analysis in account receivables and payables are shown in Table 2.6

Table 2.6 - Account Receivables/Payables and Short-term bank credits

| Indicators, UAH<br>thousand                    | Years  |         |          | 2020/2018, % |
|------------------------------------------------|--------|---------|----------|--------------|
|                                                | 2018   | 2019    | 2020     |              |
| Account payable                                | 3848,4 | 4 614,2 | 6 766,1  | 175.8        |
| Account receivable<br>(total, including goods, | 4133,6 | 5 056,5 | 10 311,4 | 249.4        |

|                                             |   |       |         |         |
|---------------------------------------------|---|-------|---------|---------|
| works, services,<br>insurance, salary, etc) |   |       |         |         |
| Short-term bank credits                     | - | 118,4 | 1 724,8 | *1456.7 |

\*2020/2019 such as in 2018 Company dint take any Short-term bank credits.

*Source: built by the author based on the company's activities and submitted Balance sheets for each year.*

We may see that the account payable results are increasing every year which may be explained by financial issues, the absence of growing financial results together with increasing short-term bank credits (the long-term bank credits were not indicated in the financial documents as a balance sheet).

At the same time, account receivable (the debt before the company by counterparties) shows an increasing tendency too.

The size of the account receivable depends on a lot of factors such as the volume of sales, the terms of cooperation with buyers (prepayment, subsequent payment), grace period, payment discipline of buyers, organization of control over the state of accounts receivable and claims work at the enterprise.

A sharp increase in accounts receivable and its share in current assets may indicate an unreasonable privatization credit policy towards buyers or an increase in sales, or the lack of solvency and bankruptcy of buyers.

The reasons for the occurrence of accounts receivable items can be:

- reckless credit policy of the enterprise about buyers;
- insolvency or coolness of bans of some consumers;
- too high growth rates of sales volume;
- difficulties in selling products.

Because it is a construction industry, all of the above reasons are unlikely but very often payments are postponed or deleted when some activities or results were not accepted by the Client (rework, low quality, penalties, termination, etc) a properly confirmed by the acceptance act.

The net income tendency and the cost of goods sold are indicated in Table 2.7

Table 2.7 - Net income from sales of products and the cost of goods sold analysis

| Indicators, UAH thousand                                   | Years   |          |          | 2020/2018, % |
|------------------------------------------------------------|---------|----------|----------|--------------|
|                                                            | 2018    | 2019     | 2020     |              |
| Net income from sales of products (goods, works, services) | 17504.8 | 20 199,8 | 24 296,2 | 138,8        |
| Cost of goods sold (goods, works, services)                | 7186.3  | 10 072,0 | 22 022,0 | 306,4        |

*Source: built by the author based on the company's activities and submitted Balance sheets for each year.*

Both such indicators are growing during the period of assessment that shows a trend of increasing volumes (number of projects or their complexity, provided goods, works, and /or services).

The financial strength analysis of the company's performance is assessed in Table 2.8.

Table 2.8 - Financial strength analysis

| Indicators, UAH thousand           | Years |       |       |
|------------------------------------|-------|-------|-------|
|                                    | 2018  | 2019  | 2020  |
| Equity                             | 550,0 | 550,0 | 550,0 |
| Retained earnings (uncovered loss) | 596.2 | 647,1 | 744,4 |

|                                                                                                                                |        |         |          |
|--------------------------------------------------------------------------------------------------------------------------------|--------|---------|----------|
| Total (shareholders equity)                                                                                                    | 1146.2 | 1 197,1 | 1 294,4  |
| Balance                                                                                                                        | 5279.8 | 6 253,6 | 11 605,8 |
| Raised funds                                                                                                                   | 0      | 118,4   | 1 724,8  |
| Long-term loan capital,                                                                                                        | -      | -       | -        |
| Short-term loan capital                                                                                                        | -      | 118,4   | 1 724,8  |
| Current assets                                                                                                                 | 5279.8 | 6 253,6 | 11 605,8 |
| Net working capital (Current asset- Short-term loan capital)                                                                   | 5279.8 | 6135.2  | 9881     |
| Financial independence ratio (shareholders' equity / balance)                                                                  | 0.22   | 0.19    | 0.11     |
| Funding ratio (equity to debt ratio) (Stakeholders' equity/ Raised funds)                                                      | -      | 10.11   | 0.75     |
| Financial leverage ratio (debt-to-equity ratio) (Raised funds (Long-term loan capital +Short term loan)/ Stakeholders' equity) | -      | 0.1     | 1.33     |
| Equity working capital ratio (Net working capital / current asset)                                                             | 1      | 0.98    | 0.85     |

*Source: built by the author based on the company's activities and submitted Balance sheets for each year.*

The financial independence ratio characterizes the ratio of equity to the total amount of capital (assets) of the organization.

The ratio shows how independent the organization is from creditors. The smaller the value of the ratio, the more the organization depends on borrowed funding sources, and the less stable its financial position.

The generally accepted normal value of the autonomy coefficient (ratio) in Ukrainian practice is 0.5 or more (optimum 0.6-0.7).

In our case, it is 0.22 in 2018 and 0.11 in 2020 which shows that is below the generally accepted norm of 0.5 and shows the company's dependence on external funding sources even though the company doesn't have any long-term.

When the value of the Funding ratio is less than one (most of the company's assets are formed from borrowed funds), this may indicate the risk of insolvency and make it difficult to obtain credit. The funding ratio in 2020 is less than 1.

We can see that this is the inverse to the Funding ratio indicator. The financial leverage ratio shows the share of the company's equity in assets. The higher this indicator, the greater the entrepreneurial risk of the organization. The larger the share of borrowed funds, the less the company will receive profit, since part of it will go to repay loans and pay interest. The result of 1.33 in 2020 reflects increasing the borrowed capital in comparison to 2019 which was equal to 0.1.

The Equity working capital ratio (an indicator of the provision of current assets with own funds) belongs to the group of indicators of financial stability and is an indicator of the company's ability to finance working capital at the expense of its working capital. The ratio is calculated as the ratio of own current assets to current assets. The value of the indicator shows the share of own working capital in the amount of the company's current assets.

The Equity working capital ratio is less than 1 in 2020 which indicates that the enterprise is not sufficiently provided with working capital.

### **2.3 Analysis of the effectiveness of project management “Da-Stroy” LLC**

In the beginning, we should consider company directions of work in each particular case because the work can be considered in the next way:

- Design;
- Construction;
- Design with further construction (turnkey projects);
- Others (supplementary services such as procurement, installation, consulting, project management, etc.);

Despite the ability to carry out design work, the main focus of the work for the company is “turnkey solution” projects, that is, the design followed by construction.

Design activities are based not only on design experience, and modern technologies but also on an understanding of all the nuances of the supplying construction process. The company can offer all complex stages of project implementation from a feasibility study to a detailed design. Design work is the basis for any work on the new building, commissioning, capital repair, or reconstruction of buildings. In this case, the preparation of the necessary documentation for the design is organized by the customer based on signed contracts with the general designer. The process of design and preparation of documentation itself includes several stages, including the preparation of the project, approval, and protection of the project in the bodies of state expertise, the development of working documents for the project, and subsequent supervision.

The design process begins when the client’s technical task is created (sometimes it is also called a statement of work). The statement of work includes a part called the scope of work. The scope of work specifies the specific procedure to accomplish those goals, whereas the statement of work is a very comprehensive, legal document that describes the objectives and goals of a project.

The type of project documents necessary for the Client depends on the technical task and is regulated by law, for example, for the technical or economical assessment of investment, the Client may ask the Designer to consider a project called «technical and economical assessment» that gives the Client possibility to understand the further investment cost, possible technical solutions, and timeline duration. Then, this project may be used for further stages of design development if the Client decides to implement it.

In case of detection of errors in calculations, deviations from the approved norms, standards, and requirements can lead to serious errors in the future, the company at each stage of project development carries out a detailed analysis and calculations, then verified during the state expertise.

Usually, all implemented projects and all proposed solutions meet modern safety requirements and requirements for environmental protection and ecology.

The company develops design documentation under the requirements of technical regulations, requirements for the content of the developed design documentation, and requirements for the results of engineering solutions.

The company's portfolio includes projects of different complexity from refurbishment or fit-out works to new modern facilities that are why the quality of the design documentation has a crucial impact on the construction and commissioning of the facility, and its safety for human health, and the environment.

The company also offers services for performing construction work on its own or exercising control over the work of the contractor if the project is carried out by other organizations. In these cases, the company guarantees compliance with the construction deadlines and budget, the reliability, and the quality of the original structures. At the stage of the construction process, the largest amount of work and resource costs are carried out, which includes preparatory work and construction.

Construction works include all stages of implementation with the further hand-over of the completed work.

The company offers the management service of project implementation projects on an EPIC (M) basis plus management:

- E - Engineering (design/assessment);
- P – Procurement;
- I - Installation;
- C – Construction/Commissioning;
- M - Management.

That means that Company coordinates all specific work and takes full responsibility for the final result. Such responsibility includes all possible risks (technical and financial) and may be reflected in the earlier financial result of performance.

The key advantages of the interaction of the “Da-Stroy” LLC according to the earlier described scheme are the reduction of the implementation time of the project due to the parallel execution of key processes (design, procurement, construction), as well as the reduction of the project cost due to the rational use of the budget through the tender selection of subcontractors and suppliers.

In the general meaning of terms, construction includes some or all functions of EPIC (M) activities:

- Engineering and detailed design;
- Procurement and supply management: market research, delivery of suppliers, contracts, purchase of property and materials, logistics, etc.;
- Installation – is a process of setting the tools, equipment, and objects as per design documentation;

- Construction is the implementation phase of the building. Commissioning is part of construction that is usually considered the latest stages of project implementation.

If the Company needs external resources or subcontracts, the selection process is focused on those who are ready to formulate the most possible value according to the granted budget and timeframe.

Because “Da-Stroy” LLC offers “turnkey” projects, the next ones were done on an EPIC (M) basis as projects in the scope of the International Partnership funds (ICITAP program) [32]:

- Construction and repair work of the educational building of the Academy of Patrol Police of the National Police of Ukraine;
- Construction and repair work of the dormitory building of the Kryvyi Rih Academy of Patrol Police of the National Police of Ukraine;
- Reconstruction of Holosiiv district Police department Kyiv;
- Construction and repair work of the main office of the Counter Narcotics Department of the National Police of Ukraine.

To assess the management process of the above projects in a company, the microenvironment should be considered based on a subjective assessment of determining its place and role in the construction industry, making forecasts of the prospects for its further existence and development. Such an assessment is proposed to be carried out on a 10-point scale in terms of completed projects and is described in table 2.9. The result is presented in the table below:

Table 2.9 - The subjective assessment of microenvironment “Da-Stroy” LLC

| Parameters                               | Rating (from 1 to 10) |
|------------------------------------------|-----------------------|
| The possible growth rate of the industry | 10                    |

|                                                  |   |
|--------------------------------------------------|---|
| Ease of entry of new firms into the industry     | 7 |
| The intensity of competition in the industry     | 6 |
| The level of influence of customers              | 9 |
| The level of manufacturability in the industry   | 7 |
| Indicator of innovation activity in the industry | 7 |

*Source: built by the author based on the company's activities and the author's subjective assessment.*

As we may see there is a moderately high level of competition and a very high level of client influence that directly impacts demand in the market and finally the price. New and modern technologies and methods may reduce the cost of construction to keep the price of offer more competitive but the industry entry threshold is still high (however that is more for construction and less for design).

Also, the internal processes were considered and assessed in Table 2.10.

Table 2.10 - The internal processes assessment “Da-Stroy” LLC

| Process            | Strengths                                                                                   | Weakness                                                                                                                                            |
|--------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Operational        | The process of building is at a good level that meets the local and international standards | Lack of information for effective operational management control.<br>The “Ad-hook” approach is implemented<br>Department structure is required      |
| Management         | High level of experience of key managers.                                                   | No clear strategy for potential growth                                                                                                              |
| Project management | Projects generate revenue                                                                   | Some “chaotic” approaches in project control: time, cost, duration.<br>Absence of project management plan.                                          |
| HR                 | The key personnel are qualified enough with good past performance experience                | Sometimes contractors (outsourc) staff has low qualifications and not enough experience.<br>Some additional staff is required for a senior position |

|           |                                                                                              |                                                                                     |
|-----------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Marketing | The monitoring of competitors is performed permanently.<br>Benchmarking approach is applied. | The marketing strategy is not enough developed.<br>The qualified marketer is absent |
| Quality   | Mid-level quality is almost usually meet                                                     | A quality control management system is not implemented                              |

*Source: built by the author based on the company's activities and the author's subjective assessment.*

As it may seem there are enough potential processes for implementation and correction. The company should focus on creating and keeping the positive image of a good service provider that belongs to the Marketing department task or individual marketer who may manage that. Some key tasks are described below that may be considered:

- Marketing system creation: creating a marketing plan, creating the internet resources with a user-friendly interface and updated information (there is a website of “Da-Stroy” LLC: <https://da-stroy.com.ua> but it doesn't reflect the full, useful, and updated information), social network pages (where company's success should be published), consider necessary actions for the brand reinforcement and brand recognition;
- Infrastructure system creation: development of infrastructure, improvement of construction sites, social responsibility approach implementation;
- Partnership: collaboration with different companies for additional value creation.

Analyzing the macro and micro factors that affect the potential of the company, one can see both the strengths and the weaknesses of the company under study in comparison with other firms. Despite the existing problems, the company occupies a good position in the domestic market and seeks to expand its activities, taking part in potential projects and applying innovations in project activities.

For the economic efficiency assessment of projects implemented by the company, the competitive advantages should be mentioned, since they were formed during a long

period and show the qualitative aspect of the company's performance as a reliable and reputable partner that includes the next philosophy:

- Any customer is key for the company, since all orders are relevant for the company, both from small and medium-sized businesses to large companies. The company cooperates with all customers under the principles of a customer-oriented approach and personal service;
- The company tries to offer the best possible cost for service and is flexible for any reasonable changes required for project success;
- The company tries to perform the work as per the earlier agreed time and even faster where that is possible;
- Transparency is an important principle for the company and the Client may be involved in any discussions and questions during the work execution process;
- Safety first approach is applied in all construction solutions;
- The quality of the final result should meet the Client's vision and criteria;
- Possible option of the “turnkey” implementation project.

## **CHAPTER 3**

### **IMPROVEMENT OF THE PROJECT MANAGEMENT MECHANIZM AND ITS EFFECTIVE CONTROL ON THE EXAMPLE OF THE COMPANY “DA-STROY” LLC**

#### **3.1 Ways and approaches to improving the project management system of “Da-Stroy” LLC**

When considering areas for improving the mechanism of project design and construction activities we should focus on assessing and improving the overall management approach, revealing its main components, as well as showing the modern way to the management on one of the project examples. In this aspect, it is considering the building design construction project, effective management, and project progress monitoring using modern tools and technic (BIM technology).

As was mentioned in the previous chapters, “Da-Stroy” LLC doesn’t have a Project Management Plan and usually applies the “From time to time” approach in different situations. The result of such an approach sometimes is “chaotic” and unpredictable creating different risks and extra budget expenses such as risk elimination.

The best option for today of classical project management is described in PMBOK Seventh Edition and The Standard [20] and maybe applied in almost all industries, fields, and different types of projects from IT to construction.

The importance of the project management plan is clear because it boosts performance, safe money, improves team communication, makes it easy to track project goals, etc. [32], and because of absence, it should be mandatorily implemented at the enterprise.

The theoretical approach to possible project management changes for “Da-Stroy” LLC will be given according to the PMI (Project Management Institute) recommendation which is considered a “gold standard” of project management.

To increase the quantity of further successful projects and make them more predictable from a planning/implementation point of view the Project Management Plan should be developed as a standard template that covers all major areas of projects and all project/team members should follow it. The Project Management Plan should be adjusted before the beginning of each new project that the company will be implementing.

The classical template (basis) of the Project Management Plan will include information but is not limited:

- Introduction.
  - Purpose of the Project Management Plan.
  - Project Characterization.
- Executive Summary of Project Charter.
- PROJECT CHARTER.
- Assumptions/Constraints/Risks.
  - Assumptions.
  - Constraints.
  - Risks.
- Project Scope.
  - Requirements Management.
  - Scope Management.
  - Work Breakdown Structure.
- Time/Schedule Management.
  - Plan Schedule Management.
  - Milestones.

- Estimate Activities Sequence, Resource, Duration, and Dependences.
- Project Schedule.
- Control Schedule.
- Cost/Budget Management.
- Quality Management.
- Quality Requirements/Standards.
- Quality Assurance.
- Quality Control.
- Risk Management.
- Plan Risk Management.
- Identify Risks.
- Qualitative Risk Analysis.
- Quantitative Risk Analysis.
- Risk Response.
- Risks Control.
- Procurement Management.
- Procurement Management process.
- Plan Procurement Management.
- Conduct Procurement.
- Control Procurement.
- Close Procurement.
- Communication Management.
- Plan Communication Management.
- Manage Communication.
- Control Communication.
- Human Resource Management.
- Plan HR Management.
- Develop Project Team.

- Manage Project Team.
- Stakeholder Management.
  - Identify Stakeholder.
  - Plan Stakeholder Management.
  - Manage Stakeholder Engagement.
  - Control Stakeholder Engagement.
- HSE Management.
- Overall Project Management Approach.
  - Procedures.
  - Documentation Management System.
  - Master Document Register (MDR).
  - Project Life Cycle.
  - Organizational Structure.
  - Construction Team Meetings.
  - Lessons learned Practice.
- Progress Reporting.
  - Frequency of Reports.
  - Daily Reports.
  - Weekly Reports.

At the first glance, the Project Management Plan is very a massive document that requires a lot of information and knowledge on how to do it properly. However, once Company creates it (The Team members may be involved in the development of the Project Management Plan under the instruction of the experienced Project Managers, Project Sponsor, Senior members of the company or hire a special consulting service to do the internal process audit and based on the collected information will create such document for implementation) it will be easily adjusted for all new projects adding or deleting necessary/unnecessary information from it. The approach of such document creation should

be next: for a big and complex project, the Project Management Plan should be developed in more detail and described as maximum information as possible. For small ones, it may cover only the main aspects of project implementation. Sometimes, the proposed index may be created according to the company's internal procedures and specifications. However, in the context of the "Da-Stroy" LLC process organization, the proposed index should be fully taken as a basis.

Another important aspect that is almost always ignored by most companies is a "Lessons learned" practice or approach. The "Da-Stroy" LLC should implement it also (as it is advised for consideration in the Project Management Plan).

The purpose of the lessons learned document for the construction project is to collect the project's lessons learned in a formal document for use by other project managers on similar future projects. This document may be used as part of new project planning for similar projects to determine what problems occurred and how those problems were handled and may be avoided in the future. Additionally, this document details what went well with the project and why so that other project managers may capitalize on these actions. Project managers may also use this document to determine who the project team members were to solicit feedback for planning their projects in the future. This document will be formally communicated with the organization and will become a part of the organizational assets and archives.

The contents of the lessons learned document should also be determined ahead of time. They should be detailed enough to provide value for future use and the contents should be consistent with other lessons learned documents or organizational standards. The categorization of lessons learned is another consideration.

It is important that once lessons learned are collected and documented that the organization approves and implement any process improvements identified. Organizations need to strive for continuous improvement and this portion of the lessons learned process is

an integral step. This portion of the lessons learned template gives an example of recommended process improvements.

In the further stages of company development and growth, the internal procedures should be created (or adjusted if they were created before) as per the company lessons learned information and implemented practices. This will help to form (reinforce) the Company's internal culture of the project implementation and eliminate or minimize the wrong ways of projects performance.

Another part of implementation for “Da-Stroy” LLC should be considered the Building Information Modelling (BIM) and an economical assessment of this approach will be assessed in the next chapter.

Building Information Modeling (BIM) is the foundation of digital transformation in architecture, engineering, and construction and is a digital representation of the physical and functional characteristics of an object that creates a shared information resource of the object and forms a reliable basis for decision making throughout its life cycle: from early concepts to disposal [34].

The Building Information Modeling may be used for initiation of the project, design, construction, and control of each phase implementation. BIM is one of the most promising approaches that allow the development of one or more accurate virtual, digitally built models of a construction site to support the design, construction, manufacturing, and purchasing activities through which the construction itself is carried out. This technology is wildly implemented in many highly developed countries where there is even legal requirement for use because BIM in construction provides substantial benefits to general contractors, subcontractors, owners, and clients. Beyond the simple advantage of being able to visualize the intent of 2D plans, some of the benefits of BIM in construction include [35], [36], [37]:

- Better collaboration and communication;

- Model-based cost estimation;
- Project visualization;
- Clash detection;
- Reduced cost;
- Mitigated risk;
- Improved scheduling;
- Increased productivity;
- Easier and more accurate prefab;
- Safer sites;
- Smoother handovers.

The main idea of advising BIM technology for the implementation of “Da-Stroy” LLC is a modern approach of doing business in the construction sphere that significantly reduces the possibility of mistakes (reworks) at all levels of project development and as result increases the Client’s satisfaction. Actually, in Ukraine still, not many companies use such technology and that may give “Da-Stroy” LLC comparative advantages too in comparison to a traditional approach.

### **3.2 Evaluation of the effectiveness of the proposed solutions and the cost of their implementation by “Da-Stroy” LLC**

The evaluation of the effectiveness of the Building Information Modeling approach is better to consider in the design phase of any construction project implementation because it will allow getting a more accurate assessment because of next reasons:

- Any construction project requires proper design documentation;
- The cost of construction may be higher than design development even 5-10 times (and the effect of the BIM implementation while considering design plus construction maybe not be such outstanding as design only);
- Construction activities may include the installation of very costly equipment that is not required using BIM technology when it is highly recommended for general project management (and the effect of the BIM implementation while considering design plus construction maybe not be such outstanding as design only);

For the design development project that “Da-Stroy” LLC may implement, the next initial data is required for assessment:

1) Determining the current costs of project work.

Cost items that require mandatory estimates include fixed assets, material costs (consumables), wages, and taxes.

The depreciation of fixed assets (depreciated value) is calculated in table 3.1. Use the straight-line method (The straight-line method of depreciation provides for a uniform distribution of depreciable cost over the useful life of an item of property, plant, and equipment.

Depreciable cost is the original or revalued cost of an item less its salvage value [41].

Depreciation rate (%) = annual amount of depreciation calculations (UAH)

Table 3.1 - Annual depreciation assessment

|                                         |                                                  |
|-----------------------------------------|--------------------------------------------------|
| Buildings and structures, UAH           | $5\,000\,000 \text{ UAH} \times 10\% = 500\,000$ |
| Equipment, UAH                          | $1\,000\,000 \text{ UAH} \times 20\% = 200\,000$ |
| Production and household equipment, UAH | $100\,000 \text{ UAH} \times 10\% = 10\,000$     |
| Annual depreciation, UAH                | 710 000                                          |

*Source: built by the author for assessment*

Because not all staff is permanently involved in such design activities and the company may have several similar projects or activities, we use the load coefficient of 50% of the yearly time for depreciation dedicated for this project:  $710\,000 \text{ UAH} \times 50\% = 355\,000 \text{ UAH}$ .

Required personnel (Project Team) is mentioned in Table 3.2

Table 3.2 - A basic Project Team designated for the design project

| Position                                                                    | Quantity | Salary,<br>UAH (per month) | Salary,<br>UAH (per year) |
|-----------------------------------------------------------------------------|----------|----------------------------|---------------------------|
| Company Director                                                            | 1        | 30000                      | 360 000                   |
| Secretary                                                                   | 1        | 10000                      | 120 000                   |
| Accountant                                                                  | 1        | 17000                      | 204 000                   |
| Project Manager                                                             | 1        | 20000                      | 240 000                   |
| Project Chief Engineer                                                      | 1        | 18000                      | 216 000                   |
| Architect Engineer                                                          | 3        | Average 16000              | 576 000                   |
| Engineers of different<br>specialization and categories<br>and constructors | 15       | Average 13000              | 2 340 000                 |
| Cost estimator                                                              | 3        | Average 12000              | 432 000                   |
| Others                                                                      | 4        | Average 8000               | 384 000                   |
| Labor costs                                                                 |          |                            | 4 872 000                 |

*Source: built by the author according to the industry rate.*

Because not all staff is permanently involved in such design activities and the company may have several similar projects, we use the load coefficient of 50% of yearly time dedicated to this project. The fixed operating costs assessment for one project is calculated in Table 3.3

Table 3.3 - Fixed operating costs for one project

|                                                         |                                                              |
|---------------------------------------------------------|--------------------------------------------------------------|
| 50% of yearly time dedicated to this project, UAH       | $4\,872\,000 \cdot 0.5 = 2\,436\,000$                        |
| Social tax (22% of Labor costs), UAH                    | 535 920                                                      |
| Material and other costs (including utility bills), UAH | 200 000                                                      |
| Depreciation, UAH                                       | 355 000                                                      |
| Total fixed operating costs for one project, UAH        | $2\,436\,000 + 535\,920 + 200\,000 + 355\,000 = 3\,526\,920$ |

*Source: built by the author for assessment.*

## 2) Definition of cash flow:

Let's consider the project of construction 10 floors building consisting of 2 sections and a general square of about 10000 m<sup>2</sup>. The design duration is one year (full cycle from initiating to final assessment with approval by the expert company). The cost of design work may be assessed in different ways and approaches analogs, a percentage from expected construction works (usually it is about 5-10%, depending on the complexity of the project). Also, it may be determined using aggregated indicators or by reference book of basic prices for design work for construction with some coefficients such as risk, uncertainties, etc.

In Ukraine, the approach of cost assessment is given in the national DSTU standard [39] which includes rules and principles of cost determining

This standard is mandatory for the assessment and definition of the cost of construction of facilities under construction at the expense of the budget funds, funds of state

and municipal enterprises, institutions, and organizations, as well as loans granted under state guarantees.

However, very often the price taken for assessment doesn't reflect the real market cost of work even with different coefficients and the company may adjust this calculation using different tricks or "hide" expenses that increase the cost.

According to the Ministry for Communities and Territories Development of Ukraine, the cost of construction 1m<sup>2</sup> in Kyiv [38] is 15 465 UAH /per square meter in 2020. Such cost includes 5-7% (till 10%) design cost that usually is considered for design development from the lump sum [40].

This will be considered for assessment of 5% of 15 465 UAH = 774 UAH per square meter:

10 000 m<sup>2</sup>\*774 UAH for 1m<sup>2</sup>=7 740 000 UAH – the cost of design development with VAT.

3)The traditional way of profit assessment for one project is calculated in Table 3.4.

Table 3.4 - Traditional way of profit assessment for one project

|                                                                     |           |
|---------------------------------------------------------------------|-----------|
| Sales revenue, UAH                                                  | 7 740 000 |
| Including VAT (20%), UAH                                            | 1 548 000 |
| Total fixed operating costs for one project (calculated above), UAH | 3 526 920 |
| Approval expenditure (about 7% of the project cost), UAH            | 541 800   |
| Profit, UAH                                                         | 2 123 280 |
| Profit tax (18%+1.5% military tax), UAH                             | 414 040   |
| Net profit, UAH                                                     | 1 709 240 |

*Source: built by the author for assessment.*

Traditional way of profit and loss assessment for two projects that may be implemented by the company with the same resources during one calendar year (six months plus six months): Net profit:  $1\,709\,240 \cdot 2 = 3\,418\,480$  UAH;

4)The volume of investment for technology implementation [42], [43], [44]:

Different software solutions may be considered for usages such as AutoCAD, Revit, SketchUp, Navisworks, ArchiCAD, AutoCAD MEP, Aurora, AutoCAD Arch, and others.

Intelligent, computer model-based tools allow you to work with high quality, always have at hand the necessary information, and make sound design decisions. The software products included in the complex provide engineers with real advantages at all stages of the design and operation of projects.

The cost of product/license deepens on some factors such as:

- Requirements for design (industry);
- Quantity of users;
- License type and timeline duration (one year, two years, etc.);

For the assessment, we consider the AUTODESK BIM software that may be considered as one of the leading in the design industry.

As project developers, we identified 20 engineers/architects/project managers who can be considered potential users of the software.

Because not all of them require permanent excess for the design software for BIM modeling (can use a simple AutoCAD), for the assessment we may consider CLOUD solutions that have some advantages in comparison to the stationary installed one:

- the different users may use such software, when necessary;

- the software may be used anywhere and anytime from different devices (not only stationary installed PC);
- the database is always available.

The cost of advised software is taken from the Internet and is approximate:

- BIM 360 Design - 15 Subscription CLOUD Commercial New Annual Subscription – 254 169UAH

Autodesk BIM 360 is a unified platform that connects your project teams and data in real-time, from engineering and design to construction, decision making, and delivery.

And some stationary solutions:

- Revit 2022 Commercial New Single-user ELD Annual Subscription (3 stationer users) 4 users \*50 904 UAH =203 616UAH;

Autodesk Revit includes features for architectural design, mechanical, electrical and plumbing, structural design, and construction and is available as part of the Autodesk Architecture, Engineering & Construction Collection, providing a complete solution for the entire team. In one Revit subscription, you will find tools to help you with MEP, architecture, and structural design;

- AUTODESK ARCHITECTURE ENGINEERING CONSTRUCTION COLLECTION (4 stationer users) 4 users \*62 152 UAH =248 608 UAH.

The training program may payable or free of cost and be organized for groups and distance that is cheaper than offline.

The payable opinion is shorter in time duration and usually provides after course support service that is useful for the Company transition period.

The medium cost of 1 person (5 days training, 40 hours, online) is 5000 UAH,

Then,  $20 \times 5000 = 100000$  UAH,

Cost of investment consists of software procurement and training:

$254\,169 + 203\,616 + 248\,608 + 100\,000 = 806\,393$  UAH.

5) Profit and lost assessment after implementation of the solution:

During the transition couple of months, the performance may be lower than before launching the process.

Because the designers of “Da-Stroy” LLC are professional users of standard software developed by Autodesk Corporation such as AutoCAD and ArchiCAD, the maximum transition period is three months for consideration decreasing of performance for 30-50% (will use 50% for assessment) and then increase of performance by 30-50% during the next 3 months (use 50% for assessment and it will be the same as before implementing BIM approach) and 25 % since the second 3 months with additional 25 % considered from 9<sup>th</sup> month.

For calculation, we may assume the performance increase/decrease estimation mentioned in Table 3.5

Table 3.5 - Performance estimation during the transition period

|          |            |                                                                                                                                               |
|----------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Period 1 | 1-3 months | Decreasing performance time for 50% in time scale (from original performance 100% before BIM method, time increase for 50% and is 4.5 months) |
| Period 2 | 4-6 months | Increasing performance time for a 50%-time scale (reach the original performance 100% with the BIM method, time is still 3 months);           |

|          |             |                                                                                                                                                                                                             |
|----------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Period 3 | 7-9 months  | Increasing performance time for 25%-time scale in comparison to the period 2 (reach the performance 125% with BIM method in comparison to original, time of period decreases from 3 months to 2.25 months); |
| Period 4 | 9-12 months | Increasing performance time for an additional 25 %-time scale in comparison to period 3 (time of period decreases from 2.25 months to 1.69 months).                                                         |

*Source: built by the author for assessment.*

Time Performance index of growing period (7-12)  $= (2.25 + 1.69) / 6 = 0.66$  or 66% of the standard necessary time without BIM.

$1 - 0.66 = 0.34$  or 34% increased performance.

For assessment of the profit and losses, we may assume that the implementation of the project started at the beginning of the fiscal year with an original duration of 6 months and the same implementation of the BIM method.

Because decreasing performance at the first 3 months of standard project implementation will increase the design time by 50% will be equal to 4.5 months, then the next 3 planned months of the original schedule will be performed within 3 months because as per condition the performance will be the same as before BIM implementation but using BIM method.

Total project duration may be calculated as: 4.5 months + 3 months = 7.5 months for the first project.

Then, if a similar project may be implemented after the first one with the same design task, it will take 2.25 months (instead of 3) + 1.69 months (instead of 2.25 in period 3) = 3.94 months instead of standard 6 which is an excellent result.

Expected income and expenses for 1 year with BIM may be calculated as a result of the performance of 2 similar projects during the first year (7.5 months + 3.94 months=11.44 months), that are almost the same as without BIM minus cost of investment that decrease profit.

The labor cost and the fixed operating costs are necessary for the design development with BIM after reducing time of performance for 34% (Table 3.6).

Table 3.6 - Labor cost and the fixed operating costs assessment for the design development with BIM since the second year

|                                                  |                                    |
|--------------------------------------------------|------------------------------------|
| The amount of labor cost at one project, UAH     | $2\,436\,000 * 0.66 = 1\,607\,760$ |
| Total fixed operating costs for one project, UAH | $3\,526\,920 * 0.66 = 2\,327\,767$ |

*Source: built by the author for assessment*

\*Where 3 526 920 UAH is the operating development cost of one project with the traditional method, Performance index 0.66 or 66% that was calculated before.

For the profit and loss assessment for two projects that may be implemented by the company with the same resources during one calendar year:

$$2\,327\,767 * 2 = 4\,655\,534 \text{ UAH};$$

Revenues, Costs, and Net profit assessment of one project cost with BIM for second year in Table 3.7.

Table 3.7 - Revenues, Costs, and Net profit assessment of one project with BIM during the second year

|                                                                              |           |
|------------------------------------------------------------------------------|-----------|
| Sales revenue, UAH                                                           | 7 740 000 |
| Including VAT (20%), UAH                                                     | 1 548 000 |
| Total fixed operating costs for one project with BIM (calculated above), UAH | 2 327 767 |

|                                                                           |           |
|---------------------------------------------------------------------------|-----------|
| Approval expenditure for one project (about 7% of the project cost), UAH  | 541 800   |
| Cost of investment consists of software procurement without training, UAH | 706 393   |
| Profit, UAH                                                               | 2 616 040 |
| Profit tax, (18%+1.5% military tax), UAH                                  | 510 128   |
| Net profit, UAH                                                           | 2 105 912 |

*Source: built by the author for assessment*

For two similar projects implemented during the second year  $2 \times 2\,105\,912 + 706\,393 = 4\,918\,217$  UAH\*.

\*706 393 UAH is the cost of investment for the new software (prolonging the license) without training and this amount was accumulated/considered in the assessment of one project with BIM and can be considered as a one-time payment for one year, and that is why the two projects assessments should not be considered as investment one more time because as per condition, the implementation of the second project is considered during the year of the first investment (to avoid double investment that is considered in the sum of one project Net profit, for two project assessment, 706 393 UAH should be added to increase the profit). 100 000 UAH is a training that was considered in the cost of investment during the first year only.

The first-year profit with and without BIM are almost the same minus investment of the cost for software and trainings. But since the second year if company decides to do only two projects, the difference would be 3 418 480 UAH vs the Profit with BIM is 4 918 217 UAH. But using BIM gives potential to perform the third similar project during the year. Even with 706 393 UAH of investment necessary for prolonging the software, the Company may get an additional profit during the second year of  $4\,918\,217 - 3\,418\,480$  UAH = 1 499 737 UAH.

Implementing the BIM method, beginning in the second year, allows the implementation of 3 similar projects instead of two with similar resources: 3.94 months instead of the standard 6 months for one project

The second year of using BIM methods will require the same amount of investment for the license update (without training) but profit will be expected next.

Revenue and Net profit of 3 project cost with BIM during one year is calculated in Table 3.8

Table 3.8 - Revenue and Net profit assessment of three similar projects with BIM

|                                           |                                                            |
|-------------------------------------------|------------------------------------------------------------|
| Sales revenue for 3 similar projects, UAH | $3 * 7\,740\,000 \text{ UAH} = 23\,220\,000$               |
| Net profit for 3 similar projects*, UAH   | $3 * 2\,105\,912 \text{ UAH} + 2 * 706\,393 = 7\,730\,522$ |

*Source: built by the author for assessment*

\* Net profit for 1 similar project with BIM is calculated above (together with all expenditures).

\* 706 393 UAH is the cost of investment for the new software without training and this amount was accumulated/considered in the assessment cost of one project with BIM and can be considered as a one-time payment for one year, and that is why the three projects assessments should not be considered as an investment two more times because as per condition, the implementation of the second and third projects are considered during the year of the first investment (to avoid triple investment that is considered in the sum of one project Net profit, for three project assessment, 706 393 UAH should be added two times to increase the profit) because it was deducted previously in assessment of for cost of one project

As we could see in the paragraph above, the investment in the BIM method can reduce the cost during the second year in comparison to the method without BIM (traditional design development). The standard payback period for capital investments in automation

and computer software is 2-3 years where Net Income and Net Present Value (NPV) may be calculated:

○Net Profit during 2 years (the sum of Net profits):

$$3\,418\,480 + 7\,730\,522 = 11\,149\,002 \text{ UAH};$$

○Net Present Value (NPV):

$$NPV = \text{SUM} (F / [ (1 + i)^n ]) \quad (3.1)$$

Where,

PV = Present Value;

F = Future payment (cash flow);

i = 10% Discount rate (or interest rate);

n = 3 - the number of periods in the future.

Discount rate or return that could be earned in alternative investments

$$NPV = 3\,418\,480 / 1.1 + 7\,730\,522 / 1.1^2 = 9\,496\,570 \text{ UAH}$$

### **3.3 Risks and alternative approaches**

Risk is a category associated with overcoming uncertainty when there is a need and opportunity to assess the likelihood of achieving the intended goals.

Also, the risk is linked to decision-making. Decisions are made under conditions of certainty (the result of the decision is known), risk (there is a certain probability that the event will occur and some assessment can be made), uncertainty (the probability and consequences of the event cannot be foreseen), under the influence of factors may create different approaches, outcomes and even alternatives [50].

Investment risk is the probability of unforeseen financial losses (decrease in profits, loss of income, capital, etc.).

Almost all clerical investment activities have some risk for investors but in the case of the BIM method of project implementation and changes in approaches to Project Management, these may be considered mandatory and necessary action for each modern construction company that is focused on getting above-average profit [49].

All design and construction companies use modern software that helps them to do the task faster and more accurate, control the process and communicate during all stages of project development that is why all of them procure different programs (license), instruments, tools, and equipment that is also considered as an investment. Today, the BIM method becomes more and more popular around the globe because its implementation confirms the benefits in comparison to traditional methods that are still popular in Ukraine but less in modern developed countries.

Every method or technology may include risks and disadvantages during implementation or use and BIM is not an exclusion [45], [46], [47]:

- One of the main problems is the need to reorganize the design process and make important administrative and personnel changes. BIM is a detailed visualization of the project, which in itself does not make all the technical and engineering calculations, does not create a constructive when you press a key, and does not prepare an estimate that is why high qualify staff is required;
- BIM requires additional investment and such investment depends on the type of work (field/study of work) that company implements. However, such investments generate profit as was proved in the previous chapter;
- A transition period of low performance and sometimes without the Client's understanding of the delay. Difficulties in interpreting some results at earlier stages or improper usage of software or library;
- Proper staff training;
- Integration of different software and approaches into the BIM process;
- Wrong estimation of task duration at the beginning stages of implementation.

As mentioned above all such factors may create additional risks for Company, its performance, and as result for the Client. But usually, it may happen at the beginning stages.

If we consider or case of practical recommendations for “Da-Stroy” LLC and worst-case scenario may be outlined for implementation:

- Longer transition period than expected;
- Additional training or consultant service support;
- Additional expenses for integration of existing software into BIM, additional licenses, and library that usually are paid separately for such specific areas different from civil buildings (aerospace design, oil and gas design, and construction development);
- For big projects, the BIM engineer/administrator is required who will be able to soles the current issues of designers and architects.

As an alternative method to BIM, 3D CAD modeling may be considered but we should assume that the mentioned technology was some kind of prototype for the modern BIM method. Also, BIM allows you to not only plan and build a building but also manage it throughout its life cycle creating very big advantages.

Today, the most common usage is for three-dimensional object models (3D-BIM). However, the interest in 4D, 5D, 6D, and even 7D models is growing every year and opening new horizons for proper project management [48]:

- 3D-BIM engineering and geological works, security, logistical support of construction;
- 4D-BIM + temporary scheduling;
- 5D-BIM + financial costs;
- 6D-BIM + energy consumption and environmental parameters;
- 7D-BIM + maintenance.

Together with an advised recommendation of a project management approach for project development and usage, Company may become an industry leader and get additional profit but the development strategy should be reassessed with the creation of a proper implementation plan.

In consideration of the BIM alternative options for implementation for LLC “Da-Stroy”, these selections can be considered in different software packages that can be taken for assessment (with different possibilities for different tasks and costs). However, for purpose of design, engineering, and construction company that, today the main competition is between ArchiCAD created by Graphisoft SE (a Hungarian design software company headquartered in Budapest, Hungary), and Autodesk which was considered in this work (Autodesk, Inc. is an American multinational software corporation that makes software products and services for the architecture, engineering, construction, manufacturing, media,

education, and entertainment industries. Autodesk is headquartered in San Rafael, California, and has offices worldwide).

There are some pros and cons for each software complex and these mainly belong to the engineers' preferences and qualifications. Head-to-Head Criteria of comparison are done in Table 3.9 and Price Comparison in Table 3.10

Table 3.9 - Comparison of Head-to-Head Criteria for one pair of possible BIM software.

| Criterion                 | Revit  | ArchiCAD | Notes                                      |
|---------------------------|--------|----------|--------------------------------------------|
| Price                     | NA     | Winner   | Only by a slim margin over a 3-year period |
| Licensing                 | NA     | Winner   | Revit has no permanent license             |
| User Interface            | Winner | NA       |                                            |
| Massing & Nesting         | Winner | NA       | (see below)                                |
| Rendering                 | Winner | NA       |                                            |
| Workflow Between Programs | Winner | NA       |                                            |
| Simulations               | Revit  | NA       |                                            |

*Source: built by the author for comparison*

Table 3.10 - Comparison of Price

| Product  | Regular Price | Discounted Price |
|----------|---------------|------------------|
| Revit    | \$2,425/year  | Possible option  |
| ArchiCAD | \$2,250/year  | No Discount      |

*Source: built by the author for comparison*

In a price comparison, the winner is ArchiCAD.

May save about \$500 with a 3-year subscription, including license and upgrades. The longer continue using with ArchiCAD, the more savings can get versus Revit, because the per year upgrade cost is less than Revit.

Autodesk has recently switched its format from licensing to annual (or monthly) subscriptions. So, you can purchase a license of ArchiCAD outright and keep it forever, whereas, with Revit, you'll need to pay for your subscription annually. The advantage of this subscription method is that you'll always have the latest and greatest version of Revit year after year.

Despite the fact of the small difference mentioned in the Table 3.10 is less than 10% this gap may be decreased for some possible discount options during the procurement of Revit Product (Autodesk software that was used in work for assessment). Also, for purpose of the possibility of using BIM not only for design but for construction, maintenance, and other related aspects (4D-BIM + temporary scheduling, 5D-BIM + financial costs, 6D-BIM + energy consumption and environmental parameters, 7D-BIM + maintenance), Autodesk provides a wider possibility and options for consideration that make the choice more evident and correct.

In consideration of the necessary implementation of a proper project management practice in the company described in the thesis – there are no alternatives such as Company has already reached the limits when decisions can be made intuitive or “ad hoc” without a full understanding of the proper management approach.

### **3.4 Social responsibility**

Today, Corporate Social Responsibility (CSR) and the social responsibility of business (CRB) have absolutely different values than decades ago. Almost every system company aspires to create a responsible attitude to its product or service, to consumers, employees, and partners; the active social position of the company, consists of harmonious coexistence, interaction and constant dialogue with society, participation in solving the most acute social problems.

“Da-Stroy” LLC is not an exemption and tries to keep the mid-level of corporate culture and responsibility (with the constant focus on the further high standard for improvement) not only for its employees but keep sharing values for others through the voluntary programs, donations, and consultancy.

The corporate social responsibility of “Da-Stroy” LLC is aimed:

- Promotes sustainable development, including the health and well-being of society;
- Takes into account the expectations of stakeholders;
- Complies with current legislation and international standards of conduct;
- Integrated into the activities of the organization and practiced in its relations.

Keeping the high standard of CSR provides:

- Increasing employee engagement and loyalty to the company.
- Formation of stakeholder trust is a circle of interested parties with whom the company interacts (partners, customers, authorities, public organizations, etc.) to the company.
- Reducing reputational risks and critical perception of the company's activities, it is easier to overcome times of crisis.
- Implementation of innovations.

- Cost savings due to the introduction of the concept of "green office".
- Attracting investments and entering new markets.
- Sustainable business development in the long term.

In the context of the example of the external CSR, “Da-Stroy” LLC cooperates with the international partners in order to provide the aid for the Kozyavkin International Rehabilitation Clinic LLC in L’viv and L’viv region with different construction related works such as building, refurbishment, finishing, equipment procurement, etc.

Internally, the company tries to motivate the employees through

- Safety in the workplace;
- Stable, decent wages;
- Guarantee of social and medical insurance for employees;
- Providing financial assistance in emergencies.

Additionally, for further internal improvement, the company may consider in the context of CSR to provide staff with the opportunity for additional training: training programs, and advanced training. An example of a possible training solution was considered in the work when was advised to implement the BIM technology with a proper training program.

## CONCLUSIONS

This master's thesis was conducted on the theoretical and practical assessment of the current situation at the enterprise "Da-Stroy" LLC whose main interest is the design and construction activities of different complex projects. The assessment is based on the past performance of the company where was identified areas for potential improvement based on the modern approaches, methods with using tools, and technics applied by leading companies.

Based on the thesis we can draw the following conclusions.

The important factor for the success of any project is the implementation of a proper project management approach that is based on knowledge grouped into sections that are almost similar for all projects with no meter field of application. All projects include standard stages from initiation, planning, executing, monitoring/ controlling, and closing. Also, projects include different knowledge areas for consideration and use during different stages of implementation such as cost management, schedule management, integration management, risk, HR, communication, and others. Considering all these areas and their proper usage are usually described in the Project Management Plan that is mandatory for the development of almost all size projects but with some peculiarities. For small projects, such detailing can be general and cover the main aspects of project management at the same time a deep analysis should be conducted for the big and complex projects.

One of the main project manager's tasks is to find a compromise between various factors and resources. The main constraints of almost any project that he/she should work with are cost, scope, resources, quality, risks, and customer satisfaction that is why is important to know how to manage each of the constraints in purpose to get any above-average competitive advantages.

In modern conditions of project management in the field of design and construction each company is faced with a large number of regulatory obligations and regulations, local, regional and national standards, international practices, and recommendations that must be taken into account when implementing projects, which in turn add additional burdens on the management process and managers, client and contractor/implementor relationship that are legally bound through the different type of contracts the most popular from them are: Fixed Price (also known as Firm Fixed Price or Lumpsum ), Time and Materials (or unit price, Cost Reimbursement).

Analise the Ukrainian construction market during 2021, may see a small growth in comparison to the previous year even though almost full of 2021 was under different Governmental restrictions created by the COVID pandemic situation not only in Ukraine but globally. This characterizes the industry as attractive with some high level of competition because currently in Ukraine such a kind of service is offered by more than 50k construction companies and this indicator grows because of some government-supported programs such as «Velyke Budivnytstvo». The growing percentage of construction in 2021 shows a tendency and outlook for keeping this dynamic, and in 2022 with the possible increase that is also may be considered a positive signal for design and construction companies. However, to get a competitive advantage in the market, the company as “Da-Stroy” LLC should be flexible for change implementation and sometimes prompt actions that may create such advantages.

The company's portfolio includes dozens of different projects implemented around Ukraine and that is why company “Da-Stroy” LLC may be considered a qualified partner that has comparative advantages in the market of design and construction services. The company is an active player in different sectors of construction project service not only for private and governmental tasks but actively implemented different projects financed by international donors within the scope of interagency agreements between Ukraine and the USA.

In this master's thesis based on "Da-Stroy" LLC management approach financial and internal/external factors analysis, there were identified some problem areas for possible improvement.

For assessment, the next analysis was conducted: a SWOT (strengths, weaknesses, opportunities, and threats), external factors of the macroenvironment and their impact on activities (political, economic, structural, scientific/technical, socio-demographic, and international), analysis of the activities of direct competitors. Also, was conducted a financial assessment of the company with main general indicators that determine its size, the structure of prime cost, and total costs, as well as provide a calculation of financial stability.

The effectiveness of the project management style applied to previously completed projects allowed identifying of potential areas for improvement that may increase the effectiveness in the main areas of activities such as design, construction, design with further construction (turnkey projects), and other supplementary services such as procurement, installation, consulting, project management, etc.

Also, the internal processes were considered too from the subjective point of view for identification of the necessary corrective actions. There are enough potential processes for implementation and correction. The company should focus on creating and keeping the positive image of a good service provider that belongs to the Marketing department task or individual marketer who may manage that

Analyzing the macro and micro factors that affect the potential of the company, there were identified both the strengths and the weaknesses of the company under study in comparison with other firms. Despite the existing problems, the company occupies a good position in the domestic market and seeks to expand its activities, taking part in potential projects and applying innovations in project activities.

For the elimination of some identified problems, there were advised some theoretical and practical changes for implementation mainly focusing on the improvement of the project management mechanism and its effective control. The theoretical aspect was based on the practical recommendation according to the PMI (Project Management Institute) with the development of the Project Management Plan with the structure described in Section 3. The baseline of such document implementation doesn't require any significant investment and can be conducted by group managers, and leaders by themselves, however, a more professional approach requires deeper knowledge and preparation or an external service consultant but, in both cases, the earned benefits will cover all efforts and investment.

Another part of implementation for “Da-Stroy” LLC was advised implantation of the Building Information Modelling (BIM). It is a digital representation of the physical and functional characteristics of an object that creates a shared information resource of the object and forms a reliable basis for decision making throughout its life cycle: from early concepts to disposal.

The pros and cons of such method implementation were explained in detail and an economical assessment of this approach was done in this master's thesis on the example of design development for a new building. As result, the implementation of the BIM method showed a bigger profit since the second year in comparison to the approach without BIM, even though the standard payback period for capital investments in automation and computer software is 2-3 years.

Finally, was assessed possible risks and alternatives that confirmed the correctness of proposed changes for implementation.

The corporate social responsibility at the enterprise was explained in the last chapter together with some examples and potential possible improvement.

All given recommendations may increase the performance capacity of the Company, open new horizons in a such competitive market, and get additional profit.

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Додаток 1

до Положення (стандарту) бухгалтерського обліку 25  
"Фінансовий звіт суб'єкта малого підприємництва"**ФІНАНСОВИЙ ЗВІТ**  
**суб'єкта малого підприємництва**

|                                                    |                                    |                                                                                              |  |            |   |   |
|----------------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------|--|------------|---|---|
| Підприємство                                       |                                    | Дата (рік, місяць, число)                                                                    |  | КОДИ       |   |   |
| Товариство з обмеженою відповідальністю "ДА-СТРОЙ" |                                    |                                                                                              |  | 2019       | 1 | 1 |
| Територія                                          | КИЇВСЬКА                           |                                                                                              |  | 3221083502 |   |   |
| Організаційно-правова форма господарювання         |                                    | Товариство з обмеженою відповідальністю                                                      |  | 240        |   |   |
| Вид економічної діяльності                         |                                    | Будівництво житлових і нежитлових будівель                                                   |  |            |   |   |
| Середня кількість працівників, осіб                |                                    | 3                                                                                            |  | 41.20      |   |   |
| Одиниця виміру:                                    | тис. грн з одним десятковим знаком |                                                                                              |  |            |   |   |
| Адреса, телефон                                    |                                    | вулиця 1-го Травня, буд. 1/1, с. ДІБРОВО-ЛЕНІНСЬКЕ, БОРОДЯНСЬКИЙ РАЙОН, КИЇВСЬКА обл., 07855 |  | 0979527081 |   |   |

**1.Баланс на 31122018 р.**

|                                                                         |             |                           |                             |
|-------------------------------------------------------------------------|-------------|---------------------------|-----------------------------|
| Форма № 1-м                                                             |             | Код за ДКУД               | 1801006                     |
| Актив                                                                   | Код рядка   | На початок звітнього року | На кінець звітнього періоду |
| 1                                                                       | 2           | 3                         | 4                           |
| <b>I.Необоротні активи</b>                                              |             |                           |                             |
| Незавершені капітальні інвестиції                                       | 1005        | 0                         |                             |
| Основні засоби                                                          | 1010        | 0                         | 842                         |
| первісна вартість                                                       | 1011        | 27.9                      | 918.9                       |
| знос                                                                    | 1012        | ( 27.9 )                  | ( 76.9 )                    |
| Довгострокові біологічні активи                                         | 1020        | 0                         |                             |
| Довгострокові фінансові інвестиції                                      | 1030        | 0                         |                             |
| Інші необоротні активи                                                  | 1090        | 0                         |                             |
| <b>Усього за розділом I</b>                                             | <b>1095</b> | 0                         | 842                         |
| <b>II. Оборотні активи</b>                                              |             |                           |                             |
| Запаси                                                                  | 1100        | 449.1                     | 160.4                       |
| у тому числі готова продукція                                           | 1103        | 72.9                      |                             |
| Поточні біологічні активи                                               | 1110        | 0                         |                             |
| Дебіторська заборгованість за продукцію, товари, роботи, послуги        | 1125        | 400.5                     | 746.3                       |
| Дебіторська заборгованість за розрахунками з бюджетом                   | 1135        | 169.9                     | 314.6                       |
| у тому числі з податку на прибуток                                      | 1136        | 0                         | 1                           |
| Інша поточна дебіторська заборгованість                                 | 1155        | 7141.7                    | 2787.5                      |
| Поточні фінансові інвестиції                                            | 1160        | 0                         |                             |
| Гроші та їх еквіваленти                                                 | 1165        | 21.4                      | 34.4                        |
| Витрати майбутніх періодів                                              | 1170        | 0                         |                             |
| Інші оборотні активи                                                    | 1190        | 662.3                     | 394.6                       |
| <b>Усього за розділом II</b>                                            | <b>1195</b> | 8844.9                    | 4437.8                      |
| <b>III. Необоротні активи, утримувані для продажу, та групи вибуття</b> | <b>1200</b> | 0                         |                             |
| <b>Баланс</b>                                                           | <b>1300</b> | 8844.9                    | 5279.8                      |

| Пасив                                                                                                    | Код<br>рядка | На початок<br>звітнього року | На кінець<br>звітнього періоду |
|----------------------------------------------------------------------------------------------------------|--------------|------------------------------|--------------------------------|
| 1                                                                                                        | 2            | 3                            | 4                              |
| <b>I. Власний капітал</b>                                                                                |              |                              |                                |
| Зареєстрований (пайовий) капітал                                                                         | 1400         | 550                          | 550                            |
| Додатковий капітал                                                                                       | 1410         | 0                            |                                |
| Резервний капітал                                                                                        | 1415         | 0                            |                                |
| Нерозподілений прибуток (непокритий збиток)                                                              | 1420         | 521                          | 596.2                          |
| Неоплачений капітал                                                                                      | 1425         | ( 0 )                        | ( )                            |
| <b>Усього за розділом I</b>                                                                              | <b>1495</b>  | 1071                         | 1146.2                         |
| <b>II. Довгострокові зобов'язання, цільове фінансування та забезпечення</b>                              | <b>1595</b>  | 0                            |                                |
| <b>III. Поточні зобов'язання</b>                                                                         |              |                              |                                |
| Короткострокові кредити банків                                                                           | 1600         | 0                            |                                |
| Поточна кредиторська заборгованість за:                                                                  |              |                              |                                |
| довгостроковими зобов'язаннями                                                                           | 1610         | 0                            |                                |
| товари, роботи, послуги                                                                                  | 1615         | 2090.8                       | 1426.6                         |
| розрахунками з бюджетом                                                                                  | 1620         | 25.5                         | 118.1                          |
| у тому числі з податку на прибуток                                                                       | 1621         | 0                            | 17.9                           |
| розрахунками зі страхування                                                                              | 1625         | 3.3                          |                                |
| розрахунками з оплати праці                                                                              | 1630         | 18.4                         |                                |
| Доходи майбутніх періодів                                                                                | 1665         | 0                            |                                |
| Інші поточні зобов'язання                                                                                | 1690         | 5635.9                       | 2588.9                         |
| <b>Усього за розділом III</b>                                                                            | <b>1695</b>  | 7773.9                       | 4133.6                         |
| <b>IV. Зобов'язання, пов'язані з необоротними активами, утримуваними для продажу, та групами вибуття</b> | <b>1700</b>  | 0                            |                                |
| <b>Баланс</b>                                                                                            | <b>1900</b>  | 8844.9                       | 5279.8                         |

## 2. Звіт про фінансові результати за **Рік 2018**

| Форма № 2-м                                                    |              | Код за ДКУД          | 1801007                                    |
|----------------------------------------------------------------|--------------|----------------------|--------------------------------------------|
| Стаття                                                         | Код<br>рядка | За звітний<br>період | За аналогічний період<br>попереднього року |
| 1                                                              | 2            | 3                    | 4                                          |
| Чистий дохід від реалізації продукції (товарів, робіт, послуг) | 2000         | 17504.8              | 10146.6                                    |
| Інші операційні доходи                                         | 2120         | 307.9                | 123.4                                      |
| Інші доходи                                                    | 2240         |                      | 0                                          |
| <b>Разом доходи (2000 + 2120 + 2240)</b>                       | <b>2280</b>  | 17812.7              | 10270                                      |
| Собівартість реалізованої продукції (товарів, робіт, послуг)   | 2050         | ( 7186.3 )           | ( 5075.7 )                                 |
| Інші операційні витрати                                        | 2180         | ( 10527.1 )          | ( 5160.3 )                                 |
| Інші витрати                                                   | 2270         | ( )                  | ( 0 )                                      |
| <b>Разом витрати (2050 + 2180 + 2270)</b>                      | <b>2285</b>  | ( 17713.4 )          | ( 10236 )                                  |
| Фінансовий результат до оподаткування (2280 – 2285)            | 2290         | 99.3                 | 34                                         |
| Податок на прибуток                                            | 2300         | ( 24.1 )             | ( )                                        |
| <b>Чистий прибуток (збиток) (2290 – 2300)</b>                  | <b>2350</b>  | 75.2                 | 34                                         |

Керівник

\_\_\_\_\_

(підпис)

Венгерак Віталій Григорович

\_\_\_\_\_

(ініціали, прізвище)

Головний бухгалтер

\_\_\_\_\_

(підпис)

\_\_\_\_\_

(ініціали, прізвище)

Фінансова звітність мікропідприємства

Підприємство

Товариство з обмеженою відповідальністю "ДА-СТРОЙ"

Територія

КИЇВСЬКА

Організаційно-правова  
форма господарювання

ТОВ

Вид економічної діяльності

Будівництво житлових і нежитлових  
будівель

Середня кількість працівників, осіб

10

Одиниця виміру: тис. грн з одним десятковим знаком

Адреса, телефон

вулиця 1-го Травня, буд. 1/1, с. ДІБРОВО-ЛЕНІНСЬКЕ, БОРОДЯНСЬКИЙ  
РАЙОН, КИЇВСЬКА обл., 07855

Дата (рік, місяць, число)

за ЄДРПОУ

за КОАТУУ

за КОПФГ

за КВЕД

КОДИ

2020

01

01

35144656

3221083502

24

41.20

0979527081

1. Баланс на 31122019 р.

| Форма N 1-мс                                                         |              | Код за ДКУД                 | 1801006                       |
|----------------------------------------------------------------------|--------------|-----------------------------|-------------------------------|
| Актив                                                                | Код<br>рядка | На початок<br>звітного року | На кінець<br>звітного періоду |
| 1                                                                    | 2            | 3                           | 4                             |
| I. Необоротні активи                                                 |              |                             |                               |
| Основні засоби:                                                      | 1010         | 842                         | 761.9                         |
| первісна вартість                                                    | 1011         | 918.9                       | 923.9                         |
| знос                                                                 | 1012         | ( 76.9 )                    | ( 162 )                       |
| Інші необоротні активи                                               | 1090         |                             |                               |
| Усього за розділом I                                                 | 1095         | 842                         | 761.9                         |
| II. Оборотні активи                                                  |              |                             |                               |
| Запаси                                                               | 1100         | 160.4                       | 77                            |
| Поточна дебіторська заборгованість                                   | 1155         | 3848.4                      | 4614.2                        |
| Гроші та їх еквіваленти                                              | 1165         | 34.4                        | 203.7                         |
| Інші оборотні активи                                                 | 1190         | 394.6                       | 596.8                         |
| Усього за розділом II                                                | 1195         | 4437.8                      | 5491.7                        |
| Баланс                                                               | 1300         | 5279.8                      | 6253.6                        |
| Пасив                                                                | Код<br>рядка | На початок<br>звітного року | На кінець<br>звітного періоду |
| 1                                                                    | 2            | 3                           | 4                             |
| I. Власний капітал                                                   |              |                             |                               |
| Капітал                                                              | 1400         | 550                         | 550                           |
| Нерозподілений прибуток (непокритий збиток)                          | 1420         | 596.2                       | 647.1                         |
| Усього за розділом I                                                 | 1495         | 1146.2                      | 1197.1                        |
| II. Довгострокові зобов'язання, цільове фінансування та забезпечення | 1595         |                             |                               |
| III. Поточні зобов'язання                                            |              |                             |                               |
| Короткострокові кредити банків                                       | 1600         |                             | 118.4                         |
| Поточна кредиторська заборгованість за:                              | 1615         | 1426.6                      | 1644.5                        |
| товари, роботи, послуги                                              |              |                             |                               |
| розрахунками з бюджетом                                              | 1620         | 118.1                       | 10.2                          |
| розрахунками зі страхування                                          | 1625         |                             | 0.2                           |
| розрахунками з оплати праці                                          | 1630         |                             | 2                             |
| Інші поточні зобов'язання                                            | 1690         | 2588.9                      | 3281.2                        |
| Усього за розділом III                                               | 1695         | 4133.6                      | 5056.5                        |



|        |      |        |        |
|--------|------|--------|--------|
| Баланс | 1900 | 5279.8 | 6253.6 |
|--------|------|--------|--------|

## 2. Звіт про фінансові результати

за **Рік 2019**

р.

Форма N 2-мс

Код за ДКУД

1801007

| Стаття                                                                                | Код рядка | За звітний період | За попередній період |
|---------------------------------------------------------------------------------------|-----------|-------------------|----------------------|
| 1                                                                                     | 2         | 3                 | 4                    |
| Чистий дохід від реалізації продукції (товарів, робіт, послуг)                        | 2000      | 20199.8           | 17504.8              |
| Інші доходи                                                                           | 2160      | 16500             | 307.9                |
| Разом доходи (2000 + 2160)                                                            | 2280      | 36699.8           | 17812.7              |
| Собівартість реалізованої продукції (товарів, робіт, послуг)                          | 2050      | ( 10072 )         | ( 7186.3 )           |
| Інші витрати                                                                          | 2165      | ( 26565.7 )       | ( 10527.1 )          |
| Разом витрати (2050 + 2165)                                                           | 2285      | 36637.7           | 17713.4              |
| Фінансовий результат до оподаткування (2280 - 2285)                                   | 2290      | 62.1              | 99.3                 |
| Податок на прибуток                                                                   | 2300      | ( 11.2 )          | ( 24.1 )             |
| Витрати (доходи), які зменшують (збільшують) фінансовий результат після оподаткування | 2310      |                   |                      |
| Чистий прибуток (збиток) (2290 - 2300 - (+) 2310)                                     | 2350      | 50.9              | 75.2                 |

Керівник

Головний бухгалтер

(підпис)

(підпис)

Венгерак Віталій Григорович

(ініціали, прізвище)

(ініціали, прізвище)



Фінансова звітність мікропідприємства



Підприємство

Товариство з обмеженою відповідальністю "ДА-СТРОЙ"

Дата(рік,місяць,число)

за ЄДРПОУ

за КОАТУУ

за КОПФГ

за КВЕД

| Коди       |    |    |
|------------|----|----|
| 2021       | 01 | 01 |
| 35144656   |    |    |
| 3221083502 |    |    |
| 240        |    |    |
| 41.20      |    |    |

Територія КИЇВСЬКА, Бородянський р-н

Організаційно-правова форма господарювання Товариство з обмеженою відповідальністю

Вид економічної діяльності Будівництво житлових і нежитлових будівель

Середня кількість працівників, осіб 10

Одиниця виміру: тис. грн. з одним десятковим знаком

Адреса, телефон вулиця 1-го Травня, буд. 1/1, с. ДІБРОВО-ЛЕНІНСЬКЕ, БОРОДЯНСЬКИЙ РАЙОН, КИЇВСЬКА обл., 07855

0979527081

1. Баланс на  
на 31 грудня 2020 р.

Форма № 1-мс

Код за ДКУД

1801006

| Актив                              | Код<br>рядка | На початок<br>звітного року | На кінець<br>звітного періоду |
|------------------------------------|--------------|-----------------------------|-------------------------------|
| 1                                  | 2            | 3                           | 4                             |
| <b>I. Необоротні активи</b>        |              |                             |                               |
| Основні засоби :                   | 1010         | 761,9                       | 675,5                         |
| первісна вартість                  | 1011         | 923,9                       | 923,9                         |
| знос                               | 1012         | ( 162,0 )                   | ( 248,4 )                     |
| Інші необоротні активи             | 1090         | -                           | -                             |
| <b>Усього за розділом I</b>        | <b>1095</b>  | 761,9                       | 675,5                         |
| <b>II. Оборотні активи</b>         |              |                             |                               |
| Запаси                             | 1100         | 77,0                        | 1 974,1                       |
| Поточна дебіторська заборгованість | 1155         | 4 614,2                     | 6 766,1                       |
| Гроші та їх еквіваленти            | 1165         | 203,7                       | 1 622,6                       |
| Інші оборотні активи               | 1190         | 596,8                       | 567,5                         |
| <b>Усього за розділом II</b>       | <b>1195</b>  | 5 491,7                     | 10 930,3                      |
| <b>Баланс</b>                      | <b>1300</b>  | 6 253,6                     | 11 605,8                      |

| Пасив                                                                       | Код<br>рядка | На початок<br>звітного року | На кінець<br>звітного періоду |
|-----------------------------------------------------------------------------|--------------|-----------------------------|-------------------------------|
| 1                                                                           | 2            | 3                           | 4                             |
| <b>I. Власний капітал</b>                                                   |              |                             |                               |
| Капітал                                                                     | 1400         | 550,0                       | 550,0                         |
| Нерозподілений прибуток (непокритий збиток)                                 | 1420         | 647,1                       | 744,4                         |
| Неоплачений капітал                                                         | 1425         | ( - )                       | ( - )                         |
| <b>Усього за розділом I</b>                                                 | <b>1495</b>  | 1 197,1                     | 1 294,4                       |
| <b>II. Довгострокові зобов'язання, цільове фінансування та забезпечення</b> | 1595         | -                           | -                             |
| <b>III. Поточні зобов'язання</b>                                            |              |                             |                               |
| Короткострокові кредити банків                                              | 1600         | 118,4                       | 1 724,8                       |
| Поточна кредиторська заборгованість за:                                     |              |                             |                               |
| товари, роботи, послуги                                                     | 1615         | 1 644,5                     | 977,8                         |
| розрахунками з бюджетом                                                     | 1620         | 10,2                        | 9,4                           |
| розрахунками зі страхування                                                 | 1625         | 2,0                         | 5,2                           |
| розрахунками з оплати праці                                                 | 1630         | 0,2                         | -                             |
| Інші поточні зобов'язання                                                   | 1690         | 3 281,2                     | 7 594,2                       |
| <b>Усього за розділом III</b>                                               | <b>1695</b>  | 5 056,5                     | 10 311,4                      |
| <b>Баланс</b>                                                               | <b>1900</b>  | 6 253,6                     | 11 605,8                      |



**2. Звіт про фінансові результати**  
за \_\_\_\_\_ **Рік 2020**

Форма № 2-мс  
Код за ДКУД

1801007

| Стаття                                                                                | Код<br>рядка | За звітний<br>період | За попередній період |
|---------------------------------------------------------------------------------------|--------------|----------------------|----------------------|
| 1                                                                                     | 2            | 3                    | 4                    |
| Чистий дохід від реалізації продукції (товарів, робіт, послуг)                        | 2000         | 24 296,2             | 20 199,8             |
| Інші доходи                                                                           | 2160         | 16 954,3             | 16 500,0             |
| <b>Разом доходи</b> (2000 +2160)                                                      | <b>2280</b>  | 41 250,5             | 36 699,8             |
| Собівартість реалізованої продукції (товарів, робіт, послуг)                          | 2050         | ( 22 022,0 )         | ( 10 072,0 )         |
| Інші витрати                                                                          | 2165         | ( 19 112,7 )         | ( 26 565,7 )         |
| <b>Разом витрати</b> (2050 +2165)                                                     | <b>2285</b>  | 41 134,7             | 36 637,7             |
| Фінансовий результат до оподаткування (2280 – 2285)                                   | 2290         | 115,8                | 62,1                 |
| Податок на прибуток                                                                   | 2300         | ( 18,5 )             | ( 11,2 )             |
| Витрати (доходи), які зменшують (збільшують) фінансовий результат після оподаткування | 2310         | -                    | -                    |
| <b>Чистий прибуток (збиток)</b> (2290 – 2300 – (+) 2310)                              | <b>2350</b>  | 97,3                 | 50,9                 |

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Віталій  
Григорович*

Керівник \_\_\_\_\_  
(підпис)

Венгерак Віталій Григорович  
(ініціали, прізвище)

Головний бухгалтер \_\_\_\_\_  
(підпис)

\_\_\_\_\_  
(ініціали, прізвище)

