

**Czech University of Life Sciences Prague**  
**Faculty of Economics and Management**  
**Department of Economics**



**Bachelor Thesis**  
**Business plan of self-service car wash in Ukraine**

**Belikov Maksym**

# CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

## BACHELOR THESIS ASSIGNMENT

Belikov Maksym

Business Administration

### **Thesis title**

Business plan for a self-service car wash in

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### **Objectives of thesis**

This bachelor thesis is dedicated to establishing and developing a self-service car wash, soon to be in Ukraine (Dnepr).

The theoretical part gives a strong theoretical background and embraces all essential aspects of business planning. The acquired knowledge is based upon literature research from an online segment, most of which is cited in this work's bibliography section.

The practical part gives us an understanding of the author's future company's vision and mission, identifying economic factors and providing practical calculations to prove the project is executable and commercially successful.

### **Methodology**

The methodology is based on verifying legal issues of business in Ukraine, detailed financial plan with revenue outline for five years of the project lifecycle, lean canvas diagram, analysis, and calculation of total cost and start-up budget, break-even points on a monthly and daily basis, evaluation of investment using Net present value (NVP) and Internal rate of return (IRR) approaches.

**The proposed extent of the thesis**

40-50 pages

**Keywords**

Self-service car wash, Business plan, Marketing, Financial plan, Business

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**Recommended information sources**

1. Aaron Dignan (2019). Brave New Work. Publishing office:Penguin
  2. Hughes Delfryn (2015). Three Musketeers and your business plan.
  3. J.C. Spender (2014) Business Strategy: Managing Uncertainty, Opportunity, and Enterprise.
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  5. Linda Pinson (2008). Anatomy of a Business Plan: The Step-by-Step Guide to Building a Business and Securing Your Company's Future.
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### **Declaration**

I declare that I have worked on my bachelor thesis titled "Business plan for a self-service car wash in Ukraine" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on 2021

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## **Acknowledgement**

I would like to say thank Ing. Pavel Kotyza, Ph.D. for his help in writing bachelor thesis, for his support, valuable advices, comments and corrections.

# Business plan of a self-service car wash in Ukraine

## Abstract:

This bachelor thesis is dedicated to establishing and developing a self-service car wash, soon to be in Ukraine.

The theoretical part gives a strong theoretical background and embraces all essential aspects of business planning. The acquired knowledge is based upon literature research from an online segment, most of which is cited in this work's bibliography section.

The practical part gives us an understanding of the author's future company's vision and mission, identifying economic factors and providing practical calculations to prove the project is executable and commercially successful. Based on verifying legal issues of business in the self-service car wash, detailed financial plan with revenue outline for five years of the project lifecycle, lean canvas diagram, analysis, and calculation of total cost and start-up budget, break-even points on a monthly and daily basis, evaluation of investment using Net present value (NVP) and Internal rate of returns (IRR).

As a result, the first year's income prediction will be \$ 53 685,00 with a BEP of 55 cars per day and 1644 cars per month. The average selling price will be \$ 1,8. The NPV showed \$ 41 951,76, and IRR is 13% that means the project should be accepted.

**Keywords:** Self-service car wash, Business plan, Marketing, Financial plan, Business, Start-up budget, “Krindless”.

# Podnikatelský plán samoobslužné myčky aut na Ukrajině

## Abstrakt:

Tato bakalářská práce je věnována založení a rozvoji samoobslužné myčky aut na Ukrajině.

Teoretická část poskytuje silné teoretické zázemí a zahrnuje všechny základní aspekty podnikatelského plánování. Získané znalosti jsou založeny na výzkumu literatury z online segmentu, z nichž většina je citována v sekci bibliografie této práce.

Praktická část nám dává pochopení vize a poslání budoucí společnosti autora, identifikaci ekonomických faktorů a poskytování praktických výpočtů, které dokazují, že projekt je spustitelný a měl by tedy být i komerčně úspěšný. Na základě ověření právních otázek podnikání v oboru, je zpracován podrobný finanční plán s příjmy za pět let existence projektu, lean canvas diagram, analýza, a výpočet celkových nákladů a zakladatelského rozpočtu, bod zvratu na měsíční a denní bázi, hodnocení investic pomocí Čisté současné hodnoty (NVP) a Vnitřního výnosového procenta (IRR).

V důsledku toho bude predikce příjmů prvního roku \$ 53 685,00 s bodem zvratu 55 aut za den a 1,644 aut za měsíc. Průměrná prodejní cena na je stanovena na \$ 1,8. Čistá současná hodnota vyšla \$ 41 951,76, a IRR na úrovni 13 %. Výsledky naznačují, že projekt by měl být přijat.

**Klíčová slova:** Samoobslužné mytí aut, Podnikatelský plán, Marketing, Finanční plán, Podnikání, Zakladatelský rozpočet.

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# 1 Introduction

The bachelor's thesis goal is to create a business plan for a self-service car wash in Dnipro (Ukraine) called "Krandless".

The thesis is divided into two parts: theoretical and practical.

The theoretical part gives a strong theoretical background and embraces all essential aspects of business planning. The practical part is the implementation of obtained knowledge and the creation of a realistic business plan.

“What business is” define the first chapters of the theoretical part. It analyzes what business objectives are and conditions to succeed in business. Then it moves into the business planning. The paragraphs find “special criteria” which each business plan should get to be suitable. Moreover, the chapter describes the purpose of the business plan and its definition. The following point is lean canvas, that is a one-page diagram of a business plan. The last part of the theoretical part is structured business. It has a description based on literature research of how should write a business plan and which parts of the relevant field should be involved in creating the document.

The practical part under consideration is applying the theoretical part and into a real case – establishing a self-service car wash in Dnipro. The first half of the practical part is based on SWOT analysis based on the author's self-research. The second part is a detailed financial plan that includes details about initial investments, start-up budget, total costs, cost of production, break-even analysis, revenue projections, expenditures on equipment, evaluation of an investment using net present value, internal rate of return, and other relevant information.

The top three reasons for opening a self-service car wash are as follows. In the city of Dnipro, this type of business is not at all developed, and there is an opportunity to create a network of car washes. This type of business does not require constant management and intervention from employees. There is also an opportunity to work in any epidemiological situation, which is relevant in our time.

## 2 Objectives and methodology

### 2.1 Objectives

The Bachelor Thesis specializes in business planning, developing, and establishing of a self-service car wash located in Dnipro (Ukraine).

The Thesis's theoretical objectives are to define relevant information that provides a clear understanding of business planning, financial issues, market and marketing research.

Practical objectives are to apply all the information gathered to develop a car wash project, stabilize, and to evaluate risks.

The author needs to find the difference between cash inflows' present value and the present value of cash outflows over five years (NPV). It also needs an estimate of the profitability of potential investments (IRR). Moreover, calculate the production level at which total revenues for a product equal total expense (BEP).

### 2.2 Methodology

The methodology is based on verifying legal issues of business in Ukraine, detailed financial plan, calculation of total cost and start-up budget and depreciation, break-even points BEP on a monthly and daily basis, evaluation of investment using NVP and IRR approaches.

Additionally, amounts used in the thesis are shown in Ukrainian Hryvnia, and approximate exchange rates to other international currencies are written below:

(1 USD dollar) equal (27,8 UAH Hryvnias)

(1 CZK Koruna) equal (1,26 UAH Hryvnias), Currency changed to the dollar for understanding.

All the necessary formulas for the above calculations and an explanation of everything will be in the “Theoretical part”.

## 3 Theoretical part

### 3.1 Introduction to business

This chapter discusses basic business concepts. First of all, it is necessary to describe the definition of the term "business". After that, the reader will be able to find information about the specific criteria that must be met to be successful in any business. Also, the author will consider what types of business goals are and how to define them correctly.

#### 3.1.1 Definition of a business

*“There are no secrets to success. It is the result of preparation, hard work, and learning from failure.” - Colin Powell.*

*“There is only one boss. The customer. And he can fire everybody in the company from the chairman on down, simply by spending his money somewhere else.” – Sam Walton.*

A business is defined as an organization or enterprise engaged in a commercial, industrial or professional activity. Businesses can be for-profit organizations or non-profit organizations that work to fulfill a charitable mission or promote social goals.

The term "business" also refers to individuals' organized efforts and activities to produce and sell goods and services for a profit. The scale of the business ranges from a sole proprietor to an international corporation. Several theories are related to understanding business administration, including organizational behavior, organization theory, and strategic management.

#### 3.1.2 Conditions to succeed in a business

*“Succeeding in business is not just about making money.” - Daniel Snyder.*

*“To succeed, you need to find something to hold on to, something to motivate you, something to inspire you.” – Tony Dorsett.*

Steve Tobak (2015), author of "*Real leaders do not follow:*" said five competencies you will need to develop if you want to adapt, thrive, and distinguish yourself in this new world.

### 1. Critical thinking

Humans must question everything that they hear, particularly public opinion. Do not see things as black or white. Try to see everything in gray, from different points of view, different angles, points of view.

### 2. Focus and discipline

Focus and discipline have always been essential ingredients for success, especially nowadays. Any news that arrives on our phones can be confusing. It would be best to learn how to turn off the noise and work hard on what has value to you. Without discipline and focusing, you have no chance to complete your job correctly. Furthermore, if you do not do this job, someone else will.

### 3. Be human

We live in a world of social media. Many people go to the virtual world instead of the real one. People create their masks on social media and match them, forgetting about their uniqueness. Business and life do not accept people who put masks on (trying to look their best), but they like those who remain themselves.

### 4. How to get things done

Successful entrepreneurs have to know about motivating their staff and focusing on the company's primary goal. They have a sense of responsibility for themselves and the team. They live to solve problems. Entrepreneurs need to know precisely where they will be, their business priorities, and so on.

## 5. Competitive spirit

The most critical factor for success is the spirit of competition and the desire to win, which will increase over time and the competitive gap. You can learn to develop and adapt to competition with experience.

### 3.1.3 Business objectives

*“Great leaders help their people see how they can directly impact the company's objectives and their own personal goals.” - Chip Conley.*

Hughes Delfryn (2015), in his famous book “Three Musketeers and your business plan” said to focus on two objectives that should fit with the mission and vision of the business.

Short and long-term goals:

Short-term objectives: For example, by the end of this year, the company should achieve \$ 450,000 in revenue. Set goals for no longer than a year.

Long-term objectives, for example, are an expansion of offices, enterprises, subsidiaries, et cetera. Set the goals for 1-5 years. So, the company has something to develop all the time.

From the author’s point of view, the main goal that every company should adhere to is the policy of “satisfied customer, best customer”. Satisfied customers are the best incentive to grow your business.

## 3.2 Business planning

In this chapter, the author will examine and give a clear understanding of a business plan from two points of view and describe the two goals of business planning. It will also determine what the requirements for the business plan are.

### 3.2.1 Definition of a business plan

A business plan is a written document that details how a business (usually a startup) sets its goals and how its goals should be achieved. It also describes the nature of the business, sales and marketing strategy, and financial position and contains a projected income statement.

### 3.2.2 Purpose of a business plan

A well-written business plan will be invaluable in preparing your business. One of the primary purposes of writing a business plan is financial documentation. Business plans are mainly used to obtain external funding. It will show where and for what purposes the investors' money will be used, show how to return and increase the invested funds. It is the same with loans. Show the bank by what methods and in how many years we can return it. How to increase the chance of getting a loan? The British investment site "Company Debt" has named seven simple tips that will increase your chances of getting a business loan. Start by conducting a personal credit rating evaluation.

1. Improve your credit rating.
2. Present the likely outcome in the worst-case scenarios.
3. Memorize figures and proceed with confidence.
4. Consider appealing.
5. Apply to a different bank if rejected for reasons outside of poor credit history.
6. Consider alternative finance.

The second of a business plan's main goals is to have a step-by-step guide plan for a specific area of the business. It helps a lot, especially in the early stages of development. The business plan will contain information about all financial transactions.

### 3.2.3 Requirements from a business plan

A person must show that he will do everything to implement it in a business plan and apply all mental and material resources.

It would help if you clearly articulated a plan. All people are busy and do not want to spend all their free time understanding a business plan. You need to write and speak with simple yet basic ideas that might interest future investors.

Use only the most exciting information without long stories about anything (so as not to tire the audience). They need to see the big picture, not a small part of it.

Always be honest and logical. There is no need to lie about any information, even the smallest. This is what you are cheating in the first place.

Furthermore, of course, the precise final calculations in which the author used all the available financial information.

### 3.3 Lean canvas

*“In Running Lean, Ash has put together a book I wish I’d read before pursuing my own startup. The Lean methodology has received a lot of press, but the level of detail, including case studies and practical applications, make this book a resource worthy of sitting on every aspiring entrepreneur’s shelf. It’s not just great advice, but a great book, too.”* – Rand Fishkin, CEO and Co-founder, SEOMoz; Coauthor, *The Art of SEO*.

Writing perfect business plan is a time-consuming process. It will take you from several weeks to a month to create a well-thought-out and working business plan. More and more businessmen are recently using a simple and straightforward one-page business model diagram called "Lean Canvas". Ash Maurya (2012), author of a book named "Escaping Lean - Moving from Plan A to a Plan that Works, 2nd Edition", presented the Lean canvas.



The format of lean canvas:

Figure 1 Lean Canvas

<p><b>PROBLEM</b> Top 3 problems</p> <p style="font-size: 48px; text-align: center;">1</p>	<p><b>SOLUTION</b> Top 3 features</p> <p style="font-size: 48px; text-align: center;">4</p>	<p><b>UNIQUE VALUE PROPOSITION</b> Single, clear, compelling message that states why you are different and worth buying</p> <p style="font-size: 48px; text-align: center;">3</p>	<p><b>UNFAIR ADVANTAGE</b> Can't be easily copied</p> <p style="font-size: 48px; text-align: center;">5</p> <p>or bought</p>	<p><b>CUSTOMER SEGMENTS</b> Target customers</p> <p style="font-size: 48px; text-align: center;">2</p>
<p><b>COST STRUCTURE</b> Customer Acquisition Costs Hosting</p> <p style="font-size: 48px; text-align: center;">7</p> <p>Distributing Costs</p> <p>People, etc.</p>		<p><b>REVENUE STREAMS</b> Revenue Model</p> <p style="font-size: 48px; text-align: center;">6</p> <p>Revenue</p> <p>Lifetime Value</p> <p>Gross Margin</p>		
<p><b>KEY METRICS</b> Key activities you measure</p> <p style="font-size: 48px; text-align: center;">8</p>		<p><b>CHANNELS</b> Path to customers</p> <p style="font-size: 48px; text-align: center;">9</p>		

Source: Ash Maurya

According to Ash Maurya, the skinny canvas is divided into 9 numbered pieces depending on the order in which the pieces are to be filled. These are: 1. The problem; 2. Customer segments; 3. Unique value proposition; 4. Solution; 5. Unfair advantage; 6. Stream of income; 7. Cost structure; 8. Key indicators; 9. Channels.

### Problem and customer segment

List three main challenges for the company. Which, according to the author, will be at the start of the project.

In the client segment, the author should write who his clients are and where they will come from. What customer problem does your business solve?

### Unique value proposition

This is what will pique the interest of the client to prioritize your company and retain the client. This section describes your ideas and principles that are not used by direct competitors (or misused). People always prioritize uniqueness and then mediocrity.

### Solutions

There is a good saying: trouble does not come alone! So, your best bet is just to sketch out the simplest thing you can build to solve each problem.

### Unfair advantage

Dishonest benefits can also begin as values that become distinctive features over time.

You may have to leave this field blank when starting a business, but do not forget that it is there.

### Revenue streams

First, the minimum viable product is not synonymous with a defective or faulty product. Your product should address the underlying problems that customers consider important to them and the problems that the company needs to solve. According to this definition, you must plan to provide sufficient value to justify the charge.

### Cost structure

Use raw data on revenue streams and cost structure to calculate a break-even point and estimate how much time, money, and effort it will take you to reach it.

You will use this later to prioritize the model you will start with.

### Key metrics

Every company has several KPIs that can be used to measure its performance. These numbers are key to both measuring progress and identifying hotspots in your customers' lifecycle.

### Channels

The good news is that the customer discovery/interview process forces you to find “enough” customers ahead of time. However, if your business model is based on attracting many clients, this path may not go beyond the initial stages, and you may get stuck later.

For this reason, it is equally important to think about scalable channels from day one, so you can start building and testing them as early as possible.

## 3.4 Structured business plan

"The Anatomy of a Business Plan is one of the best books on the basics of writing a thoughtful, thorough, and professional business plan." - Jeffrey L. Seglin (Inc. magazine). The most convenient business plan structure for us is presented by Prison (2008) in his book Anatomy of a Business Plan and Automating Your 7nt Edition Business Plan because it is more specific and suitable for reporting. It includes the following items: Introduction; Executive Summary; Company analysis; Strategic Marketing and Tactical Marketing Planning; Financial plan; Investment appraisal methods.

### 3.4.1 Introduction

The introduction should include a detailed description so that the reader understands what to expect from the document. Moreover, you cannot delay the introduction much - it may get boring.

### 3.4.2 Executive summary

The executive summary is the important part of your business plan. It summarizes who you are, what your company does, where does your company goes, why does it go where it goes and how it gets there. If you are looking for funding, it states the purpose of the financing you are looking for and a rationale for your plan's financial feasibility for the lender or investor.

Although the summary is at the beginning of the plan, it is most effective.

It is written after completing the rest of your business plan. At that time, your concepts will be well designed, and all critical information and financial data will be available.

The statement summarizes the essence of your business plan by including answers to the following questions:

Who?    What?    Where?    When?    Why?    How?

As stated in the introduction, the executive summary is the outline of your business plan. It summarizes the content and purpose of your finished business plan, covering all the key points. It states who you are, what your company does, where your company is going, why it is going, where it is going, and how it will get there. A resume can be approached from either of the following two points of view.

### 3.4.3 Company analysis

The section of the business plan covers the organizational and analytical details of the business. It starts with a description of the company and of the products/services. Secondly, it concerns administrative and organizational plans. How the business is organized to operate efficiently and

economically (Pinson, 2008). The rest of the chapter is the SWOT analysis. A company description is another crucial element of any business plan.

The section provides information about the history of the company, its philosophy, mission. (company purpose), vision statement (future vision of the company), values, and corporate structure. Pinson (2008) selects three areas to be considered administratively:

### 1. Location

The choice of location is essential in many areas of business, but it is of great importance.

Value for restaurants. There are several aspects to consider when choosing a location.

#### Possibility and availability:

Accessibility determines how easy or difficult it is for consumers, employees, and suppliers to reach a destination where the company is located.

#### Competition:

The presence of competitors is also a significant factor. A large number of clients is good for any company if the adversary allows it to catch a surplus of consumers. However, it can also be a problem due to the strength of a competitor's brand.

#### Infrastructure:

The location should provide with full access to water, gas, electricity, and other appropriate facilities.

#### Price:

An important part of business analysis. It is necessary to consider the cost of rent and utilities. If the prices are very high, it will affect to the profitability of the business.

#### Legislation:

The entrepreneur must study the rights and obligations in order to avoid possible problems.

### 2. Legal structure

The person should describe the chosen legal structure and explain the benefits choice for business in the section.

a) Individual entrepreneur: Only one person is the owner of the company. This person is responsible for decision making, liabilities, and financing. The income tax for individual entrepreneurs is 15%. Existence IE, a person, assumes 100 percent of the risk. The advantages of the legal form are full control over all business aspects, decision making, every income, lower income tax. Cons: limited size, responsibility for debts, limited resources.

b) Partnership: The legal structure, like an individual entrepreneur, but consists of two or more owners who share all the risks. All owners are responsible for decision making, liability for debts or bank courts. The advantages are low startup costs, financial resources, risk sharing. Disadvantages are disagreements between partners, there is no way to find a new partner.

c) Others: limited liability company, corporation, public company, private company, cooperative, franchise, Holding company.

### 3. Management and staff

- Pinson (2008) says management of staff needs will be driven by business owners' opportunities in the amount of time they can devote to business and market demand.

When business gets more significant, the needs for management and personnel will also grow. Design goals companies for growth and a plan for the changes required to manage and staff.

### **SWOT analysis**

SWOT analysis is a necessary element of research, an obligatory preliminary stage in drawing up any level of strategic and marketing plans. The data obtained because of the situational analysis serves as the basic elements in the development of the strategic goals and objectives of the company. The abbreviation SWOT mean: S – Strengths, W – Weaknesses, O – Opportunity, T – Threats.

Figure 2 SWOT



Source: *Corporatefinanceinstitute.com (CFI)*

### 3.4.4 Financial plan

The financial plan is the most important analytical part of any business plan. The financial plan makes it possible to understand how profitable the business will be, shows what expenses and incomes will be, determines what investments are needed to launch the project.

Initial budget, income projection break-even analysis, cash flow will include in the financial plan. (Pinson, 2008)

The start-up budget is the budget that includes the cost of starting a business, before the business starts make a service or a product themselves. In other words, these are all costs incurred prior to opening day. Moreover, the business needs construction and the purchase of equipment.

The cash flow determines the cash received and the cash spent, for example, to pay bills. An income forecast (usually a three-year income forecast) is a projected income statement. The goal is to measure the future costs and revenues of the company. The formulas below will give possible to calculate gross profit and net profit:

Gross profit = Sales revenue - The cost of sales

Net Income = Gross Profit - Expenses - Interest Tax

The break-even analysis is represented by the point at which the costs of the company exactly match with the sales.

The volume and at which the business did not receive a profit, as well as a loss. The break-even point could be found by mathematical calculation or plotting. This will be expressed in:

1. Total revenue
2. Total units of production

To calculate a break-even analysis, a person needs the following three projections:

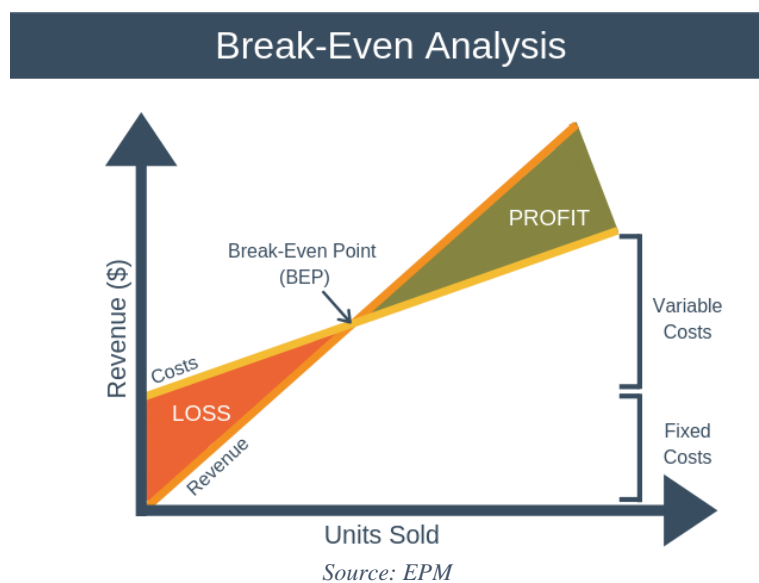
1. Fixed costs = Administrative Overhead + Interest
2. Variable costs = Cost of Goods + Selling Expenses
3. Total sales volume – projected sales for the same period

Mathematically break-even point can be as:

Fixed Cost + [ (Variable cost/Estimated Revenue) \* Sales], or

Break-even point = Total fixed costs / (selling price per unit - variable costs per unit).

Figure 3 Break-Even point





### 3.4.5 Investment evaluation techniques

Investment appraisal is used to determine how quickly the investment is paid off. Statistical methods such as average annual returns and average interest returns are based on monitoring cash payments or measuring initial costs without considering a risk factor. Time is limited for these techniques. However, dynamic methods are focused on discounting initial data considering the risk factor and time.

Additional information will describe two types of dynamic valuation methods: net present value and Internal rate of return (NPV and IRR).

Net present value is the result of the investment in today's monetary terms. Usage rule NPV means that projects with a net present value greater than 0 must be accepted, and a negative NPV should be rejected. The first basis for NPV is the present value of future cash flows at time “n”. The formula is:

$$PV = CF_n / (1 + r)^n,$$

where  $CF_n$  = cash flow for period 1,2, ... before period n;  $r$  = discount rate.

Likewise, the NPV of a project takes into account the PV of future cash flows as well as the initial investment.

Net present value is the present value of the project's cash flow minus investment costs.

It is calculated by discounting the cash flows at a discount rate “r”.

$$NPV = CF_0 + CF_1 / (1 + r)^1 + CF_2 / (1 + r)^2 + CF_3 / (1 + r)^3 + \dots + CF_n / (1 + r)^n$$

$$\text{Thus, } NPV = \sum CF_n / (1 + r)^n$$

Where  $CF_0$  = initial cash flow or investment

$CF_n$  = cash flow for period 1,2, ... before period n

$r$  = discount rate,

The Internal Rate of Return or IRR uses the same approach to discounted cash flow analysis as NPV.

The NPV result is expressed in monetary terms; in the IRR model, the result is presented as an interest rate of return. Thus, IRR is the discount rate that makes the NPV of the project equal to zero.

IRR rule

- to accept the project if the internal rate of return "r" is greater than the corresponding discount rate.

IN the formula is as follows:

$$0 = \sum_{t=0}^n \frac{CF_t}{(1 + IRR)^t},$$

where CF<sub>t</sub> = cash flow for each year; IRR = Internal Rate of Return; n = lifetime of the project.

## 4 Practical part

The practical part under consideration deals with the analysis of the concept of a new car wash in Dnepr (Ukraine).

The chapter includes a description of the company, legal issues, legal structure, and business model using lean canvas, SWOT analysis, and financial plan. Since the practical part of the thesis has a limited extent, not all the theoretical framework analysis will be conducted.

Instead of the structured business plan, the author presents the practical part based on the diagram.

“Lean canvas” and a detailed financial plan.

### 4.1 Car wash “Krindless”

Kindness is the name of a self-service car wash. In the city of Dnipro, the number of cars grows every year. This means that the demand for car washes is also growing, which is good news. Dnipro (approximately one million people) has eight self-service car washes of the same type and 10 of another. On average, it is okay if there are 5,000 cars per car wash.

Without calculations, it is clear that the numbers of cars are much larger. Since 1991, the number of passenger cars in the Dnipro has almost doubled.

If in 1991, (310,040) cars were registered in the region (an average of 80 cars per 1000 residents), it is more than 660 thousand today. Every day, new cars are registered in the city and the region. On average, there are 204 cars per 1000 inhabitants of the Dnipro.

This car wash will have six stations (the best format). After all, doing less is not profitable (payback time). All stations will operate around the clock.

#### 4.1.1 Legal factors

It is necessary to collect a whole list of various certificates and papers that will allow you to launch the washing complex legally.

- ✓ The right to land (all extracts and copies).
- ✓ Urban planning (city architecture).
- ✓ Declaration of the beginning / completion of construction.
- ✓ Documentation confirming the availability of technical conditions from all services according to the project.
- ✓ Investment advice approval and car wash documents permitting construction.
- ✓ Coordination of land boundaries with "neighbors".
- ✓ "1: 500" copy of the agreement with all services.
- ✓ Construction work logs.
- ✓ A receipt that confirms the share contribution, due to which the investment advice determines the interest value.
- ✓ Legalized ownership in the state register, which will allow you to buy a self-service car wash transparently and openly.
- ✓ Project budget, which clearly defines all types of work.
- ✓ Approved estimate of the city's construction infrastructure.
- ✓ Check with payment of the share rate according to the estimate.

“ICW.UA” will help prepare all the documents. (source: <https://icw.ua> ).

The self-service car wash business is organized by registering an individual entrepreneur (IE).

#### 4.1.2 Legal structure and funds for the project

The author shares all the risks and investments with a partner. The author and partner will have a partnership on equal parts. The author verifies the FOOL source or financing from family and friends because it is the safest and the most effective way of finding resources needed for the start-up.

First of all, the government and the NBU proposals to reform the program under which small businesses were given loans at 5%, 7% and 9% per annum. The loan terms will simplify and direct the program to refinance the existing loans.

## 4.2 Lean Canvas

### 4.2.1 Problem

The first problem is, of course, vandalism. The city of Dnipro has a high crime rate. If you leave something unattended, it will be stolen very soon. The second problem is customers who do not know how to use it. The third problem is the waiting area. Provided that all stations are occupied, customers should be able to wait in a comfortable environment.

### 4.2.2 Customer segment

Car wash customers are all people with cars. No one does not likes to drive a dirty car. The author wants to make money on this desire. The car wash "Krinkless" will be designed for people living in the area and drivers passing in the vicinity of a standing road.

Since this is the cheapest way to wash the car, we will not talk about customers' solvency.

### 4.2.3 Unique Value Proposition

The first unique proposition is a phone app with a loyalty system (after each car wash, points will be awarded, for which you can buy coffee or wash the car for free). The author has many friends who work in IT companies, and they will write this application.

The second unique proposition is a place to relax. After washing, when the mats or the car will dry out or before washing (if all stations are occupied), our customers will have a place to wait.

Furthermore, the main unique proposition is the first four days, everything will be free. First, this is done so that people know about us. As the author saw from his life in Dnipro, people from all over the city will come for it if something is free. This is beneficial in the first week. People will learn about us and tell their friends (the customer base will grow). Secondly, this is the fact that all the equipment needs to be tried.

### 4.2.4 Solution

#### 1. Vandalism

To solve this problem, the company must hire a security guard at the car wash.

#### 2. Not friendly with technologies

This problem is also solved by a security guard who will help customers with any questions. The guard will change every 12 hours.

#### 3. Waiting area

To solve this, there will be a completed small room with comfortable sofas and a coffee machine.

### 4.2.5 Unfair advantage

The main unfair advantage is many influential friends. By the word "influence", the author means that they have many followers on social networks, which will help a lot when the author starts the

project. In the beginning, a large number of people will learn about us on an opening day. Secondly, the author plans to launch a free promotion, which people should also know about. The last unfair advantage is the author's and partners' fathers. They have been entrepreneurs for at least 25 years, and they will help in difficult situations and share the experience.

#### 4.2.6 Revenue stream

The car wash will have services such as:

1. Washing with cold water and foam. Price 50 UAH (\$ >2)
2. Washing with warm water and foam. Price 75 UAH (\$ 2,6)
3. Washing with warm water. Price 25 UAH (\$ >1)

More informative calculations a reader can obtain from the thesis's Financial plan from the chapter “Revenue projection” below.

#### 4.2.7 Cost structure

The cost of washing is 5,84 UAH (\$ 0,2). This price includes cold water and foam (the most common service). Car wash will make warm water through boilers.

More information a reader can find in the financial plan of the thesis in the chapters “Break-even analysis”, “Cost of production”, “Total expenses” and other relevant chapters.

#### 4.2.8 Key metrics

This section is devoted to the Key Performance Indicators or KPI of a car wash. Since the author plans to have one working employee (security guard), we will not have a KPI.

If possible, the primary Key metric will be the number of people who returned to wash the car.

#### 4.2.9 Channels

Channels are the so-called path to the customer. Thus, the author will conduct a marketing campaign through the website, social networks, billboards, beneficial location, and various discount system:

“Krindless” will not have a website. The car wash will have an application for phones in which you can see the car wash's workload. There will be points for regular customers for which you can buy coffee and wash the car for free.

Service will also have pages on Instagram and Facebook.

The entire advertising campaign will be carried out through various applications for drivers. Such as 2GIS, Google Maps, et cetera. Because advertising via Instagram (Facebook) will not bring customers. These are not the author’s thoughts, these are the words of a man who has seven self-service car washes (Vladimir Kozhanov).

#### 4.2.10 Lean canvas diagram

LEAN CANVAS

Problem (1)	Solution (4)	Unique Value Proposition (3)	Unfair advantage (5)	Customer segment (2)
1. Vandalism	1. Will be a security guard at the car wash. 2. also solved by a security guard who will help customers with any questions. 3. Will be a completed small room with comfortable sofas and a coffee machine.	1. Phone app with a loyalty system 2. Place to relax 3. 4 days everything will be free	1. Friends with a lot of followers on social networks. 2. Mine and my partner's dad's.	1. living in the area people (with cars) and drivers passing in the vicinity of a standing road.
2. Customers who do not know how to use it				
3. Waiting area	Key metrics (8) Will be the number of people who returned to wash the car			
Cost Structure (7)		Revenue stream (6)		
1. Variable cost per one car is \$ 0,2 2. Start-up budget is \$ 199 043,24 3. Break-even point per day is 55 and 1644 per month		1. Washing with cold water and foam. Price 50 UAH (\$ 1,8) 2. Washing with warm water and foam. Price 75 UAH (\$ 2,8) 3. Washing with warm water. Price 25 UAH (\$ 0,9)		

Source: Author

## 4.3 Financial plan

To prove the self-service car wash will be workable and will generate profit financial plan is presented. It includes initial investments, startup budget, fixed and variable costs, revenue projections for pessimistic, optimistic, base scenarios, break-even analysis, and other relevant information.

### 4.3.1 Cost of production

The cost of producing a self-service car wash includes only the cost of water, electricity, and cleaning chemicals. Below you can see the monthly calculations.

*Table 1 Cost of production*

Service	Working hours (min)	Cost price	Margin	Margin (USD)	Margin %
Foam	1,25	5,21 ₴	19,79 ₴	\$ 0,71	79%
Cold water	3,5	0,63 ₴	24,37 ₴	\$ 0,88	97%
Warm water	3	6,06 ₴	18,94 ₴	\$ 0,68	76%

*Source: Author*

Since 98% of customers often purchased the program: “foam and warm water” is the minimum receipt, and the cost of this service is 5.84 UAH (**\$ 0.2**) by one car. The average price for this service from competitors is 60 UAH (\$ 2.16).

### 4.3.2 Equipment

Usually, all the equipment is already included in the complex. The complex is a ready-made self-service car wash with all the necessary equipment to run. The author would like to use a company called "ICW.UA". They offer:



Table 2 Equipment

Construction of 6 posts	\$ 36 000,00
Landscaping of 600 square meters	\$ 9 000,00
Technical room	\$ 9 600,00
Car wash frame 6 posts	\$ 48 000,00
Equipment for 6 posts	\$ 86 400,00
<b>Total</b>	<b>\$ 189 000,00</b>

Source: Author

They will also help with the start-up and operation. Of course, the equipment's guaranty is 12 months, 24 months for electronics, and 36 months for stainless elements. The cost of car wash frame includes a cost of rest room.

So, the total cost of equipment is \$ 189 000. This price includes the construction.

#### 4.3.3 Furniture and coffee machine

Since the car wash will have a place to wait (relax), it should be comfortable. Moreover, there will work a guard. Thus, there is a need to invest money in furniture and materials for decoration inside. The table with necessary points is:

Table 3 Furniture

Furniture	Units	Price per unit with VAT (UAH)	Total price with VAT (UAH)	Total price with VAT (\$)
Table	1	1 500,00 ₺	1 500,00 ₺	\$ 53,96
Sofa	2	4 000,00 ₺	8 000,00 ₺	\$ 287,77
Chair	4	500,00 ₺	2 000,00 ₺	\$ 71,94
Coffee machine	1	15 000,00 ₺	15 000,00 ₺	\$ 539,57
			<b>Total:</b>	<b>\$ 953,24</b>

Source: Author

The total cost of furniture and coffee machine is \$ 953,24.

#### 4.3.4 Services

- 1) Outsourcing service (accountant) 10000 UAH = \$ 360
- 2) Pumping out dirt from the pit 5000 UAH = \$ 180
- 3) Garbage collection 500 UAH = \$ 18
- 4) Others 2000 UAH = \$ 72

Thus,

*Table 4 Services*

<b>Accountant</b>	<b>\$ 360,00</b>
<b>Pumping out</b>	<b>\$ 180,00</b>
<b>Garbage collection</b>	<b>\$ 18,00</b>
<b>Others</b>	<b>\$ 72,00</b>
<b>Total</b>	<b>\$ 630,00</b>

*Source: Author*

The total expenses on services **\$ 630** per month.

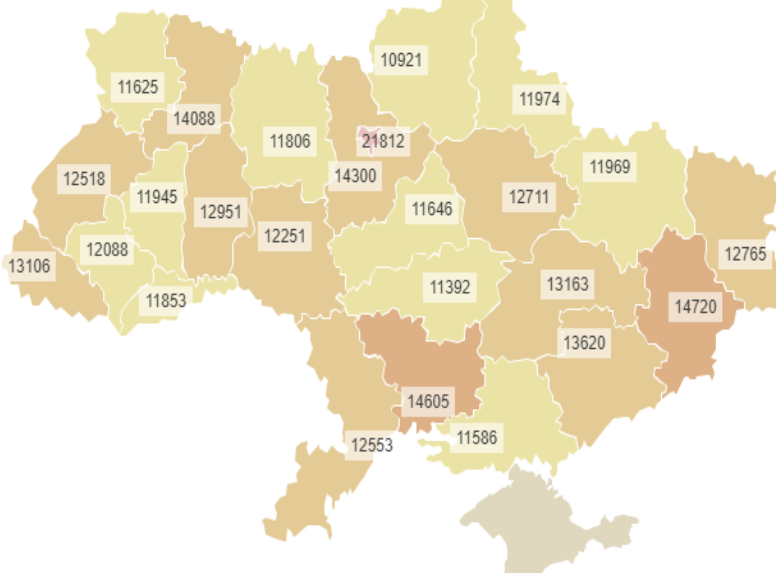
#### 4.3.5 Employees

As mentioned earlier, there will be one employee who will be at the car wash. Nevertheless, since one person cannot work without a break, there will be four employees. Each of them will have a working day of 12 hours.

They will have only two tasks: 1) To help those who cannot understand the technology “how to use” 2) To protect the object from vandalism. In the pictures below, you can see the average salary in Ukraine.

The author highlighted the salary in Dnipro in yellow.

Figure 4 Average salary in Ukraine



Source: Ministry of Finance

Table 5 Salary in Ukraine

December 2020	UAH	\$
Ukraine	14 179,00 ₴	\$ 508,57
Vinnitsia	12 251,00 ₴	\$ 439,42
<b>Dnipro</b>	<b>13 163,00 ₴</b>	<b>\$ 472,13</b>
Donetck	14 720,00 ₴	\$ 527,98
Lviv	12 518,00 ₴	\$ 449,00
Poltava	12 711,00 ₴	\$ 455,92
Zaporizhzhia	13 620,00 ₴	\$ 488,52
Odessa	12 553,00 ₴	\$ 450,25
Ivano-Frankivsk	12 088,00 ₴	\$ 433,57
Kiev	14 300,00 ₴	\$ 512,91
Kharkiv	11 586,00 ₴	\$ 415,57

Source: Author

The average salary in Dnipro is \$ 472. Since car wash are just starting up, we will pay \$ 300. And the monthly employees' salary is \$ 1 200.

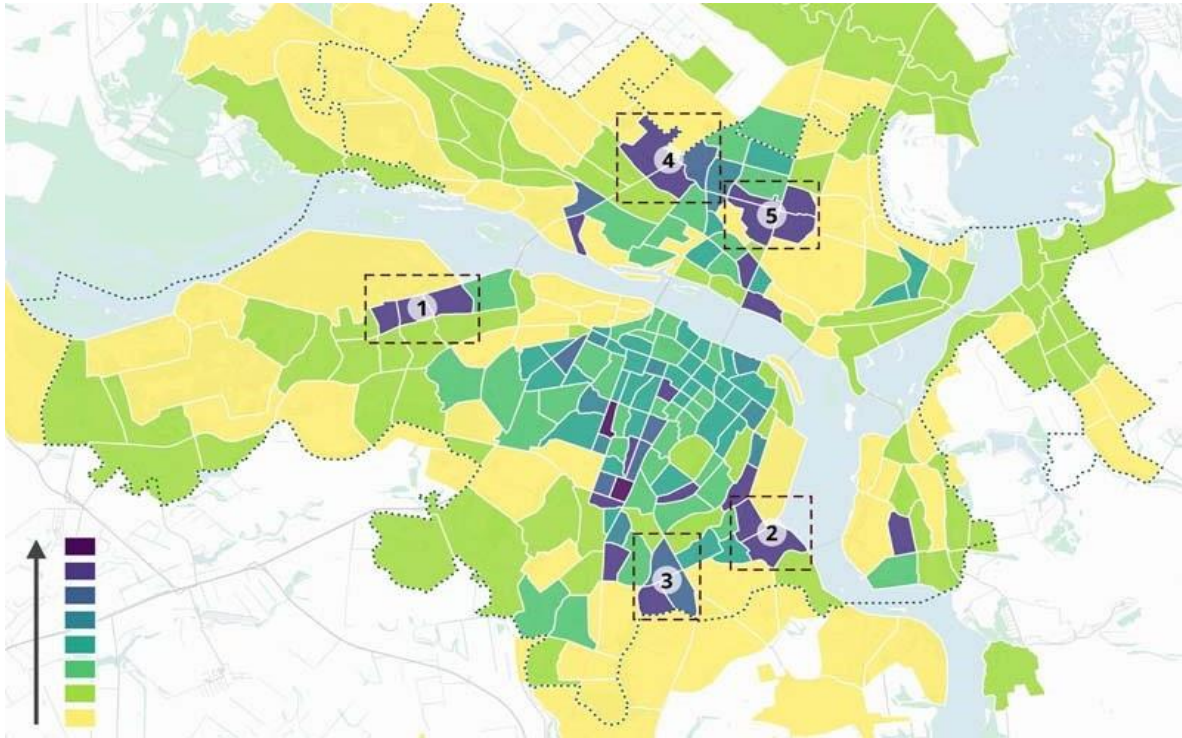
#### 4.3.6 Location

The location should be the first line with an excellent exit to the public road, preferably near major road interchanges. The car wash should be visible from the roadway, so it should not be too far away from it or blocked by large objects.

Also, a big plus will be nearby parking lots, maintenance services, shopping centers. The absence of competitors in the chosen area is another advantage. In Dnipro, it is better to open a self-service car wash in a place where there is an eternal sweat of cars.

On the picture below, you can see the most densely populated areas of Dnipro.

Figure 5 Densely population in Dnipro



Source: *Life in Dnipro*

The author's self-service car wash will be based on the main roads in the area with the number 4. Since there is relatively little land value in this area. Here is one location that is suitable for the number of cars.

This place is perfect because:

- 1) This is the beginning of the highway.
- 2) This is a residential area of the city.
- 3) There is a car service nearby.

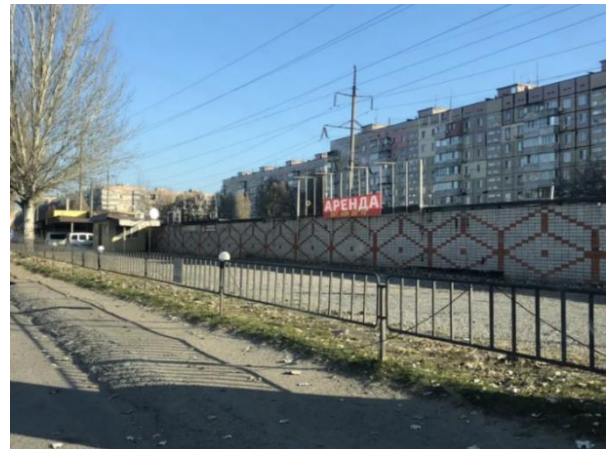
And the cost is \$ 800 per month.

Screenshot 2 Location



Source: (<https://www.olx.ua/d/obyavlenie/avtosalon-na-donetskom-shosse-IDK476q.html?isPreviewActive=0&sliderIndex=0> )

Screenshot 1 Location



Source: (<https://www.olx.ua/d/obyavlenie/avtosalon-na-donetskom-shosse-IDK476q.html?isPreviewActive=0&sliderIndex=0> )

#### 4.3.7 Total cost

In the chapter will be presented total costs of the project: fixed costs, variable costs, initial investments. Firstly, the author presents total fixed costs per month:

Table 6 Fixed cost

Item	Cost per month including VAT
Rent	\$ 800,00
Salary	\$ 1 200,00
Services	\$ 630,00
<b>Total</b>	<b>\$ 2 630,00</b>

Source: Author

The sum of fixed cost per one month is **\$ 2 630**. The table consists of salary, rent, and services. Here the author does not have utilities because it depends on cars. Secondly, the variable cost:

Table 7 Variable Cost

<b>Time required for one car wash</b>	<b>8 min</b>	<b>On one post per hour</b>							<b>7,5</b>
<b>Number of posts</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	
<b>Number of cars per hour</b>	7,5	15	22,5	30	37,5	45	52,5	60	
<b>Maximum per day</b>	180	360	540	720	900	1080	1260	1440	
<b>With a load of 5%</b>	9	18	27	36	45	54	63	72	
<b>With a load of 10%</b>	18	36	54	72	90	108	126	144	
<b>With a load of 20%</b>	36	72	108	144	180	216	252	288	
<b>With a load of 30%</b>	54	108	162	216	270	324	378	432	
<b>With a load of 50%</b>	90	180	270	360	450	540	630	720	

Source: Author

For that calculation the author will use average load (20%) of self-service car wash.

Table 8 Load of the car wah 20%

<b>Number cars per month</b>	6480
<b>Cost of production</b>	\$ 0,20
<b>Total</b>	<b>\$ 1 296,00</b>

Source: Author

The variable cost is \$ 1 296 per month.

The third part is initial investment:

Table 9 Initial investment

<b>Initial investment</b>	<b>Cost including VAT</b>
<b>Equipment</b>	\$ 189 000,00
<b>Furniture</b>	\$ 953,24
<b>Total</b>	<b>\$ 189 953,24</b>

Source: Author

The table gathers all expenditures on equipment and ICW.UA services with all necessary materials. Furthermore, the total initial investment equals \$ 189 953,24. The cost includes VAT.

Depreciation in Ukraine for equipment calculate as “Price per equipment divided by 5 years” (20% per year). Depreciation of equipment include cost of equipment and technical room, so:

Table 10 Depreciation of equipment

Equipment	Rate	20%	20%	20%	20%	20%
	Price	\$96 000,00	\$96 000,00	\$96 000,00	\$96 000,00	\$96 000,00
	Years	1	2	3	4	5
	Depreciation	\$19 200,00	\$19 200,00	\$19 200,00	\$19 200,00	\$19 200,00
	Accumulated depreciation	\$19 200,00	\$38 400,00	\$57 600,00	\$76 800,00	\$96 000,00
	Residual price	\$76 800,00	\$57 600,00	\$38 400,00	\$19 200,00	\$ -

Source: Author

Depreciation for building calculate as “Price per building divided by 10 years” (10% per year).

Table 11 Depreciation of building

Building	Rate	10%	10%	10%	10%	10%
	Price	\$48 000,00	\$48 000,00	\$48 000,00	\$48 000,00	\$48 000,00
	Years	1	2	3	4	5
	Depreciation	\$ 4 800,00	\$ 4 800,00	\$ 4 800,00	\$ 4 800,00	\$ 4 800,00
	Accumulated depreciation	\$ 4 800,00	\$ 9 600,00	\$14 400,00	\$19 200,00	\$24 000,00
	Residual price	\$43 200,00	\$38 400,00	\$33 600,00	\$28 800,00	\$24 000,00

Source: Author

Total depreciation of the project per year is:

Table 12 Total depreciation

Year	1	2	3	4	5
Depreciation of equipment	\$ 19 200,00	\$ 19 200,00	\$ 19 200,00	\$ 19 200,00	\$ 19 200,00
Depreciation of building	\$ 4 800,00	\$ 4 800,00	\$ 4 800,00	\$ 4 800,00	\$ 4 800,00
<b>Total per year</b>	<b>\$ 24 000,00</b>	<b>\$ 24 000,00</b>	<b>\$ 24 000,00</b>	<b>\$ 24 000,00</b>	<b>\$ 24 000,00</b>

Source: Author

#### 4.3.8 Start-up budget

The start-up budget includes the cost of initial investment and reserves to make the business run. As you saw before, the cost of investment is \$ 189 953,24. For the project's complete safety, the author will calculate the start-up budget without profit for the first three months.

Table 13 Start-up budget

<b>Initial investment</b>	<b>\$ 189 953,24</b>
<b>Fixed cost (3 month)</b>	<b>\$ 7 890,00</b>
<b>Variable cost (3 month)</b>	<b>\$ 1 200,00</b>
<b>Total</b>	<b>\$ 199 043,24</b>

Source: Author

After calculation the start-up budget equal \$ 199 043,24. The author wants to raise the start-up budget to \$ 200,000.

#### 4.3.9 Revenue projections

Revenue projections are predictions of revenue and income that are based on three scenarios: the worst (with a load 5%), the base (with a load of 20%), and the optimistic ones (with a load of 50%).

Table 14 Profit per year without fixed cost

	<b>Cars per year</b>	<b>Revenue per year</b>	<b>Expenses per year (on utilities)</b>	<b>Profit per year</b>	<b>Profit per year \$</b>
<b>With a load of 5%</b>	19710	985 500,00 €	115 304,00 €	870 196,00 €	<b>\$ 31 302,01</b>
<b>With a load of 10%</b>	39420	1 971 000,00 €	230 608,00 €	1 740 392,00 €	<b>\$ 62 604,03</b>
<b>With a load of 20%</b>	78840	3 942 000,00 €	461 214,00 €	3 480 786,00 €	<b>\$ 125 208,13</b>
<b>With a load of 30%</b>	118260	5 913 000,00 €	691 824,00 €	5 221 176,00 €	<b>\$ 187 812,09</b>
<b>With a load of 50%</b>	197100	9 855 000,00 €	1 153 040,00 €	8 701 960,00 €	<b>\$ 313 020,14</b>

Source: Author

This calculation without fixed cost because the variable cost is utilities. So, let us add it with the base scenario with a cost of 50 UAH (\$ 1,8). Cost includes Value Added Tax (VAT in Ukraine equal 20%).



Table 15 Profit per year (3 scenarios)

	Revenue per year	Expenses per year (on utilities)	Fixed cost per year	Profit per year \$
With a load 5%	\$ 35 593,53	\$ 3 942,00	\$ 31 560,00	\$ 91,53
With a load 20%	\$ 141 798,56	\$ 15 768,00	\$ 31 560,00	\$ 94 470,56
with a load 50%	\$ 354 496,40	\$ 39 420,00	\$ 31 560,00	\$ 283 516,40

Source: Author

Total revenue per year by base scenario is \$ 94 470,56 (without depreciation and Tax). Our start-up budget has value \$ 200 000,00.

#### 4.3.10 Break-Even analysis

The Break-even point is the point where the company has a profit. The author presents two BEP based on a monthly and daily basis.

Monthly basis:

Table 16 BEP per month

Total fixed cost	\$ 2 630,00
Variable cost per one car	\$ 0,20
Selling price	\$ 1,80
<b>BEP on monthly basis</b>	<b>1643,75</b>

Source: Author

The total fixed cost per one month is \$ 2 630. The average variable cost of washing one car is \$ 0,2. The selling price is \$ 1,8. The BEP is 1 644 cars per month. That approximately 5% load of the self-service car wash. As the author said before, that number of cars is the worst scenario.

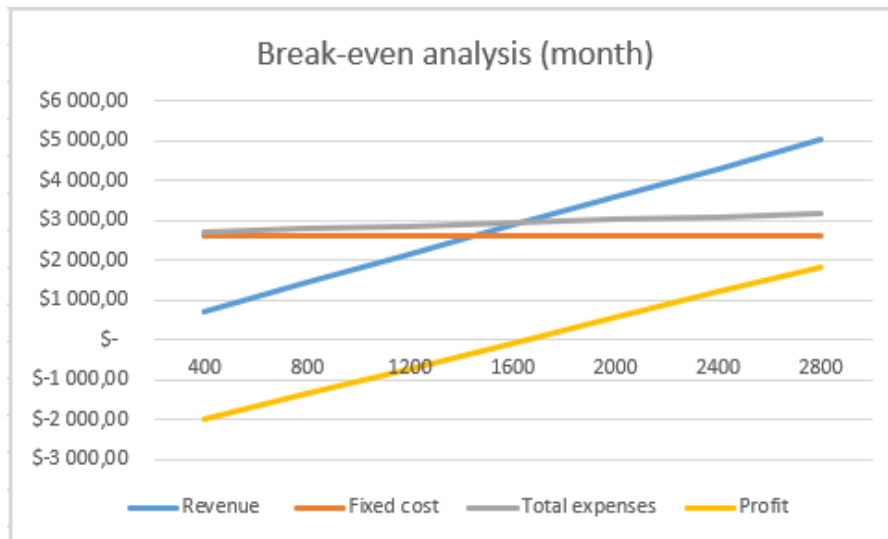
Table 17 Data for the graph (monthly)

Units	Revenue	Fixed cost	Total expenses	Profit
400	\$ 720,00	\$ 2 630,00	\$ 2 710,00	\$-1 990,00
800	\$ 1 440,00	\$ 2 630,00	\$ 2 790,00	\$-1 350,00
1200	\$ 2 160,00	\$ 2 630,00	\$ 2 870,00	\$ -710,00
1600	\$ 2 880,00	\$ 2 630,00	\$ 2 950,00	\$ -70,00
2000	\$ 3 600,00	\$ 2 630,00	\$ 3 030,00	\$ 570,00
2400	\$ 4 320,00	\$ 2 630,00	\$ 3 110,00	\$ 1 210,00
2800	\$ 5 040,00	\$ 2 630,00	\$ 3 190,00	\$ 1 850,00

Source: Author

Below is the graph from this data:

Graph 1 BEP per month



Source: Author

There are four lines on the graph: revenue (blue), fixed cost (red), total expenses (grey), profit (orange). The intersection of revenue line and total expenses line is a break-even point on a monthly basis.

On daily basis:

Table 18 BEP per day

Total fixed cost	\$ 87,67
Variable cost per one car	\$ 0,20
Selling price	\$ 1,80

<b>BEP on daily basis</b>	<b>\$ 54,79</b>
---------------------------	-----------------

Source: Author

The BEP is 55 cars per day. That approximately 5% load of the self-service car wash. As the author said before, that number of cars is the worst scenario.

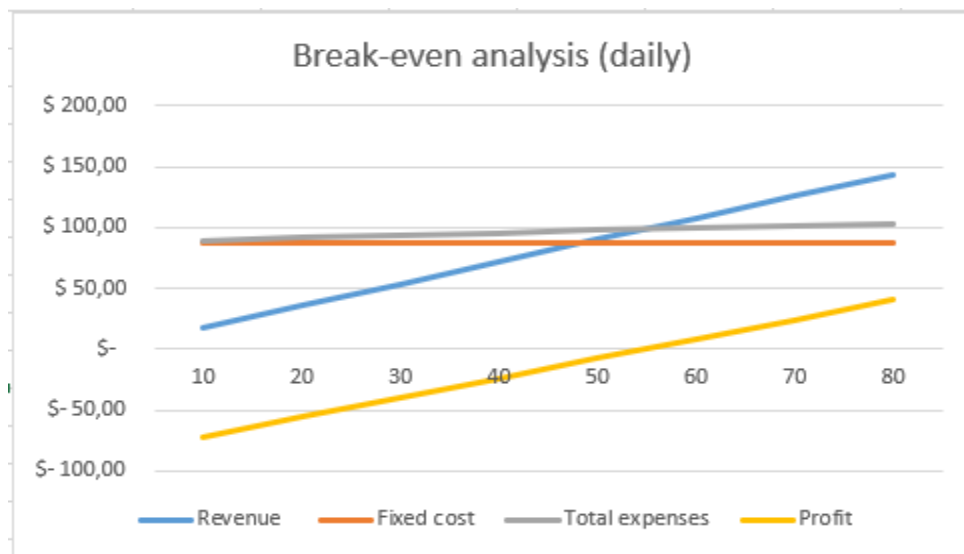
Table 19 Data for the graph (daily)

Units	Revenue	Fixed cost	Total expenses	Profit
10	\$ 18,00	\$ 87,67	\$ 89,67	\$ -71,67
20	\$ 36,00	\$ 87,67	\$ 91,67	\$ -55,67
30	\$ 54,00	\$ 87,67	\$ 93,67	\$ -39,67
40	\$ 72,00	\$ 87,67	\$ 95,67	\$ -23,67
50	\$ 90,00	\$ 87,67	\$ 97,67	\$ -7,67
60	\$ 108,00	\$ 87,67	\$ 99,67	\$ 8,33
70	\$ 126,00	\$ 87,67	\$ 101,67	\$ 24,33
80	\$ 144,00	\$ 87,67	\$ 103,67	\$ 40,33

Source: Author

Below is the graph from this data:

Graph 2 BEP per day



Source: Author

There are four lines on the graph: revenue (blue), fixed cost (red), total expenses (grey), profit (orange). The intersection of revenue line and total expenses line is a break-even point daily.

Thus, the company needs to produce at least **55** units per day or **1 644** per month to make neither profit nor loss.

#### 4.3.11 Investment evaluation

Table 20 Investment evaluation

Year	0	1	2	3	4	5	Total
Cash	\$ 200 000,00						
Total revenue		\$ 141 789,56	\$141 789,56	\$ 141 789,56	\$141 789,56	\$141 789,56	\$ 708 947,80
Capital expenditures	\$ 200 000,00						
Operational costs		\$ 47 328,00	\$ 47 328,00	\$ 47 328,00	\$ 47 328,00	\$ 47 328,00	\$ 236 640,00
Total costs	\$ 200 000,00	\$ 47 328,00	\$ 47 328,00	\$ 47 328,00	\$ 47 328,00	\$ 47 328,00	\$ 436 640,00
CF1	-	\$ 94 461,56	\$ 94 461,56	\$ 94 461,56	\$ 94 461,56	\$ 94 461,56	\$ 472 307,80
External financing	-	-	-	-	-	-	
CF2		\$ 94 461,56	\$ 94 461,56	\$ 94 461,56	\$ 94 461,56	\$ 94 461,56	
Depreciation		\$ 24 000,00	\$ 24 000,00	\$ 24 000,00	\$ 24 000,00	\$ 24 000,00	
Gross profit		\$ 70 461,56	\$ 70 461,56	\$ 70 461,56	\$ 70 461,56	\$ 70 461,56	
Tax base		\$ 70 461,56	\$ 70 461,56	\$ 70 461,56	\$ 70 461,56	\$ 70 461,56	
Tax 20%		\$ 14 092,31	\$ 14 092,31	\$ 14 092,31	\$ 14 092,31	\$ 14 092,31	
Net profit		\$ 56 369,25	\$ 56 369,25	\$ 56 369,25	\$ 56 369,25	\$ 56 369,25	
CF3 accumulated		\$ 56 369,25	\$112 738,50	\$ 169 107,75	\$ 225 477,00	\$ 281 846,25	
CF4	\$ -200 000,00	\$ 53 685,00	\$102 257,14	\$ 146 081,63	\$ 185 500,49	\$ 220 833,91	

Source: Author

1. CF1 = revenue minus costs
2. CF2 = financing
3. CF3 = CF2 minus 20% TAX
4. CF4 = discounted CF3 by 5%

When cash flows are measured it is possible to evaluate an investment NPV. So, NPV of the project is (discount rate 5 %)

$$NPV = CF_0 + CF_1 / (1+r)^1 + CF_2 / (1+r)^2 + CF_3 / (1+r)^3 + \dots + CF_n / (1+r)^n$$

NPV = **\$ 41 951,76**. The value is greater than 0. The project might be accepted.

Using internal rate of return (IRR) = 13%, that is greater than discount rate 5%. According to (IRR), the project should be accepted.

The income prediction for the first year of operating will be \$ 53 685,00.

If it turns out that the author will take a loan at 8% for five years with an inflation rate of 5%, then thanks to the formula:

$$[ \$ 200\,000,00 * (0,08 * 1,08^5) / (1,08^5 - 1) ]$$

The annual loan installment equal \$ 50 091,29. The author will calculate the investment evaluation with loan.

Table 21 Investment evaluation

Year	0	1	2	3	4	5	Total
Cash	\$ -						
Total revenue		\$ 141 789,56	\$ 141 789,56	\$ 141 789,56	\$ 141 789,56	\$ 141 789,56	\$ 708 947,80
Capital expenditures	\$ 200 000,00						
Operational costs		\$ 47 328,00	\$ 47 328,00	\$ 47 328,00	\$ 47 328,00	\$ 47 328,00	\$ 236 640,00
Total costs	\$ 200 000,00	\$ 47 328,00	\$ 47 328,00	\$ 47 328,00	\$ 47 328,00	\$ 47 328,00	\$ 436 640,00
CF1	-	\$ 94 461,56	\$ 94 461,56	\$ 94 461,56	\$ 94 461,56	\$ 94 461,56	\$ 472 307,80
External financing	\$ 200 000,00	-	-	-	-	-	
Annual loan installment		\$ 50 091,29	\$ 50 091,29	\$ 50 091,29	\$ 50 091,29	\$ 50 091,29	
CF2		\$ 44 370,27	\$ 44 370,27	\$ 44 370,27	\$ 44 370,27	\$ 44 370,27	
Depreciation		\$ 24 000,00	\$ 24 000,00	\$ 24 000,00	\$ 24 000,00	\$ 24 000,00	
Gross profit		\$ 20 370,27	\$ 20 370,27	\$ 20 370,27	\$ 20 370,27	\$ 20 370,27	
Tax base		\$ 23 626,27	\$ 23 626,27	\$ 23 626,27	\$ 23 626,27	\$ 23 626,27	
Tax 20%		\$ 4 074,05	\$ 4 074,05	\$ 4 074,05	\$ 4 074,05	\$ 4 074,05	
Net profit		\$ 16 296,22	\$ 16 296,22	\$ 16 296,22	\$ 16 296,22	\$ 16 296,22	
CF3 accumulated		\$ 16 296,22	\$ 32 592,43	\$ 48 888,65	\$ 65 184,86	\$ 81 481,08	
CF4		\$ 15 520,21	\$ 29 562,30	\$ 42 231,85	\$ 53 627,75	\$ 63 842,56	

Source: Author

#### 4.4 SWOT analysis

Table 22 SWOT analysis

Strengths	Weaknesses
<ol style="list-style-type: none"> <li>1. The car wash market is not very developed.</li> <li>2. The absence of dissatisfaction.</li> <li>3. The ability to work under any circumstances (epidemic and so on).</li> <li>4. Works 24/7.</li> <li>5. A high-quality new type of service.</li> </ol>	<ol style="list-style-type: none"> <li>1. The dependence of the project on the choice of location.</li> <li>2. All equipment has the property of breaking down.</li> <li>3. Dependence on the weather.</li> </ol>
Opportunities	Threats
<ol style="list-style-type: none"> <li>1. Create a Brand.</li> <li>2. Lots of inexpensive land.</li> <li>3. Additional services (polishing and so on).</li> </ol>	<ol style="list-style-type: none"> <li>1. Vandalism.</li> <li>2. Flakey suppliers.</li> <li>3. Preferred location will be occupied.</li> <li>4. The emergence of competitors.</li> </ol>

Source: Author

There are only 18 self-service car washes in Dnipro, and because of this, the main Strengths “car wash market is not very developed”. Due to unique offers and lack of conversations with employee Strengths, “the absence of dissatisfaction”. Since the price of land is relatively low, there is an Opportunity to “create a Brand” and “additional services”. The main Weaknesses are “all equipment has a property of breaking down” and “dependence on the weather”. When it rains no one washes their cars. The central Threats is “vandalism”.

## 5 Conclusion

The thesis aimed to create a realistic and clear business plan for the new self-service car wash "Krandless" in Ukraine (Dnipro). The theoretical part's goal was together all relevant information about business planning and found the optimal and robust theoretical framework for the thesis, while the practical part is about using obtained knowledge.

Using the Ash Maurya lean canvas diagram, the author analyses and identifies various aspects of preferred business: the problems, customer segment, solution, unfair advantage, unique value proposition, cost structure, channels, key metrics. Thanks to this, the author identified the most problematic areas of the new business and found solutions to these problems, calculated the cost price, and determined the client's price.

After conducting a SWOT analysis, the author clarifies that the business's greatest strength is that the car wash market is not very developed (in Dnipro). The most significant opportunity is that you can open more and more car washes over time. The main weakness is that equipment has the property of breaking down. Moreover, the main threat is vandalism.

The financial part gives a clear understanding of the figures. The start-up budget is estimated at \$ 200 000,00.

The income prediction for the first year of operating will be \$ 53 685,00 with a break-even point of 55 cars per day and 1 644 cars per one month. The selling price of the most popular service, "cold water and foam", is 50 UAH (\$ 1,8).

The amount of product sold per one day during the first year is 216 cars as an average.

The investment is evaluated using (NPV and IRR) values. The NPV equals \$ 41 951,76 while IRR equals 13%, which means that the project should be accepted.

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