# DEVELOPING AN INCOME STATEMENT PROJECTION FOR A PRODUCT-AS-A-SERVICE STARTUP

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# Management summary

Company-X is a startup developing a fire and theft safe charging solution for e-bike batteries. The CEO plans to bring the system to the market in 2026 and requires funding to accomplish this goal. Potential investors want insight into the company's financial statements, but the current documents contain no historical data or reasoning behind the estimations in it. As the company lacks a financial team, preparing suitable information is complicated. We focus on providing Company-X with knowledge about cost accounting. The research objective is formulated as:

*"To gain financial knowledge by creating a financial statement for Company-X that uses the cost data of 2024 to project cost from 2025 through 2030, allowing the company to present a trustworthy financial statement to potential investors."*

The study is based on quantitative and qualitative research. We use historical cost data of 2024 consisting of quotations, ledgers and contracts for the quantitative research. As part of our qualitative research, we meet with the CEO of the startup and conduct a literature review. The study focuses on the years 2024 to 2030. There is available cost data for 2024, which forms a base for projections for the years 2025 through 2030. The firm assumes 2025 and 2026 as start-up years in which market entry is achieved. By 2027 and 2028, it aims to demonstrate profitability. Although 2029–2030 forecasts are challenging and potentially inaccurate, they are included to show potential outcomes for the company and its investors.

The literature review provides the knowledge for constructing the financial statement and organizing the costs. The statement we create is the income statement. It interests investors most and provides insight into a company's profitability. Company-X has a use-oriented product-as-a-service business model, offering and leasing the use of a product to the client. This business model aligns with the bottom-up costing method, which incorporates a detailed breakdown of all costs. Using the organized cost data of 2024 and the estimated growth rate of the firm from market research, the costs are projected for 2025 to 2030. These predictions form the cost basis of the income statement. The system price determines the revenue, and the firm uses the direct costing method, which only considers the direct costs with a markup of 37.5%. Based on meetings with potential clients, the company knows that the value of using the system for one person is under €6.52 a day. We use the traditional costing method since it is not complex and suitable for companies with less available data and simple production lines. The approach evaluates indirect and direct costs with a markup of 15% to establish a representative system price. The results of both methods are compared to determine how the price relates to the projected cost.

The bottom-up approach and traditional costing method make it possible to construct the income statement. This model represents a detailed overview of the projected costs and the reasoning behind it. A sensitivity analysis is done to validate the risks of the model. This analysis provides insight into the financial results if the cost estimates are inaccurate. We examine how changing input variables affects the results of the income statement. We use seven variables: Direct materials system V2, direct material cost reduction, direct labor hours, indirect costs, growth rate, personnel expenses and annual payment V2 system. This gives the startup and investors a better understanding of the opportunities and risks.

Three conclusions are drawn from this study:

- First, the company risks overestimating their profits, since they do not include indirect costs in the price calculation. For accurate estimation, indirect costs are crucial and prevents the company from being too optimistic.
- Second, the study provides insights into the startup's current income statement compared to the new one. Both statements contain estimated costs, but the rationale behind them in the old model is missing. This lack of reasoning makes it challenging for anyone other than the CEO to understand what the costs are based on. Furthermore, the old statement is based on purchasing contracts instead of the use-oriented business model of the firm, which leads to higher revenue. The absence of arguments and proper revenue renders the old model unclear and misrepresents

the company. On the other hand, the new model provides a comprehensive overview that can be easily adjusted if needed.

- Finally, the assumptions for the model are not made by an expert, and the effect of misestimates of the costs is significant on the financial results. For this reason, we conclude that it is necessary for Company-X to include the expertise of a professional.

The income statement is a good step for Company-X towards a professional financial structure. However, our conclusions indicate there is still room for improvement, specifically for accurate forecasting. Nevertheless, the model provides the basis for investors and the company to project profitability.

# Acknowledgement

Dear reader,

First of all, I want to thank you for reading my thesis. This thesis concludes my bachelor study Industrial Engineering and Management. The study is conducted at a startup focusing on fire and theft safe charging solutions for e-bike batteries that remains unnamed for confidential reasons.

I would like to take this moment to thank everyone who supported me during this process. A special thank you to my company supervisor. It was a pleasure to work together, and your open and positive attitude motivated me on my journey. I want to thank the rest of the company's team for welcoming me into the firm's culture and showing genuine interest in my study.

In addition, I would like to express my gratitude to my first supervisor. Your guidance and supportive attitude helped me get started and approach my work with confidence. Thank you for your time and expertise. I also wish to thank my second supervisor for the time and attention you devoted to my thesis. Your feedback offered valuable insights for my work.

Lastly, I want to thank my friends and family for supporting me during the last couple of months. You motivated me and have given me valuable feedback along the way. I am satisfied with the final result and proud to complete my bachelor study with it.

Enjoy reading!

Kind regards,
Emma Peek

# Table of Contents

# List of Figures

# List of Tables



# List of abbreviations

| | |
|---|---|
| PaaS | Product-as-a-Service |
| MPSM | Managerial Problem-Solving Method |
| P&L | Profit & loss statement / Income statement |
| ABC | Activity-Based Costing |
| PSS | Product-Service System |
| V1 / V2 | Version 1 / Version 2 |
| FTE | Full-time equivalents |

Note: For confidentiality reasons, the company is referred to as Company-X and all monetary amounts are multiplied by a confidential factor.

# 1. INTRODUCTION

This chapter outlines the motivation for the study of this bachelor's thesis. Section 1.1 introduces Company-X, and we describe the problems it experiences in Section 1.2 . Using the gap between reality and the norm in Section 1.3, we determine the firm's core problem in Section 1.4. The problem results in the research objective we aim to achieve in this study.

## 1.1 COMPANY DESCRIPTION

The use of electric bicycles is becoming popular in the Netherlands. Currently, 43% of Dutch people own such a vehicle (Heslenfeld, 2024). According to Rijksdienst voor Ondernemend Nederland (n. d.), the use of speed pedelecs in the Netherlands has grown by over 13.000 from 30 September 2020 to 30 September 2024. Several problems occur when charging the batteries of these vehicles. These batteries are valuable, making them often targets for theft (Politie, 2024; Van der Ploeg, 2024). In addition, charging e-bicycle batteries increases the risk of fire. NOS (2024) mentioned that battery charging caused 5% of domestic fires in 2023. What compounds this problem is that fires caused by batteries are difficult to extinguish. The NOS article highlights the importance of safely charging batteries. Company-X offers a fireproof and theft-proof charging solution to address this issue, providing it as a Product-as-a-Service. The startup leases the system to the client and provides service throughout the contract. After this period, Company-X takes the product back to reuse its parts. They plan to sell Business-to-Business and build their client base in 2025 by conducting several demos of the system. In 2026, they plan to start selling the systems regularly.

## 1.2 PROBLEM IDENTIFICATION

To clearly understand the problem experienced by the firm, we created a problem cluster illustrated in Figure 1. This section outlines the issues we observed during this study.

The main focus of Company-X is on finishing version 2 (V2) of its system to enter the market with it in 2026. To achieve this, it needs to attract investors in 2025. They noticed that correct financial statements are important to build investor confidence. The startup has various models that present its financial results. However, the costs included in the models lack supporting data and clear reasoning. This makes it difficult for individuals outside the company, such as clients or investors, to understand the assumptions underlying the model and how the costs are constructed.

One of the causes of this problem is the lack of a financial team. Due to a lack of focus, the financial records have not been managed or updated for an extended period. The first steps in solving this problem were during research into the cash flows of the firm in the first six months of 2024 (Van Lente, 2024). Due to the limited historical data available at that time, many costs were based on assumptions. However, a year's worth of cost data has now been gathered for 2024, which can be used for more accurate estimates. The lack of knowledge and time capacities stops Company-X from investigating their costs. As a result, the startup misses financial models that align with its business strategy and current costs, hindering its ability to attract investors.

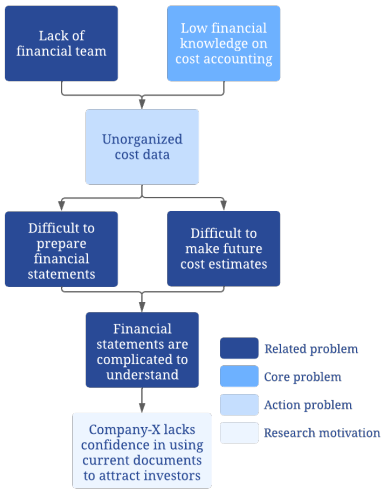


*Figure 1: The problem cluster of Company-X.*

## 1.3 REALITY AND NORM

Company-X's focus has not been on accounting, which has resulted in their cost data not being up to date. With insufficient knowledge of cost accounting, it is challenging to estimate future costs, making it difficult to prepare financial statements. The current statements are prepared without reasoning behind the estimations, making it hard to understand them. As a result, Company-X lacks the confidence to use the documents to attract investors.

Company-X aims to eliminate this reality and has a certain norm they want to achieve. Ideally, Company-X wants an overview of the various costs that is useful when preparing its financial statements and making future estimates. They aim to present their financial documentation to potential investors confidently. The gap between this reality and the norm is what the action problem focuses on.

## 1.4 CORE PROBLEM

The difference between the current and desired situation shows that preparing financial statements with the disorganized available cost data is challenging. The core problem describes an influential cause of this action problem (Heerkens et al., 2017). We define two causes of the action problem: lack of financial team and low financial knowledge. Since we cannot solve the lack of a financial team, we provide Company-X with the financial knowledge they need to organize their cost data and prepare a financial statement.

Therefore, the objective of this research is *"to gain financial knowledge by creating a financial statement for Company-X that uses the cost data of 2024 to project cost from 2025 through 2030, allowing the company to present a trustworthy financial statement to potential investors."*

# 2. RESEARCH APPROACH

This chapter outlines the research design of this study. Section 2.1 explains the Managerial Problem-Solving Method (MPSM) we employ to achieve the research objective. Using the MPSM, we obtain the final deliverables in Section 2.2. Section 2.3 describes the data collection methods, and Section 2.4 describes the study scope. The concluding Section 2.5 addresses how we aim to ensure the validity and reliability of the study.

## 2.1 PROBLEM-SOLVING APPROACH

The Managerial Problem-Solving Method (MPSM) addresses the core problem of Company-X. According to Heerkens et al. (2017), the MPSM consists of seven phases. Phase 3 - problem analysis and Phase 4 - solution generation merge into one phase, as the analysis of this problem already leads to examining the different methods. By combining the phases, we avoid repetition. These phases will serve as the foundation for the research. This section outlines the content of each phase and addresses the subquestions, and the deliverables.

### 2.1.1 Phase 1 – Defining the problem

The first phase of the MPSM introduces the startup and describes the problems they face. The phase explains the gap between Company-X's norm and reality, and the problem cluster helps identify the core problem. With this knowledge, the research objective is constructed. This phase contributes to *Chapter 1: Introduction,* and the following subquestion is answered:

1. What is the core problem that Company-X is facing?
   Deliverable: The core problem is determined from the problem cluster and described in detail.

### 2.1.2 Phase 2 – Formulating the approach

This phase of the MPSM uses the problems found in *Phase 1,* to create the research design of the thesis. We describe the subquestions that must be answered to achieve the research objective and the deliverables. This phase helps define the research scope and discuss possible limitations. We use literature research and meetings with the firm's CEO to receive information for this phase. This phase contributes to *Chapter 2: Research approach* and gives an answer to the principle of D3 (Heerkens et al., 2017).

1. Do: What are all the steps that need to be completed during our research?
2. Discover: What knowledge do we need for our research?
3. Decide: What decisions do we make during our research?

   Deliverable: Descriptive research approach with the methodology, data collection method, scope, limitations, validity and reliability.

### 2.1.3 Phase 3 – Problem analysis / Phase 4 – Solution generation

The problem analysis and solution generation phase gain knowledge about the problem we identified in *Phase 1*. During this phase, we dive into the current situation of Company-X by having meetings with the CEO and using the company data. We use scientific literature to collect relevant theories for the study. This phase contributes to *Chapter 3: Theoretical framework.* The following subquestions are answered:

3. Which financial statement is most valuable for investors to review?
   Deliverable: Explanation of the choice of financial statement on which to focus during the study.

4. How can we prepare the financial statement chosen in Question 3?
   a. What costing methods are used for products-as-a-service?

b. What different cost allocation methods are often used in literature and what are their strengths and weaknesses?

Deliverable: A literature study on the financial statement chosen in Question 3 and what methods are most used for companies focused on PaaS.

#### 2.1.4 Phase 5 – Solution choice

*Phase 3 / Phase 4* explore different options for building the model. This phase draws conclusions regarding which possibilities align best with Company-X and is utilized in the research. This step answers the same question as *Phase 3 / Phase 4*, but with a special focus on the startup characteristics. This phase will contribute to *Section 3.3: Theory in practice* and answers the subquestion:

5. How can we prepare the financial statement chosen in Question 3 for Company-X?
   Deliverable: Analysis of the literature and the situation of Company-X to choose the construction of the financial statement, costing model and cost allocation model used in this study.

#### 2.1.5 Phase 6 – Solution implementation

This phase implements the solution we chose in Question 5 and prepares the financial statement using the costing and allocation models. This phase contributes to *Chapter 4: The income statement model* of the thesis, and the following research question is answered:

6. How can we apply the selected theories from Phase 5 for Company-X to prepare the financial statement discussed in Question 3?
   Deliverable: A description of how we use the theories in practice for Company-X.

#### 2.1.6 Phase 7 – Solution evaluation

This phase evaluates the implementation of the financial model from Phase 6 in two ways. The first way is that this phase describes the difference between the current financial model and the model we have prepared. This allows us to assess the suitability of the model. It also gives us insights into the frameworks in which the model is usable. This evaluation contributes to *Section 4.5: Summary* and the following subquestion is answered:

7. How does Company-X's current model compare to the newly constructed model that uses theories found in Phase 3?
   Deliverable: An analysis of the differences between the current and new financial model and the frameworks in which the model is functional.

In addition to the model, we perform a sensitivity analysis that provides Company-X and investors with insight into how misjudgments of estimates affect the model results. We assess whether the analysis can be utilized within our model framework. This phase contributes to Chapter 5: Sensitivity Analysis and answers the following subquestion:

8. How can sensitivity analysis be used as an addition to the financial model?
   Deliverable: An analysis of the usefulness and limitations of the sensitivity analysis for the firm and investors.

## 2.2 FINAL DELIVERABLES

Based on the research objective, we aim to provide the following final deliverables:

- A financial statement model that is prepared using the proper costing method and cost allocation method. This model is useable for Company-X when attracting investors.
- A financial statement model on paper that explains the rationale behind its construction and the contexts in which the model proves useful

## 2.3 DATA COLLECTION METHODS

We use qualitative and quantitative methods to gather data and knowledge during this study. This section describes how we use these methods.

We conduct a literature review to gain knowledge about costing methods, cost allocation methods and how to prepare financial statements. We use several databases: Business Source Complete, Scopus, and Google Scholar. These data form the theoretical basis of the study and contribute to designing the model. In addition, meetings with the CEO of the company are conducted to gain knowledge about their current financial statements. The meetings provide information about cost forecasting for the model.

On the quantitative side, we analyze the current data available from Company-X. Currently, the startup lacks a convenient digital location to organize its cost data. In 2024, Company-X received quarterly reviewed ledgers from its accountant, which we use in this study. In addition, the firm already prepared various financial statements, and we examine the data in it. The data is compared with available quotations, receipts and bank statements to determine whether they are correct. Combining both qualitative and quantitative methods provides us with a validated view for preparing the financial statement model for Company-X.

## 2.4 RESEARCH SCOPE

We define the scope of the study and the financial statement model. This section describes the choices we make.

The study begins with historical cost data that have not been researched previously. These data must be organized to be useful for preparing financial documents. The goal is to provide Company-X with insight into these costs and deliver a usable model. We want to deliver a complete model and therefore choose to focus on constructing one financial statement. The choice of which financial statement we choose depends on which one offers the most value to investors.

The study researches the costs of a startup, which does not have a lot of historical data. We are scoping the data in the model to the data we receive from Company-X. This is the available ledger from 2024, as well as contracts, quotations, and old financial models.

The model provides a projection of Company-X costs over several years. We choose to build the model from 2025 through 2030. The year 2024 is added, which reflects actual costs. The startup sees 2025 and 2026 as start-up years where they enter the market and build a client base. Years 2027 and 2028 are the make-or-break years where they want to achieve positive results. Estimating costs for 2029 and 2030 is most uncertain, but the firm wishes to include them so that projected results can also be observed after the make-or-break years.

## 2.5 VALIDITY AND RELIABILITY

In this section, we describe which measures we take to ensure validity and reliability of the study. According to Heerkens et al. (2017), research is considered reliable when repeating the study at a different time yields the same results. To ensure the reliability of our research, we clearly explain the choices for the methods. Furthermore, we identify the data we use for the model as outlined in the research scope.

According to Heerkens et al. (2017), the validity of our research relates to whether the constructs are measured as they were intended. We distinguish three types: internal validity, external validity and construct validity. Internal validity “is concerned with whether the research design and your measuring instruments have been properly formulated and constructed” (Heerkens et al., 2017). To ensure internal validity, we examine different costing methods and compare them with the characteristics of Company-X. This allows us to choose the right method for the firm.

External validity is concerned with the question “to what extent can you apply your research to other groups than your research population” (Heerkens et al., 2017). The study describes the method of preparing a financial statement for a PaaS startup. Since the research is focused on a company with a specific business model, this could pose problems for external validity. By properly arguing all the theories and characteristics, it might be possible for external studies to apply the research to their relevant business models.

Construct validity concerns whether the concepts used in the study “have been properly operationalised, logically related and, where possible, based on available scientific knowledge” (Heerkens et al., 2017). We explain the concepts we use in the study to ensure construct validity. The cost categories used for the cost organization are described, making it possible for others to understand what costs are part of them.

# 3. THEORETICAL FRAMEWORK AND CURRENT COMPANY SITUATION

This section allows us to determine the appropriate theories for Company-X. Section 3.1 describes the current situation of Company-X. In Section 3.2, literature research on preparing a financial statement for investors, different costing methods for companies with a product-as-a-service focus and cost allocation methods are examined. In Section 3.3, we use the current situation of Company-X to choose the appropriate theories for the study.

## 3.1 CURRENT SITUATION OF COMPANY-X

This section outlines the current situation of Company-X concerning its financial statements and the rationale behind them. It reflects the uncertainties we address in this study.

Company-X's business model is to offer the V2 system as a service. The client leases the system, and the firm provides support throughout the contract. The client enters a five-year contract with annual payments. This business model lets Company-X establish a long-term relationship with clients and builds the client base. In addition, they retain ownership of the system, allowing them to use the systems circularly and immediately redeploy them after the contract expires.

The startup has projected an income statement, balance sheet, and cash flow statement from 2025 to 2027. The costs directly associated with constructing the system have been reasonably well estimated by Company-X through the drafted contract and the development of the V1 system. However, the costs unrelated to system construction are now estimated with limited historical data, resulting in uncertainty regarding their accuracy. As the current financial documents do not provide details regarding the accumulation of costs, it is difficult to verify those costs. Additionally, the documents do not utilize a PaaS contract. Instead, they employ purchase contracts in which the client acquires the system without receiving any service. The current documents do not consider Company-X's business model, which makes the results unrepresentative of the future.

The current PaaS contracts reflect a price considering the cost of building the system, with a markup of 37.5%. The markup has no proper justification, and the indirect costs of operations are not considered when setting the price. This makes it uncertain whether the current price is a good representation of the startups costs. Company-X meets with several lead clients to clarify their thoughts on the current pricing and the value they assign to the system.

In summary, Company-X's current financial documents do not align with the company's business model. The cost data used are uncertain and challenging to ascertain. Additionally, the current price for the PaaS contract is unclear, and we cannot determine if it accurately reflects the actual cost.

## 3.2 LITERATURE REVIEW

This section outlines several theories that support the study. The primary focus is to create the most suitable financial document for investors. To support this, we examine which costing model is the most suitable for companies that focus on a product-as-a-service approach. To investigate the pricing model of Company-X, several assignment methods are examined. This section establishes the foundation for choosing appropriate methods that align with Company-X's current situation.

### 3.2.1 Financial documentation for investors

The three principal financial statements are the cash flow statement, balance sheet, and income statement. According to Fields, (2016) the balance sheet shows the company's assets at a specific moment, the cash flow statement illustrates cashflows over a period, and the income statement, often called the profit and loss statement (P&L), reflects the profitability over time. Investors consider the combination of all three statements important. The article by Yap (1997) investigates whether the cash flow statement could replace the income statement and balance sheet. The article indicates that investors

still regard these two statements as more important. Blessing and Onoja (2015) highlight the importance of combining the three statements. However, investors are often most interested in a company's profitability. These articles suggest that preparing a reliable income statement holds the most value for investors. This assumption is confirmed in the study by Cascino et al. (2016), which concludes investors estimate the income statement to be more relevant and reliable. Vergoossen (1993) focuses specifically on Dutch investors and reaches the same conclusion. While investors regard the combination of the three statements as the most valuable, we focus on just one type of financial statement due to the research time constraints. The literature suggests that the income statement is the most important for many investors. Therefore, we focus on the income statement in this study.

### 3.2.2 Construction of the income statement

The income statement can be prepared using different methods, which differ in the level of detail and information it provides. Lessambo (2022) distinguishes between the single-step and multi-step methods for constructing the income statement, illustrated in Figure 2. The difference is in the comprehensive information the structure provides. The single-step method combines all revenues and subtracts all expenses to calculate the net income. Calculating the gross profit is not possible, and it gives no insight into what expenses are directly associated with sales. The multi-step statement divides the income statement into more components. The expenses are categorised into direct costs associated with selling the product or service, referred to as the cost of goods sold. An example includes the direct materials used to manufacture the product. The other expenses are the costs incurred for general operations, which are not directly linked to selling a product or service. An example of indirect costs is the marketing costs of the company. The choice of method depends on the level of information required from the model. Both methods require cost data to prepare the income statement. The approach to organize the cost data depends on the business model of the company. The next section explores this in more detail.

| **Single-step method** | | **Multi-step method** | |
|---|---|---|---|
| Revenue | | Revenue | A |
| Expenses | - | Cost of goods sold | B |
| Income before taxes | | Gross profit | C = A - B |
| | | Operating expenses | D |
| | | Operating income | E = C - D |
| | | Finance costs | F |
| | | Income before taxes | G = E - F |

*Figure 2: Construction of P&L using single-step and multi-step method (Lessambo, 2022).*

### 3.2.3 Servitization and cost organization

To determine which method is most suitable for the cost data of this study, we focus on the business model of Company-X. Rabetino et al. (2018) describe the introduction of "servitization" in the early 2000s. Servitization means that a service is offered to the client in addition to delivering products. This provides new benefits for the client, but servitization also advantages the company. By offering both a product and an associated service, the firm can stay ahead of the competition. Companies build a loyal client base because of the unique combination that has value for the client. In literature, the term Product Service-System (PSS) is used for Product-as-a-Service. "*A PSS can be thought of as a market proposition that extends the traditional functionality of a product by incorporating additional services*" (Baines et al., 2007, p. 1). Three categories of PSS are distinguished: product-oriented services, use-oriented services and result-oriented services. Product-oriented service is most focused on creating value using a product. The company focuses on selling the product but adds little value by tying a service to it. Use-oriented service is the shared focus on the product and the service. The company does not sell

the product but rather the service that can be provided. The last category is result-oriented service. This form does not sell a product or service but the service's result. This form is closest to the full-service focus (Baines et al., 2007; Reim et al., 2015; Tukker, 2004). Each category of PSS has its preferred costing model, shown in Figure 3 according to Datta and Roy (2010). The costing model determines how the costs are organized, which we further explain in Section 3.3.

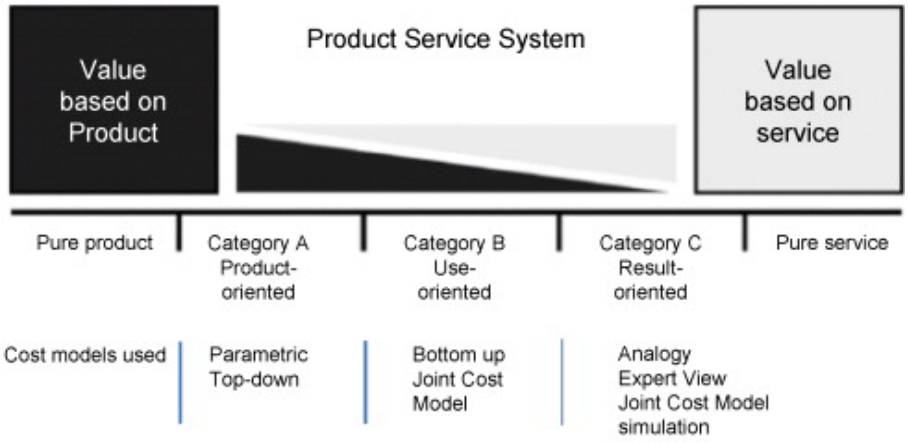


*Figure 3: Categories and cost models of product service-systems (Datta & Roy, 2010).*

### 3.2.4 Revenue determination

The first component of the income statement is the revenue. The revenue is determined by the lease price, which is built on the costs of the system. Cost assigning "*measures, analyzes, and reports financial and nonfinancial information relating to the costs of acquiring or using resources in an organization*" (Horngren et al., 2012). It consists of 'cost tracing' and 'cost allocation', where the difference is determined by the type of costs they assign to a cost object (see Figure 4). The cost object is "*anything for which a measurement of cost is desired*" (Perčević & Hladika, 2016). Cost tracing assigns direct costs to the cost object, and cost allocation assigns indirect costs to the cost object. The indirect costs must be allocated across the entire production, as they cannot be attributed to a single product (Manea & Barbu, 2012). The indirect costs are allocated using a cost allocation base, which is "*the factor that links in a systematic way an indirect cost (or group of indirect cost) to a particular cost object*" (Perčević & Hladika, 2016). We use cost assignment methods to determine the price. Various assignment methods exist, which allocate costs differently and consequently lead to varying prices or markups. It is important to consider the choice based on the characteristics of the company (Perčević & Hladika, 2016).

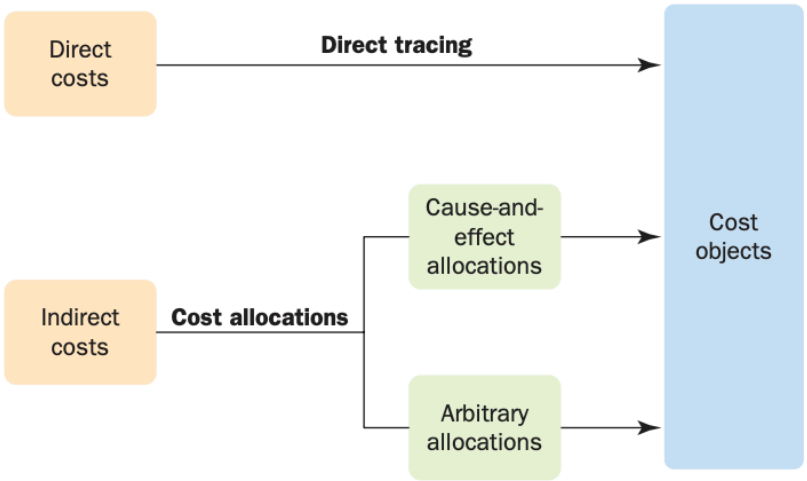


*Figure 4: Distribution of cost assignment (Drury, 2018).*

### 3.2.5 Cost assignment methods

Choosing the appropriate method is important for accurate financial documentation. According to Hongren et al. (2012), direct and absorption costing systems are the most common costing methods for manufacturing companies. Figure 4 illustrates the division of the absorption costing system into cause-and-effect allocation and arbitrary allocation. The traditional costing method uses an arbitrary allocation method, dividing the indirect costs by one allocation base. In contrast, the activity-based costing (ABC) method allocates the costs using a cause-and-effect allocation, where indirect costs are apportioned using more allocation bases (Drury, 2018). To provide Company-X with a common method for manufacture companies, we review these three: *direct costing, traditional costing and activity-based costing*, which focus on assigning costs to the cost objective to determine the price. This provides us with an alternative perspective, we review the target costing method, which concentrates on establishing costs based on predetermined prices (Musa & Ibrahim, 2023). This section highlights their advantages and disadvantages.

**Direct costing**

Direct costing, sometimes called variable costing, only assigns the variable costs to the cost object. The fixed costs of manufacturing are not taken into account (Noreen et al., 2018). According to Fremgen (1964), excluding indirect costs poses the risk that the price might not cover all costs. However, separating the costs makes it possible to compare the ratio of direct profit to sales. The direct costing method is questionable for external reporting since the latter also requires fixed costs (Richardson, 1966). We define the advantage and disadvantages of direct costing.

*Advantage:*

- The method is easy to use, because it only assigns the direct costs.

*Disadvantages:*

- The method does not consider indirect costs, leading to underestimated pricing.
- Is not useful for generally accepted external reporting.

**Traditional costing**

Unlike direct costing, absorption costing methods do consider fixed and variable costs. This method assigns all costs to production (Noreen et al., 2018). The first method is the traditional costing method, which follows an arbitrary allocation. This method is a relatively straightforward and quick way to allocate costs. This is because traditional costing employs a single cost allocation base, meaning all costs are assigned to the cost object using one factor. However, it is only relevant when the company offers products or services without much diversity (Chiang, 2013; Nurcombe & Akin, 2024). The traditional costing method becomes less effective when processes within the company become more automated. This is due to the changing relationship between indirect manufacturing costs and direct labor costs (Perčević & Hladika, 2016). We summarize the advantages and disadvantages of the traditional costing method:

*Advantages:*

- The method is easy to use and not time-consuming.
- Includes both indirect and direct costs, thereby offering a more complete price.

*Disadvantages:*

- The method is becoming less relevant due to rapid automation within companies.
- Challenging to use within companies with large product diversity.

**Activity-based costing**

The second absorption costing method is activity-based costing, which we classify as a cause-and-effect allocation. This method allocates the indirect costs not to one cost object but to all the activities the company performs to produce the product. This allows for a more accurate distribution of the costs to the product for which they are incurred. However, the more specific breakdown of costs requires more time and attention (Meade et al., 2008). An advantage of the method is that it ensures better strategic decisions (Mishra & Vaysman, 2001). However, it is not often used by small-medium enterprises due

to their insufficient data. Implementing the method is complicated and requires considerable time and financial resources (Nurcombe & Akin, 2024).
Bharara and Lee (1996) present the steps for using the ABC method. The goal, scope and activities must be defined clearly. Involving relevant employees is important to ensure good results and processes. All company costs must be categorized into groups based on the determined activities. The indirect costs are allocated based on different cost allocation bases per category. We summarize several advantages and disadvantages of activity-based costing:
*Advantages:*

- Allocates the indirect costs in more detail, ensuring more accurate pricing.
- Due to its detail, the method is more useful for decision making.

*Disadvantages:*

- The method requires a lot of data.
- The method is time-consuming and complex.

**Target costing**
Target costing works from another point of view. First, the desired price and the profit are determined based on competitors and clients. This determines the desired costs to which the company should adhere (Musa & Ibrahim, 2023). Target costing can be applied well in the initial business phase as the product is developed (Ax et al., 2008). This pricing strategy is effective for companies whose prices are market dependent. It motivates companies to further develop their products through new techniques or redesigns (Perčević & Hladika, 2016). We summarize the advantages and disadvantages of target costing:
*Advantages:*

- The price is determined based on the market, ensuring alignment with the competition.
- A useful method for startups in the product-development phase.

*Disadvantage:*

- Many prices/margins must be predicted, making the model error prone.
- The determined cost price may be too optimistic for the company to follow.

We determine from the literature to create an income statement considering its relevance to investors. Furthermore, we defined the company's business model as use-oriented, focusing on offering a service rather than a product. In addition, we discussed four different cost assignment methods, direct costing, traditional costing, ABC and target costing, and analyzed their advantages and disadvantages. With this knowledge, we will choose the appropriate methods for Company-X in the next section.

## 3.3 THEORY IN PRACTICE

We use the literature review in Section 3.2 to select the most suitable methods for the current situation of Company-X. These choices are analyzed in this section.

As mentioned in Section 3.2.2, we can use the single-step or multi-step method to construct the income statement. Company-X wants to attract investors with the income statement. To provide them and their potential investors with detailed information about the profitability and costs, we use the multi-step method for constructing the P&L.

We organize the costs of Company-X using a costing model suitable to the startup's business model. They lease their system to the client, enabling the client to use the system's service. The firm retains ownership of the system and ensures a working system. This aligns with the use-oriented PSS category. Datta and Roy (2010) describe the bottom-up and joint cost models as common methods for the use-oriented PSS. The joint cost model determines costs based on multiple stakeholders involved in the lease. For example, the clients and the suppliers. This allows costs to be considered and determined from multiple perspectives. In the bottom-up method, costs are built up from individual activities or components. All direct and indirect costs are determined and aggregated into a business process category, such as marketing. This provides a detailed overview. Company-X is expanding its client base and currently has few stakeholders, motivating us to adopt a bottom-up approach to organize the costs with more detail.

We build the P&L according to the format introduced in the article of Lessambo (2022), illustrated in Figure 5. The first component of the model is the revenue (A). The system price determines the revenue, which we determine in Section 4.3. Currently, Company-X follows a direct costing method structure since it only assigns the direct costs. Section 3.2.5 shows the advantages and disadvantages of different costing models, and we conclude that the traditional costing method is the most suitable for Company-X. The ABC method would be most suitable in a situation of much diversity and automated production lines. However, this is not the case, and with the limited time and available cost data, the method would be too complex. Furthermore, we aim to provide the firm with an accurate system price that is suitable for financial documentation. We consider direct costing inappropriate due to the limitation of only direct costs. Target costing follows a top-down approach by determining the costs based on the price. This approach contradicts the costing models best for the use-oriented business model of Company-X. As a result, we use the traditional costing method to determine the price.

Gross profit (C) represents the direct costs (B) of selling the system minus the revenue. Company-X referred to the cost of goods sold in their current income statement. We rename this to cost of leased systems to reflect the incurred costs of leased systems rather than goods sold. We subtract the operating expenses (D) from the gross profit to calculate the operating income (E). The operating expenses are the indirect costs of leasing the systems. Under GAAP standards, the P&L is typically constructed with selling, marketing, and administrative expenses classified as operating expenses (Libby & Emett, 2014). However, Company-X would like insight into the specific cost of their overhead. Therefore, operating expenses in this study model are divided into more categories. Income before taxes (G) results from subtracting all finance costs (F), including interest loan and bank fees, from operating income. These components form the structure of the income statement in this study.

**Multi-step method**

| | |
|---|---|
| Revenue | A |
| Cost of leased systems | B |
| Gross profit | C = A - B |
| Operating expenses | D |
| Operating income | E = C - D |
| Finance costs | F |
| Income before taxes | G = E - F |

*Figure 5: Construction of the P&L model of Company-X (Lessambo, 2022).*

### 3.3.1 Conclusion

We integrated the existing theories on financial documentation with the situation of Company-X. As the startup focuses on attracting investors, we prepare an income statement since the latter is described in the literature as the most relevant. It is constructed using the bottom-up method to provide Company-X with a detailed overview of all costs. To determine the revenue, we utilize the traditional costing method to establish the system price for a PaaS contract. This method is suitable as it allocates direct and indirect costs while remaining relatively straightforward. These methods form the foundation of this study and are used in the following chapter to construct the model.

# 4. THE INCOME STATEMENT MODEL

This chapter uses the methods chosen in Chapter 3 to construct the income statement. Section 4.1 describes the direct and indirect costs of Company-X and the insights gained from the cost organization for the model. In Section 4.2, we formulate our assumptions for the income statement model to make it realistic and useable for Company-X. We determine the system price using the traditional costing method with a markup in Section 4.3 to ascertain the revenue. The determined price is compared with the current price of the contract. In Section 4.4, we finalize the income statement and discuss the model's scope. Section 4.5 gives a conclusion of the chapter. All costs discussed in this chapter are multiplied by a factor for confidentiality reasons.

## 4.1 COSTING MODEL

Using historical data and meetings with the CEO of Company-X, we structured the direct and indirect costs. The organized data are required for the multi-step income statement and pricing of the PaaS contract. This section provides insights into these costs.

### 4.1.1 Direct costs

We distinguish seven categories for the direct system costs: direct materials, direct labor, financial lease, maintenance, service, insurance and transport, installation & setup. Table 1 illustrates the direct cost categories with respective costs. These costs are directly assignable to the lease of a single system.

*Direct material costs:*
All costs incurred to manufacture the system are classified as direct material costs. The bill of material of Company-X adds up all individual parts to the total direct material cost.

*Direct labor costs:*
All costs related to the labor hours that are required for manufacturing the system are classified as direct labor costs.

*Financial lease costs:*
Following the cash flow study of Van Lente (2024), Company-X enters a finance lease for every system. This pre-finances the direct material and direct labor costs with a margin on top. The financial lease is repaid in five instalments along with an interest rate.

*Service and maintenance costs:*
Company-X performs preventive and corrective maintenance. We distinguish this into service and maintenance. The service is preventive maintenance that is performed every year. Maintenance is corrective maintenance that we estimate during the contract period.

*Insurance costs:*
Since the system remains the property of Company-X, they take out residence insurance when the system is placed with the client.

*Transport, Installation & Setup costs:*
Costs occur for transporting, installing, and setting up the system when a system is placed at the client's location. These costs are directly assigned to a single system. The transportation, installation & setup costs are one-time costs paid in the first year of the contract.

| Direct costs € / System / Year | |
|---|---|
| **Direct material** | €34,338 |
| **Direct labor** | €11,410 |
| **Service** | €2,967 |
| **Maintenance** | €1,655 |
| **Insurance** | €1,499 |
| **Financial lease** | €2,981 |
| **Transport, installation & setup** | €2,962 |
| **Total** | €57,812 |

*Table 1: Direct costs in € per system per year (confidentiality factor used).*

***Obtained insights:***
In the current P&L of Company-X, the maintenance and service costs are added to one category. We separated them because the maintenance costs are not standard recurring costs. Service costs are annual checks at the client's location, while maintenance is significant repairs or replacements. The probability of occurrence during the contract period is estimated on probability. We split these costs to see the difference.

The assembly location rent is part of the transport, installation & setup costs in the current model. We exclude this from this category as we cannot directly trace the assembly location costs to a specific system. The assembly location not only serves for manufacturing and storing the systems but also supports general work, making it an indirect cost.

We critically reviewed all costs in the current model with the CEO of Company-X. We conclude that the costs are accurately constructed, aside from adding maintenance as a separate category and excluding assembly rent. However, the costs for direct materials were not up to date. This affects the maintenance, insurance, financial lease, and transportation, installation & setup costs, as they are based on the direct material costs.

### 4.1.2 Indirect costs

The indirect costs are not directly assignable to the lease of a single system. In the case of Company-X, we distinguish seven categories: Marketing, sales, software licenses, rent & utilities, general & administration, research & development and personnel expenses. The indirect costs of 2024 are determined with available ledgers, quotations and invoices. The indirect costs for the following years are projected using the estimated full-time equivalents (FTEs) determined by Company-X. The projections by category per year are visible in Figure 6. The cumulative indirect costs per category for the years 2025 through 2030 are illustrated in Table 2.

*Marketing*:
All costs incurred to acquire potential clients are classified as marketing. These refer to clients unfamiliar with Company-X and convert into lead clients using these costs.

*Sales:*
Sales costs are all costs incurred to turn lead clients into paying clients. We chose to separate marketing and sales to give the startup more insight into the ratio between their sales and marketing and the expected revenue.

*Software Licences:*

Company-X uses certain software licenses for general business operations. We have decided to assign the licences used for marketing and sales purposes to their appropriate categories, ensuring that these categories reflect reality more accurately.

*Rent & Utilities:*
The firm rents an office and an assembly location. The general employees work in the office, while the systems are built at the assembly location. We categorize the assembly location costs as indirect costs since the location is also utilized for other purposes, and we cannot directly allocate the costs to a specific system.

*General & Administration:*
All other costs incurred for general business operations are part of the general and administration category. We cannot assign these costs directly to the production of a single system. For instance, recruitment costs are included. These costs are incurred to recruit and hire new employees at Company-X. Such costs contribute not directly to a system, but to the overall operations of the business.

*Research & Development:*
Company-X incurs costs to develop the company and the V2 system. These costs include certification, pilot/testing, external development, product optimization, and R&D licenses. In 2025 and 2028 the firm invests in certification of the system, resulting in two peaks in Figure 6.

*Personnel*:
Company-X employs personnel not associated with the direct labor. These employees are engaged in general business operations. We categorize these employees into four groups: General, Commerce, Product, and Operations.

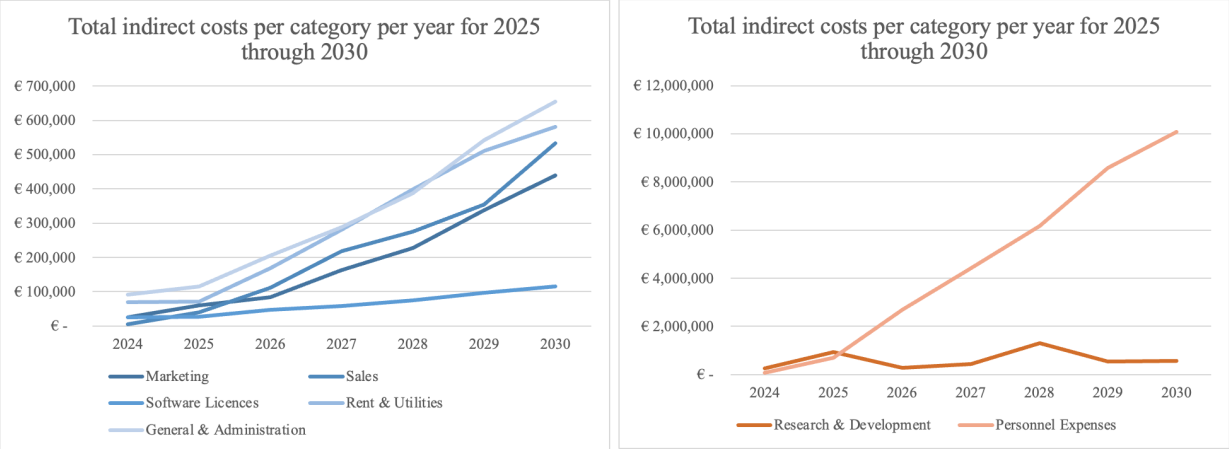


*Figure 6: Total indirect costs per category per year in € (confidentiality factor used).*

| Cumulative indirect costs of years 2024 through 2030 in € | |
|---|---|
| **Marketing** | €1,339,466 |
| **Sales** | €1,539,383 |
| **Software licenses** | €446,518 |
| **Rent & utilities** | €2,082,393 |
| **General & administration** | €2,286,505 |
| **Research & development** | €4,345,623 |
| **Personnel expenses** | €32,777,833 |
| **Total** | €44,817,721 |

*Table 2: Total indirect costs of Company-X in € for 2024-2030 (confidentiality factor used).*

***Obtained insights**:*
In the current model of Company-X, they only used category marketing. We separate marketing and sales to give Company-X more insight into the ratio between their sales and marketing and the expected revenue. The marketing costs are associated with converting unknowing clients into lead clients. The sales costs are associated with converting the lead clients into paying clients.

The costs estimated now are much higher than estimated in the current model. Table 3 shows the percentage difference between the growth rate and indirect costs from Company-X's current model and the estimated costs during this study. Although the growth rate is fairly similar, the indirect costs indicate extreme differences. During the study, Company-X found out that some licenses are no longer used but are still paid for. We can conclude that Company-X has a poor understanding of its current costs and that they are extremely underestimated.

The analysis of indirect costs showed that current indirect costs are underestimated. This study's marketing and sales costs are higher than expected. The costs in the current model have been established without reference to actual costs and have little relation to the expected growth of Company-X.

| | 2025 | 2026 | 2027 |
|---|---|---|---|
| **# of systems produced** | 0% | 2% | 13% |
| **Marketing/sales** | 785% | 808% | 876% |
| **Software licenses** | -6% | 15% | -12% |
| **Rent & utilities** | -10% | 62% | 69% |
| **Personnel** | 113% | 268% | 217% |
| **Total indirect costs** | 110% | 247% | 211% |

*Table 3: Percentage difference between indirect costs in current P&L of Company-X and estimated indirect costs in this study.*

The direct and indirect costs are used to prepare the income statement. The following section explains our assumptions for the model and how the system price is set up.

## 4.2 ASSUMPTIONS FOR THE INCOME STATEMENT

As Company-X lacks historical data before 2024, we make several assumptions to forecast costs for the coming years. The results of the model are determined by these assumptions, which we discuss in this section.

*Contract:*
It is possible to enter a five-year contract with a system with 7 to 15 boxes. By default, Company-X offers a system with 13 boxes. We assume this is the case for all closed PaaS contracts. This assumption affects the determined price and ensures that each concluded contract has the same annual payment. In addition, after five years, an unsatisfied customer will probably not extend their contract. In this case, the system can be transferred to another client that conducts a contract. Considering this, we assume the count of active contracts stays constant and grows annually because of newly conducted contracts.

*Trial to long-term contract:*
Company-X hold five V1 system trials of six-weeks in 2025. We assume all trial clients enter a long-term contract in the same year. As a result, the clients pay the trial price and the first annual contract payment that year. These clients are guaranteed a V2 system within 6-12 months. All V1 systems are replaced with a V2 system in 2026. These assumptions affect the revenue of 2025 and the cost of leased systems of 2026 in the P&L.

*Direct materials and labor:*
The startup expects a decrease in the direct material and labor costs due to the investment in R&D. The assumption is that the direct material costs decrease from 2026 by 10% each year. The direct labor hours decrease incrementally, as shown in Table 4. These assumptions determine the cost of leased systems in the model and the constructed price.

| Year | Hours |
|---|---|
| 2024 | 120 |
| 2025 | 80 |
| 2026 | 60 |
| 2027 | 50 |
| 2028 | 40 |
| 2029 | 35 |
| 2030 | 30 |

*Table 4: Estimated direct labor hours per year.*

*Growth rate:*
Company-X prepared the growth forecast of the production of V2 systems for the years 2024 to 2030. The research of Van Lente (2024) predicts the growth of Company-X according to an s-curve. Company-X estimated the updated expected growth rate of the production of V2 system based on a market analysis they performed in Q4 of 2024. Figure 7 illustrates the monthly production rate of the V2 systems and the cumulative production per month for 2025 to 2030 as they predicted. The assumption of growth assists in projecting the costs and revenue for each respective year, used in the P&L.

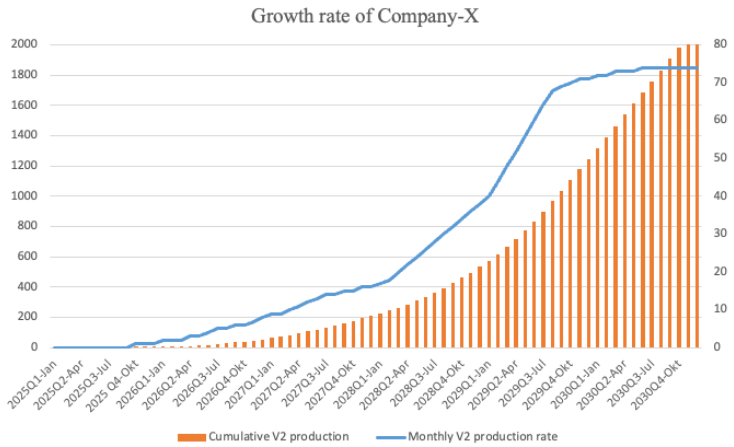


*Figure 7: Monthly growth rate of the production of V2 systems of Company-X for 2025 to 2030.*

## 4.3 PRICING METHOD

The traditional costing method sets the desired price for the system to establish the revenue of the model. This section describes how we use the value-based pricing method to determine the client's annual payment. The new price is compared to the current price used by Company-X.

### 4.3.1 Traditional cost allocation

We use the traditional costing method to allocate indirect costs. Company-X operates with a single production line. All costs incurred are associated with this production, so we use the production rate of V2 systems as the cost allocation base. The indirect costs are projected using the available cost data of 2024 and estimated production growth and full-time equivalents (FTEs). During the first two years, Company-X is investing in R&D, but growth results from this are not expected until 2026. To establish a price that reflects these invested costs and the associated produced systems, we utilize the average expected costs from 2024 to 2028 for price determination. In consultation with the CEO of Company-X, we do include the costs until 2028 because of uncertainty about the estimations after that year. The accumulated expected systems produced from 2024 to 2028 is 535. The indirect costs for each category per system can be calculated as follows:

$$Total\ indirect\ costs\ per\ category\ per\ year\ per\ system = \frac{Total\ indirect\ costs\ per\ category\ of\ 2024\ to\ 2028}{535 * 5\ years}$$

The allocated costs per year per system produced determine the system price, see Table 5.

| Indirect costs | € / System / Year |
|---|---|
| **Marketing** | €210 |
| **Sales** | €243 |
| **Software licenses** | €88 |
| **Rent & utilities** | €370 |
| **General & administration** | €407 |
| **Research & development** | €1,206 |
| **Personnel expenses** | €5,270 |
| **Total** | €7,795 |

*Table 5: Allocated indirect costs in € per system per year (confidentiality factor used).*

### 4.3.2 System pricing

Company-X is a newcomer to the market with its system. The firm explores the system's value for potential clients in sales meetings. From these conversations, it became evident that Company-X wants to maintain the daily price of using one system box below €6.52. With this insight, we utilize the value-based pricing method. The price is based on the value the system gives to the client (Hinterhuber, 2008). A price with a 15% markup remains of value to the clients.

Figure 8 illustrates how we construct the annual payment. We combine direct and indirect costs per system to determine the system's total cost. This calculation excludes financial lease and transport, installation & setup costs. We apply a markup of 15% to the total costs. Along with the financial lease costs, we calculate the annual payment for the system to be €29,187.

| Annual system lease payment | | | |
|---|---|---|---|
| | Service costs | € | 2,967 |
| | Maintenance costs | € | 1,655 |
| | Insurance costs | € | 1,499 |
| | Indirect costs without profit margin | € | 7,795 |
| Costs without profit margin | | € | 13,916 |
| | Cost-plus pricing | € | 16,003 |
| | Financial lease with profit margin | € | 13,184 |
| **Annual payment per system with profit margin** | | **€** | **29,187** |

*Figure 8: Annual system payment calculation with a profit margin of 15% (confidentiality factor used).*

The transportation, installation and setup costs are combined with the markup of 15%. This leads to the one-time payment of €3,406 the client pays in the first year, see Figure 9.

| One-time payment | | | |
|---|---|---|---|
| | Transportation, installation & setup costs | € | 2,962 |
| **Transportation, installation & setup costs with profit margin** | | **€** | **3,406** |

*Figure 9: One-time payment calculation with a profit margin of 15% (confidentiality factor used).*

The annual payment and one-time payment combined are used to establish the PaaS contract for clients. The client pays the annual system payment plus the one-time transportation, installation & setup charges in the first year. The client pays only the annual lease price for the next four years, illustrated in Figure 10. We compare the proposed price with Company-X's current price to determine the differences.

| System with **13** boxes for a period of **5 years** | | **Product-as-a-Service** Fully Operational Lease |
|---|---|---|
| Annual system lease payment | € | 29,187 |
| | | |
| Transportation, Installation and Setup Costs (one-time) | € | 3,406 |
| | | |
| Year 1 | € | 32,593 |
| Year 2 | € | 29,187 |
| Year 3 | € | 29,187 |
| Year 4 | € | 29,187 |
| Year 5 | € | 29,187 |
| | | |
| **Total Contract Value** | **€** | **149,341** |
| | *€* | *6.29* |

*Figure 10: PaaS contract of Company-X using determined annual payment and one-time payment (confidentiality factor used).*

### 4.3.3 Difference between current and determined system price

The current five-year contract of Company-X is constructed with an annual payment of €29,014 and one-time payment of €4,075. This payment is determined using the direct costing method, which means only the direct costs are considered along with a markup of 37.5%.

The determined annual payment is 0.60% higher, and the one-time payment is 16% lower than the current price. Based on five times the annual payment with the one-time payment, the determined total contract price differs only 0.13% from the current price of Company-X, see Figure 11.

| | | |
|---|---|---|
| Determined Annual payment price | € | 29,187 |
| Current annual payment price | € | 29,014 |
| **Percentage difference** | | **0.60%** |

| | | |
|---|---|---|
| Determined one-time payment | € | 3,406 |
| Current one-time payment | € | 4,075 |
| **Percentage difference** | | **-16.42%** |

| | | |
|---|---|---|
| Determined total contract price | € | 149,341 |
| Current total contract price | € | 149,145 |
| **Percentage difference** | | **0.13%** |

*Figure 11: Percentage difference between determined and current pricing of Company-X (confidentiality factor used).*

The results reflecting the differences between determined and current prices indicate that Company-X's present price aligns closely with its cost structure. The price based on direct costs with a markup of 37.5% and the price based on both indirect and direct costs with a markup of 15% shows minimal differences in the annual payment. Both prices remain beneath the client's maximum willingness to pay.

It is important for Company-X to understand that after deducting all indirect costs, only 15% of the profit remains. Otherwise, they may overestimate their profit. With a profit margin of 15%, Company-

X meets customer value, covers all costs, and retains a portion of profit. In addition, Company-X could lower the one-time payment to make the entry price more attractive to clients.

## 4.4 EXCEL IMPLEMENTATION

This section outlines the decisions made in developing the Excel model. It also clarifies how the model acquires cost data for the indirect costs and how the former is constructed. The aim is to explain the rationale behind the construction and obtain insights about the new model.

### 4.4.1 Model Scope

We construct the model according to the specified scope. This section addresses the aspects we do and do not include in the model.

The years 2025 and 2026 mark the period Company-X enters the market and begins establishing its customer base. We regard these as entry years. The years 2027 and 2028 are critical for the startup, and we call them make-or-break periods. We include 2029 and 2030 in the model to project progress beyond the crucial years for investors, although estimating them is challenging.

The model is intended as a static representative of Company-X's profitability over the next few years. It helps to provide investors with financial information. We do not consider the tax in this research since advice from a tax advisor is needed, and we lack sufficient knowledge about this. In addition, we do not consider inflation in the model. We aim to offer a user-friendly model and a clear framework for investors, incorporating inflation factors that add complexity to the model.

### 4.4.2 Construction of the model

The model is created in Excel, and the input data for indirect costs are obtained from the company's internal Google Drive database. Company-X seeks a model that enables easy viewing and adjusting of detailed costs. Furthermore, they aim to link relevant invoices, contracts, and quotations to these costs. Therefore, we created a detailed monthly breakdown that displays the indirect costs in Google Sheets. For a comprehensive example of marketing costs, see Appendix I. The costs in this breakdown are linked to growth factors. These growth factors are based on the expected growth of Company-X. Figure 12 illustrates the digital marketing category of the marketing cost breakdown. We add five growth factors: marketing FTEs, website upgrades, number of events, number of seats for specific marketing software tools, and number of seats for a specific marketing license. The available data reveals the 2024 costs, enabling us to use this information with growth factors to project costs from 2025 to 2030. Figure 13 provides an overview of the projected costs for each marketing category per year. This overview can be directly inserted into our Excel file for inclusion in the income statement.

| | | | | | | | 2025 |
|---|---|---|---|---|---|---|---|
| Marketing Team (FTE) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Website Upgrades | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| # Events (Fairs) | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| *# x/x/x Seats* | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| *# x Seats* | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| *Month* | 01 | 02 | 03 | 04 | 05 | 06 | 07 |
| Marketing categories (lead generation) | | | | | | | |
| *Digital Marketing* | | | | | | | |
| *External Marketing Content (x)* | x | x | x | x | x | x | x |
| *Hosting & Domains (x)* | x | x | x | x | x | x | x |
| *Hosting & Domains (x)* | x | x | x | x | x | x | x |
| *x* | x | x | x | x | x | x | x |
| *Digital Advertising* | | | | | | | |

*Figure 12: Digital marketing breakdown of the Marketing costs in the Google Drive database of Company-X per growth factor (x used for confidential reasons).*

| | Marketing | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Marketing categories (lead generation) | | | | | | | |
| *Digital Marketing* | €16,269 | €17,291 | €40,137 | €69,947 | €123,619 | €171,932 | €215,551 |
| *Events* | €3,297 | €28,884 | €19,340 | €29,470 | €36,838 | €73,676 | €110,514 |
| *Marketing software tools* | €3,933 | €4,440 | €9,408 | €44,949 | €45,242 | €60,127 | €75,013 |
| *Promotional expenses* | €2,224 | €2,347 | €4,108 | €4,694 | €4,694 | €5,868 | €7,042 |
| *Traditional marketing* | €151 | €1,630 | €2,445 | €3,260 | €4,075 | €6,520 | €8,150 |
| *Marketing Travel Expenses* | €0 | €1,956 | €3,423 | €3,912 | €3,912 | €4,890 | €5,868 |
| *Public Relations* | €0 | €3,651 | €5,477 | €7,302 | €9,128 | €14,605 | €18,256 |
| *All other costs* | €0 | €0 | €0 | €0 | €0 | €0 | €0 |
| *Total* | €25,873 | €60,199 | €84,338 | €163,535 | €227,509 | €337,619 | €440,393 |

*Figure 13: Google Sheets yearly overview of Marketing costs of Company-X (confidential factor used).*

### 4.4.3 Reserve for maintenance

As mentioned, the maintenance costs are estimated for the total contract period, not fixed recurring costs. In consultation with Company-X, we assume that we place the estimated yearly maintenance as a reserve on the balance sheet. This cost appears every year on the P&L as we expect to spend it.

### 4.4.4 Depreciation

Depreciation is a reduction in value rather than a cost. Depreciation is posted as an asset on the balance sheet, and on the P&L there is no generally accepted way to do this. Saliers (1937) describes how depreciation should be classified as the cost of leased systems or overhead costs based on the nature of the purchase. In addition, the article describes how most companies use the straight-line method. Even though it is a simple method, the results are plausible. For this reason, we use this method to calculate depreciation per year in the model. This can be calculated using the following formula (Onojah & Unegbu, 2013):

$$AD = \frac{C-R}{N},$$

AD = Annual depreciation.
R = Residual value of the asset after depreciation.
N = Number of years over which the asset is to be depreciated.
C = Historical cost of the asset.

Two costs for Company-X are classified as depreciation in the P&L. The first is the costs of producing the systems, which include direct material and labor costs. The startup leases the systems to clients while retaining ownership. The cost of producing the system is recorded as an asset on the balance sheet. The annual depreciation of the system over its economic life appears on the income statement. The economic lifecycle of the system is seven years. We classify the depreciation of the system as a cost of leased sales due to its direct relation to the systems sold.

The second depreciation recorded in the P&L relates to research and development costs incurred for the development of the V2 system. These costs are considered an investment in future systems that will be built. These costs are depreciated on the P&L over the anticipated economic lifecycle of the V2 system. This depreciation is classified as an operating expense, as it is not directly associated with sales.

The income statement is constructed using the multi-step method and the results of sections 4.1, 4.2, 4.3 and 4.4. A detailed description of the construction of the model can be found in Appendix II.

***Obtained insights:***
The new income statement indicates that Company-X becomes profitable during its make-or-break period, specifically from 2028. We compare the income before taxes results of the current model with the new model in Table 6. As the current model projected costs only until 2027, we compare the results of those years. We see that the results of the new P&L are significantly different from the previous one. After 2025, the financial results of the new model appear more negative. This aligns

with our previous understanding that costs were underestimated in the old model. This may suggest that indirect costs were also underestimated in the old model. However, because it is not possible to review the reasoning behind the projections, it is challenging to make a statement about this. The new model makes it possible to review the cost structure in detail. We conclude that the new model gives better insight into how the projections are built and therefore we consider the estimates to be more realistic. Additionally, the old model includes revenue from purchase contracts, whereas Company-X's business model focuses on selling PaaS contracts. We conclude that the old model does not accurately represent the startup's business plan.

| | 2025 | 2026 | 2027 |
|---|---|---|---|
| **Current P&L** | -€967,047 | €721,272 | €3,556,119 |
| **New P&L** | -€1,030,825 | -€2,735,319 | -€2,329,127 |
| **Percentage difference** | -7% | -479% | -165% |

*Table 6: Difference between income before taxes of current and new P&L model of Company-X (confidential factor used).*

## 4.5 SUMMARY

We use the theory of Chapter 3 to prepare the income statement of Company-X. Using the bottom-up method all the individual indirect and direct costs are analyzed and categorized. Direct costs are built up correctly in the old model, but the cost data used is not to be up to date and too low. The indirect costs in the old model are much lower than in the new model. Since the old model offers no insight into the construction of the costs, it is not possible to understand the reasoning behind it. The new model is built with available cost data from 2024 and estimated growth based on market research. Using growth factors, the costs for 2025 to 2030 are projected and used in the model. The model features a more comprehensive structure than the old version, enabling detailed cost estimation, review, and adjustment.

Using the traditional costing method, all direct and indirect costs were considered to formulate the price. A comparison with the current price, which comprised only the direct costs, revealed that the annual prices differed slightly. Thus, we can infer that Company-X's prepared price fairly accurately reflects the cost structure. To prevent overestimating revenue, it is crucial for Company-X to recognise that after deducting indirect costs, a smaller percentage remains than anticipated. The one-time payment proved to be 16% lower in our calculation. Company-X could lower the price while still covering all costs, reducing the entry cost for new clients.

Based on the costs, the income statement was prepared. The model represents a static projection of the results of Company-X for the years 2025-2030, with 2024 as the reference year. The model is meant to be easy to use and understand, and therefore inflation and taxes are not included. Using several worksheets, a detailed representation of the various costs and profitability is given in Excel. The model indicates that the startup will be profitable as of 2028.

The model represents only a projection of future costs and revenues. These projections are based on estimates made by Company-X. We include a sensitivity analysis in the model, which provides the startup and potential investors insight into the results in case of mis-estimations. The next chapter will focus on this.

# 5. SENSITIVITY ANALYSIS

This section describes the addition of a sensitivity analysis to the model. Section 5.1 introduces the addition of the analysis to the model. Section 5.2 argues the variables and intervals and analyzes the obtained insights. Section 5.3 examines the financial results of three scenarios constructed for Company-X. Section 5.4 concludes the chapter by summarizing the findings of the chapter.

## 5.1 INTRODUCTION

The income statement in this study is prepared using the estimated costs and growth rate of Company-X. We conduct a sensitivity analysis to offer both the startup and its potential investors insights into the effect of inaccurate estimates on the company's financial results. It serves as an addition to the model. The analysis shows the relationship between the input and output variables (Borgonovo & Plischke, 2016). In our model, the input variables are the estimations made for the model, discussed in section 4.1. The output variables are the components of the income statement: revenue, gross profit, operating expenses, operating income and income before taxes. As mentioned in Section 4.4, Company-X sees 2025 and 2026 as start-up years to enter the market. 2027 and 2028 are the make-or-break moments for the company, and they aim to achieve positive results here. The analysis shows the results for the make-or-break years, since these years are most important for the startup.

We conduct two types of analyses. First, we perform a one-at-a-time approach, where we change one variable while keeping all other variables constant. The result of this single variable on the model output is observed (Borgonovo & Plischke, 2016). The variables are changed according to an interval that reflects realistic situations that may occur for Company-X. This method reflects the financial results of the firm in case the estimated variables differ.

Additionally, we present the results of three likely situations that reflect the consequences of multiple changing variables. We find it unrealistic for only one variable to change, and with this approach, we create three more plausible examples. This method provides the firm and its investors an understanding of the possible effects on the financial results.

## 5.2 VARIABLES OF THE ANALYSIS

We use seven variables for the analysis: Direct materials system V2, direct material cost reduction, direct labor hours, indirect costs, growth rate, personnel expenses and annual payment V2 system. We discuss the seven variables and the chosen intervals, as illustrated in Table 7.

*Direct material system V2:* The costs of the direct material of a V2 are determined from contracts with partners and suppliers. The sensitivity analysis examines the effect of this price falling or rising on the financial results. We use the interval [30%; 15%; 0%; -5%; -10%]. The upper bound is 30% higher than estimated. Direct material costs consist mainly of the production of the 13 boxes. A 30% increase would be equivalent to remanufacturing five boxes. In consultation with Company-X, we consider the production error of several boxes to be a realistic situation. Although the cost for the V2 system has already been set with reasonable certainty, it is possible that new innovations or contracts lower the cost. We set the lower bound as -10%.

*Direct material cost reduction:* Company-X anticipates a yearly 10% reduction in direct material costs starting from 2026. The assumption is based on the belief that investment in efficiency and bulk buying could reduce costs. The firm considers a 10% reduction feasible based on the information it has from the V1 system. For this variable, we vary the reduction on an interval of [15%; 12.5%; 10%; 7.5%; 5%]. The lower bound of 5% indicates that the startup cannot operate as efficiently as expected. This may be because of setbacks or less rapid innovation than they had anticipated. In contrast, the upper bound of 15% suggests a more favorable scenario, where Company-X can utilize the materials more efficiently. This could arise from better innovations than expected or better contracts with suppliers.

*Direct Labor Hours:* Company-X is working on a database that estimates the hours in more detail, but it is not available yet for this study. Because the V2 system is never built, estimating the actual direct labor hours is difficult. The analysis interval is [50%; 25%; 0%; -10%; -20%]. The lower bound is 20%, reflecting 6 to 10 labor hours. The startup assumes it is more realistic they underestimated the labor hours. We chose an upper interval of 50%, reflecting 15 to 30 hours. Adding these hours to the predicted hours in the model, results in the initial labor hours needed to build the system without effects of efficiency.

*Indirect Costs:* The indirect costs are a projection based on cost data for 2024 and the estimated growth rate. We want a spread interval to investigate the effect of errors on the financial results. We implement this at [20%; 10%; 0%; -10%; -20%].

*Personnel expenses:* The personnel expenses are estimated using Company-X's hiring strategy for the upcoming years. However, it is possible that these costs vary significantly in reality. We employ an interval of [50%; 25%; 0%; -25%; -50%]. It is possible that personnel expenses are lower due to employee efficiency, successful training, or the fact that finding suitable personnel is challenging. On the other hand, the firm's strategy may be overly optimistic, or the personnel underperforms, requiring additional staff for the tasks. Given the uncertain nature of this variable, we have established a broad interval.

*Growth Rate:* The growth rate of Company-X is based on the market analysis they did in Q4 of 2024. It has been adopted as production constrained. This means that production cannot keep up with demand. We take interval [50%; 25%; 0%; -25%; -50%] for the analysis. The growth rate could be much higher than estimated due to investment and efficiency. In addition, the growth rate could also be disappointing due to delays in V2 development.

*Annual Payment System Price:* The startup tests the price of the system to the client. The firm has sent a quotation that adds 30% to the standard price and is waiting for the client's response. For this reason, we use this upper interval. In addition, we want to see the results of lowering the price. As mentioned in Section 4.3, Company-X wants to keep the standard price below €6.52. Lowering 10% of the current price results in this exact price, which we consider the lower interval.

| Variables | Sensitivity analysis interval |
|---|---|
| **Direct material system V2** | [30%; 15%; 0%; -5%; -10%] |
| **Direct material cost reduction** | [15%; 12,5%; 10%; 7,5%; 5%] |
| **Direct labor hours** | [50%; 25%; 0%; -10%; -20%] |
| **Indirect costs** | [20%; 10%; 0%; -10%; -20%] |
| **Personnel expenses** | [50%; 25%; 0%; -25%; -50%] |
| **Growth rate** | [50%; 25%; 0%; -25%; -50%] |
| **Annual payment system price** | [30%; 20%; 10%; 0%; -10%] |

*Table 7: The variables and their intervals used in the sensitivity analysis.*

***Obtained insights:***
The sensitivity analysis established the results for Company-X's income statement for all variables, see Appendix III. We make several observations about the variables in the model and how Company-X and potential investors can use the analysis. These are explained in this subsection.

The findings represent the effect of misestimations on the firm financial results. Potential investors can use them to supplement the income statement to understand the different possible outcomes of the startup. The analysis shows that the model is very sensitive to estimations. Inaccurate estimates

significantly impact the results. It is important that the company continues to test and sharpen the estimations. In addition, when using the results, remember it is unlikely that only one variable will change. Many variables will relate to and influence each other. For this reason, this analysis can only provide a simple representation of the effect of a single variable on the income statement results without including external effects.

The charts provided some notable results, which we explain. Only the growth rate and annual payment have an impact on revenue. This makes sense since the system price is a fixed variable in the model and does not depend on cost changes. This suggests the assumption that Company-X does not adjust its prices annually but instead applies a representative price for several years. Furthermore, the direct material cost reduction results show a nonlinear relation, illustrated in Figure 14. We can explain this because the reduction in costs begins in 2026. The costs in 2025 do not reflect this decrease. Therefore, when the variable changes, the costs in 2025 remain unchanged. Since the costs of 2025 are used to determine depreciation costs in 2026, this affects the results non-linearly.

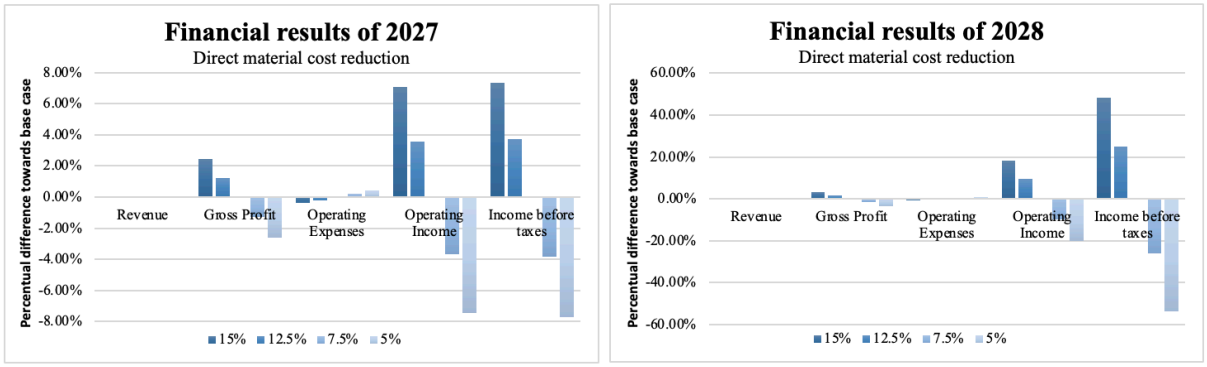


*Figure 14: Percentual differences of direct material cost reduction between base case (10%) financial results and interval [15%; 12,5%; 7,5%; 5%] for 2027 and 2028.*

## 5.3 MULTIPLE VARIABLE ANALYSIS

As we indicated in Section 5.2, assuming only one variable changes at a time is unrealistic. In addition to the variables, we present three situations that we believe will likely occur for Company-X. The following scenarios are utilized for the analysis using the intervals of Table 8.

*Situation 1: Indirect costs efficiency*
The first scenario we establish is about indirect cost efficiency. As mentioned in Section 4.1, it is difficult for the startup to establish the indirect costs. The new estimates already show significant differences from the costs in the current model. Since the projected costs in the new model are based on historical data from 2024, it provides a bit more certainty in estimating the costs. Still, this remains complicated. One of the firm's priorities is to be more efficient with indirect costs and personnel expenses. Since the FTEs partly determine indirect costs, it is likely that they also change when personnel expenses fluctuate. For this reason, this is one event we analyse.

*Situation 2: Growth*
A likely assumption is that growth rate of Company-X varies from its prediction. We expect more variables to change when this occurs. The economies of scale will decrease when the growth rate is lower than expected. As a result, the direct material cost reduction will be less than initially estimated. When the growth rate is disappointing, the efficiency during the assembly process decreases, leading to higher direct labor hours per system. Lastly, personnel expenses decrease since fewer personnel is needed for the work. This represents a bad situation for the startup. On the contrary, if the growth rate is higher than expected, we anticipate that a revers situation occurs. This represents a favorable situation. We do assume that personnel expenses at the good/bad case and best/worst case are the same. This is because certain personnel members are fixed. These continue to work despite growth or decline, for example the CEO or marketing personnel.

*Situation 3: Pricing and Costs*
The third scenario represents the relationship between the annual payment and direct material costs. In the model, the annual payment remains the same and is independent of changes in cost. In reality, we expect Company-X to reconsider the price in case of decreasing or increasing system costs. We provide five cases that we consider as likely to happen.

Case A: If the direct materials V2 system remain the same, Company-X might consider increasing its annual payment by 30%. This is likely if they get feedback from their clients that they are willing to pay more for the system.

Case B: If the direct materials V2 system increases by 30%, Company-X will increase the annual payment simultaneously to maintain a representative price and cover the costs.

Case C/D/E: If the direct materials V2 system decreases by 10%, Company-X has three options. They can increase their price by 30% if their clients accept it, ensuring a higher profit margin. They can maintain the price if their clients are unwilling to pay a higher price. Alternatively, Company-X can choose to drop its price along with the costs. This allows them to make the system more attractive to clients who want to pay a lower price.

We do not consider the situation where the direct materials V2 system increases, and Company-X lowers its annual payment. Reducing the price while the costs rise causes the costs to no longer be covered, preventing the firm from making a profit. We consider it unlikely that Company-X makes this choice.

| ***Situation 1: Indirect costs efficiency*** | **Best** | **Good** | **Base** | **Bad** | **Worst** |
|---|---|---|---|---|---|
| **Indirect costs** | -20% | -10% | 0% | 10% | 20% |
| **Personnel expenses** | -50% | -25% | 0% | 25% | 50% |

| ***Situation 2: Growth efficiency*** | **Best** | **Good** | **Base** | **Bad** | **Worst** |
|---|---|---|---|---|---|
| **Direct material cost reduction** | 15% | 12.5% | 10% | 7.5% | 5% |
| **Direct labor hours** | -20% | -10% | 0% | 25% | 50% |
| **Personnel expenses** | 25% | 25% | 0% | -25% | -25% |
| **Growth rate** | **50%** | **25%** | **0%** | **-25%** | **-50%** |

| ***Situation 3: Pricing and costs*** | **Base** | **A** | **B** | **C** | **D** | **E** |
|---|---|---|---|---|---|---|
| **Annual Payment System Price** | 0% | 30% | 30% | 30% | 0% | -10% |
| **Direct materials V2 system** | 0% | 0% | 30% | -10% | -10% | -10% |

*Table 8: Three situations of Company-X with their intervals.*

The results of the scenario analysis are established and presented in Appendix IV. The graph's vertical axis displays the percentage differences between the base case we established and the changes according to the interval. The horizontal axis presents the results for each component of the income statement.

***Obtained insights:***

The results of the situations are as we expect according to the model. Lowering both indirect costs and personnel expenses shows a linear effect on the financial results. The second situation is nonlinear which is also logical because of the personnel expenses that remain constant in the good and worst case. Situation three shows the possible cases that could occur when they receive feedback from lead clients about the system price. It is interesting that the financial results of Company-X become negative when the direct materials V2 system and the system price is lowered. This reflects the indirect costs remain the same and the system price can no longer cover these costs. This gives the startup the insight that this is not an optimal decision.

The model reflects the relationship of various variables on the financial results. This analysis provides a static reflection of changing variables. It does not consider the influence of external factors. Furthermore, the model only reflects variables that are deliberately changed. Any other possible variable related to the situation in question is disregarded. However, it is possible for Company-X or the investor to manually adjust variables and see the effect on the financial results, should they wish to test a different situation.

## 5.4 SUMMARY

This section describes the sensitivity analysis that supplements the income statement model. This analysis is conducted for seven variables of the model: direct materials V2 system, direct material cost reduction, direct labor hours, indirect costs, growth rate, personnel expenses and annual payment V2 system. In addition, three likely situations for Company-X are prepared for indirect cost efficiency, growth, and pricing and costs. The analysis shows the effect of changing these variables on the financial results.

The sensitivity analysis is intended as an addition to the model. The analysis allows Company-X and potential investors to test the sensitivity of different estimates on the model. The costs are projected into the model, making them uncertain. The evaluation makes it easy for investors to observe changes in these unreliable costs. Moreover, the scenarios can be used to estimate the firm's potential if other choices are made regarding certain costs or the system price. Also, they provide information about situations that may occur for Company-X. But it is also possible to fill in different scenarios manually and get the effect on the results.

Changing the variables of the model results in linear results, except for the direct material cost reduction. This can be explained by the way costs are constructed in the model. These linear relationships indicate that the model does not consider external factors. The model is based on the variables and as a result, allows for a static representation of financial results.

Both analyses give insight into how possible misjudgments affect the financial results. The firm can use this to add to the model to attract investors. It gives investors an insight into Company-X's financial risks and opportunities.

# 6. CONCLUSION AND RECOMMENDATIONS

This section describes whether the research objective of the study is met. Section 6.1 describes the findings from the research and section 6.2 describes recommendations for the company or follow-up researchers.

## 6.1 CONCLUSION

Our main purpose is to provide Company-X with a financial model. With the model, it should be possible to get a detailed representation of all expected costs. The goal of the startup is to be able to share reliable financial documents with potential investors. This section describes the findings of this study to achieve the research objective:

*"To gain financial knowledge by creating a financial statement for Company-X that uses the cost data of 2024 to project cost from 2025 through 2030, allowing the company to present a trustworthy financial statement to potential investors."*

Based on the literature study in Chapter 3, we determined that we would prepare the income statement for Company-X to attract investors. The startup provides a product as a service via a lease contract. This characterizes a use-oriented business model, as they offer only the use of the product to the client. This model aligns with the bottom-up costing method. By adding up all individual costs, this method organizes a company's total cost. This approach allows for a multi-step income statement, which gives a detailed representation of Company-X's financial results. Our research led us to three key conclusions that we will address.

*The current system price overestimates the profit.*
The system cost in Company-X's current model was established using the direct costing method with a markup. The method only considered the direct costs of the system. We employ the traditional costing method, which accounts the direct and indirect costs. This determines a price that better reflects the cost structure. This method is suitable for companies with limited data. Furthermore, it is an appropriate method for firms without complicated production lines. The contract structure of the firm consists of a five year annual payment and a one-time payment. The method resulted in an annual payment with a negligible difference of 0.60%. The initial price was set up with the indirect costs and a markup of 37.5%. The new price consists of the direct and indirect costs with a markup of only 15%. It is important for Company-X to keep this in mind to avoid overestimating their profit. In addition, the one-time payment with our method turned out to be 16% lower. This means that by lowering the former by 16%, it is possible to cover all costs and have a markup of 15%.

*The current model provides a poor representation of Company-X's business model, while the new model provides a detailed understanding of the reasoning behind the estimated costs.*
The income statement is prepared using the historical cost data of 2024 and predicted growth based on market research. The future costs are estimated with growth factors, think of FTEs, number of software seats or number of events. The costs in the model are projected for 2025 to 2030. The estimated results of the new model are compared with the current model the firm uses. The estimated costs in the old model are lower than our model, for example -479% in 2026. Since the current model includes cost data that is not traceable or reasoned, the model is difficult to understand. In addition, the old model does not assume the current business model to sell PaaS contracts. The PaaS contract lets the client make annual payments instead of a one-time payment. As a result, the revenue in the current model is higher than in our model. We conclude that the old model is not useful for communicating the current business model to potential investors. The new model does have the ability to give investors insight into the structure of the estimated costs and understand the reasoning behind them.

*The firm needs a professional to make the right projections for future costs.*
We constructed a sensitivity analysis in addition to the P&L. Considering that the costs are based on estimates, the analysis provides useful insights about the effect of misjudgements on the financial results of the firm. The results showed that changing estimates has linear effects on financial results.

The model does not consider external factors to ensure an easy to understand and use income statement. We conclude that making correct estimates is important. To make accurate forecasts for the future it is essential to have a financial expert look at this. The model is useful, but a professional is needed to make the right projections.

To conclude, Company-X can use the model to attract investors. The model provides a good basis for presenting the company's financial results. However, it is important to remember that the model consists of estimated costs.

## 6.2 RECOMMENDATIONS

We recommend that Company-X utilize the new model when communicating expected financial results for with investors. The sensitivity analysis strengthens the model by giving the investor insight into the effect of the estimates of the model. It is important to know that the model does not show the effect of external factors on the firm’s financial results. The accountant of Company-X provides quarterly financial ledgers. We recommend that each quarter, these costs are compared to the model to gain insight into the accuracy of the estimates. This helps with better projecting future costs. Moreover, Company-X should hire a financial expert. The company and our research have insufficient professional knowledge to make accurate estimates and decisions on accounting. Finally, we advise Company-X to send this thesis along with investors. It provides the necessary knowledge to understand the reasoning behind the sensitivity analysis and information about the construction of the income statement.

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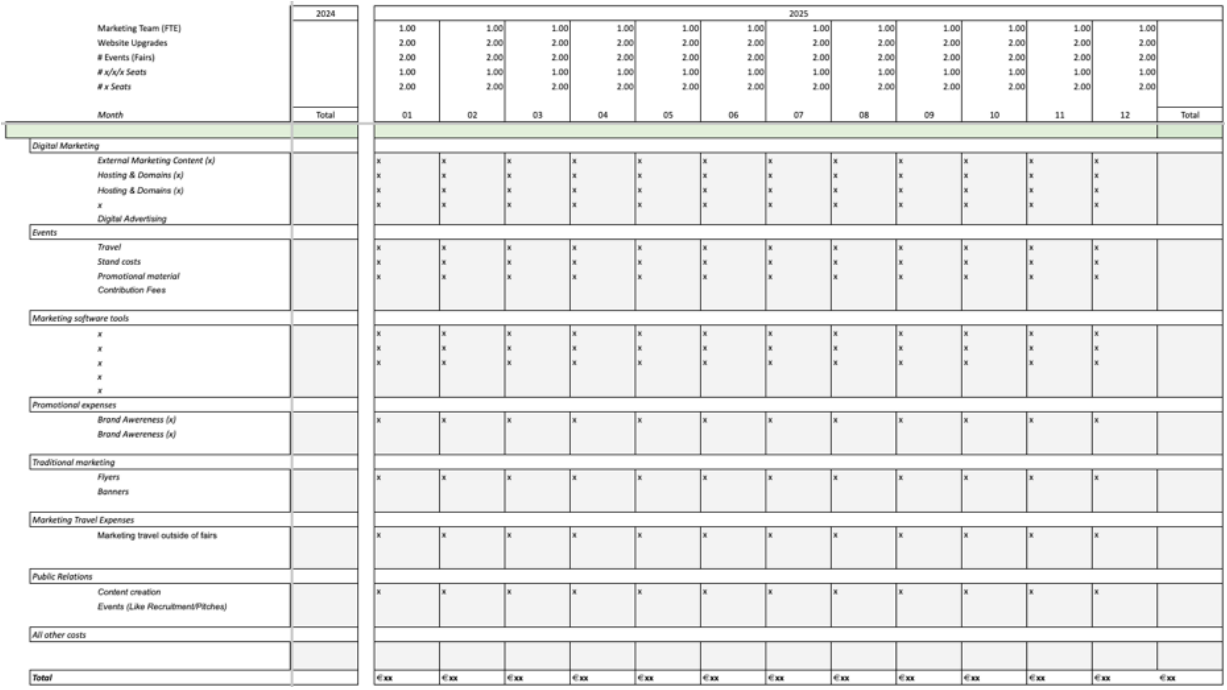
# APPENDIX I – GOOGLE DRIVE DATABASE

We present the marketing breakdown model in the Google Drive database of Company-X, see Figure 15. A confidential factor is used for all monetary values. The breakdown shows all categories that are part of the marketing costs. The growth factors are added on top of the model according to the estimated growth rate. The factor is used to project the cost per month. Finally, the total costs are calculated. We created the breakdown models for all indirect costs of the startup. This ensures detailed insights into all cost categories and how the costs are projected.



| | 2024 | 2025 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Marketing Team (FTE) | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Website Upgrades | | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | |
| # Events (Fairs) | | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | |
| # x/x/x Seats | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| # x Seats | | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | |
| Month | Total | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | Total |
| Digital Marketing | | | | | | | | | | | | | | |
| External Marketing Content (x) | | x | x | x | x | x | x | x | x | x | x | x | x | |
| Hosting & Domains (x) | | x | x | x | x | x | x | x | x | x | x | x | x | |
| Hosting & Domains (x) | | x | x | x | x | x | x | x | x | x | x | x | x | |
| x | | x | x | x | x | x | x | x | x | x | x | x | x | |
| Digital Advertising | | | | | | | | | | | | | | |
| Events | | | | | | | | | | | | | | |
| Travel | | x | x | x | x | x | x | x | x | x | x | x | x | |
| Stand costs | | x | x | x | x | x | x | x | x | x | x | x | x | |
| Promotional material | | x | x | x | x | x | x | x | x | x | x | x | x | |
| Contribution Fees | | | | | | | | | | | | | | |
| Marketing software tools | | | | | | | | | | | | | | |
| x | | x | x | x | x | x | x | x | x | x | x | x | x | |
| x | | x | x | x | x | x | x | x | x | x | x | x | x | |
| x | | x | x | x | x | x | x | x | x | x | x | x | x | |
| x | | | | | | | | | | | | | | |
| x | | | | | | | | | | | | | | |
| Promotional expenses | | | | | | | | | | | | | | |
| Brand Awereness (x) | | x | x | x | x | x | x | x | x | x | x | x | x | |
| Brand Awereness (x) | | | | | | | | | | | | | | |
| Traditional marketing | | | | | | | | | | | | | | |
| Flyers | | x | x | x | x | x | x | x | x | x | x | x | x | |
| Banners | | | | | | | | | | | | | | |
| Marketing Travel Expenses | | | | | | | | | | | | | | |
| Marketing travel outside of fairs | | x | x | x | x | x | x | x | x | x | x | x | x | |
| Public Relations | | | | | | | | | | | | | | |
| Content creation | | x | x | x | x | x | x | x | x | x | x | x | x | |
| Events (Like Recruitment/Pitches) | | | | | | | | | | | | | | |
| All other costs | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| Total | | €xx | €xx | €xx | €xx | €xx | €xx | €xx | €xx | €xx | €xx | €xx | €xx | €xx |

*Figure 15: The marketing cost breakdown in the Google Drive database of Company-X per growth factor (x used for confidential reasons).*

# APPENDIX II – INCOME STATEMENT MODEL

We present the income statement model as it is constructed in our study, see Figure 16. A confidential factor is used for all monetary values.

| | | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|
| | # of systems V1 | 0 | 5 | 0 | 0 | 0 | 0 | 0 |
| | # of systems V2 | 0 | 3 | 48 | 154 | 325 | 713 | 881 |
| REVENUE | | | | | | | | |
| *Trial Period* | | 0.00 | 40,750.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Long Term Contracts (V1 Trial)* | | 0.00 | 145,070.00 | 145,070.00 | 145,070.00 | 145,070.00 | 145,070.00 | 145,070.00 |
| *Long Term Contracts (No Trail)* | | 0.00 | 87,042.00 | 1,479,714.00 | 5,947,870.00 | 15,377,420.00 | 36,064,402.00 | 61,625,736.00 |
| *One-time T, I & S costs (V2 No Trial + V1 Trial)* | | 0.00 | 32,600.00 | 195,600.00 | 627,550.00 | 1,324,375.00 | 2,905,475.00 | 3,590,075.00 |
| *Other* | | | | | | | | |
| | Total revenues | 0.00 | 305,462.00 | 1,820,384.00 | 6,720,490.00 | 16,846,865.00 | 39,114,947.00 | 65,360,881.00 |
| COST OF LEASED SYSTEMS | | | | | | | | |
| | *Transport, Installatie and Setup* | 0.00 | 29,166.08 | 185,511.04 | 523,225.24 | 1,073,034.51 | 2,302,627.93 | 2,786,411.68 |
| | *Depreciation System* | 8,817.25 | 60,665.37 | 368,702.76 | 1,159,905.58 | 2,624,837.88 | 5,500,687.66 | 8,668,038.02 |
| V1 | *Service* | 0.00 | 1,711.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | *Insurance of Leased Systems* | 0.00 | 1,098.71 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| V2 | *Service* | 0.00 | 8,899.80 | 166,129.60 | 622,986.00 | 1,587,131.00 | 3,693,417.00 | 6,149,761.80 |
| | *Insurance of Leased Systems* | 0.00 | 4,903.62 | 78,601.84 | 260,557.47 | 582,378.20 | 1,212,727.30 | 1,799,851.33 |
| | Total Cost of Leased Systems | 8,817.25 | 106,445.08 | 798,945.23 | 2,566,674.29 | 5,867,381.60 | 12,709,459.89 | 19,404,062.83 |
| | **Gross profit** | (8,817.25) | 199,016.92 | 1,021,438.77 | 4,153,815.71 | 10,979,483.40 | 26,405,487.11 | 45,956,818.17 |
| | Gross margin | | 65% | 56% | 62% | 65% | 68% | 70% |
| OPERATING EXPENSES | | | | | | | | |
| | *Depreciation R&D* | 37,511.84 | 172,627.39 | 213,198.09 | 274,702.18 | 460,826.75 | 539,138.47 | 620,803.34 |
| | *Reserve for maintenance* | 0.00 | 6,431.66 | 93,545.18 | 325,525.64 | 768,465.84 | 1,654,080.27 | 2,541,726.77 |
| | *Marketing & adversing* | 25,873.41 | 60,199.16 | 84,337.83 | 163,534.64 | 227,508.88 | 337,618.64 | 440,393.40 |
| | *Sales* | 5,744.67 | 39,327.47 | 111,124.53 | 218,082.00 | 276,326.86 | 355,546.39 | 533,231.13 |
| | *Software Tools* | 25,121.85 | 27,183.74 | 47,922.00 | 58,680.00 | 75,227.76 | 96,509.04 | 115,873.44 |
| | *Rent & Utilities* | 70,396.44 | 71,863.44 | 168,408.34 | 280,868.56 | 399,193.59 | 510,903.87 | 580,540.80 |
| | *General Administration* | 92,261.03 | 116,148.29 | 205,289.44 | 288,823.55 | 387,306.78 | 542,737.06 | 653,938.79 |
| | *Personnel Salary* | 85,330.50 | 693,157.50 | 2,704,985.00 | 4,428,710.00 | 6,185,850.00 | 8,593,360.00 | 10,086,440.00 |
| | *Subsidy* | (120,131.00) | | | | | | |
| | *Other expenses* | | | | | | | |
| | **Total Operating expenses** | 222,108.76 | 1,186,938.64 | 3,628,810.41 | 6,038,926.57 | 8,780,706.45 | 12,629,893.74 | 15,572,947.66 |
| | Operating margin | | -323% | -143% | -28% | 13% | 35% | 46% |
| OPERATING INCOME | | (230,926.00) | (987,921.72) | (2,607,371.64) | (1,885,110.86) | 2,198,776.95 | 13,775,593.36 | 30,383,870.51 |
| Finance cost | (interest/bank charges) | 10,235.49 | 11,704.79 | 156,677.33 | 518,259.88 | 1,158,004.90 | 2,416,880.24 | 3,669,686.41 |
| INCOME BEFORE TAXES | | (241,161.49) | (999,626.51) | (2,764,048.97) | (2,403,370.75) | 1,040,772.05 | 11,358,713.12 | 26,714,184.11 |

*Figure 16: Projected income statement model of Company-X.*

The income statement in Excel is built from the direct and indirect costs from Section 4.1 and the multi-step method. This method allows us to build an income statement consisting of detailed information. To build the P&L, we used several worksheets. We divide this into several groups:

*Sheets with direct costs:*
The first group consists of sheets that calculate the cost of leased systems. We have added a general sheet to give Company-X a comprehensive overview of all direct costs, see Figure 17. The sheets we use are:

- Direct materials: shows the bill of material of the V1 and V2 system.
- Direct labor: shows the estimated labor hours for the V1 and V2 system according to Table 4.
- Transportation, installation & setup: Shows the fixed installation and transport costs per system, with the variable insurance costs. These are based on the manufacturing costs (direct material + direct labor) with the transport costs.
- Service & maintenance: This sheet shows the annual recurring service costs per system. These are fixed costs. The sheet also presents the maintenance costs. These costs are based on the probability of their occurrence in the contract period and the direct material cost of replacing the components of the system.
- Insurance & lease: This sheet represents the costs of the stay insurance of the system. The stay insurance depends on the manufacturing costs. The financial lease costs calculate the annual payment for the loan and interest.
- Cost of leased systems (general sheet): The general sheet combines the costs in the detailed sheets per category to provide an overview. The cost is calculated based on the

number of active contracts and systems built. This forms the basis of the cost of leased system in the income statement.

**Cost of leased systems**

| | COGS | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| *# of V1 Systems Build* | 1 | 4 | 0 | 0 | 0 | 0 | 0 |
| *# of Active Trails of 6-weeks* | 0 | 5 | 0 | 0 | 0 | 0 | 0 |
| V1 | | | | | | | |
| *Direct Materials* | € 42,161 | € 42,161 | € 37,945 | € 34,150 | € 30,735 | € 27,662 | € 24,895 |
| *Direct Labor* | € 19,560 | € 13,040 | € 9,780 | € 8,150 | € 6,520 | € 5,705 | € 4,890 |
| Total System Costs | € 61,721 | € 220,803 | € - | € - | € - | € - | € - |
| *Transport, Installatie and Setup* | € - | € 19,237 | € - | € - | € - | € - | € - |
| *Service* | € - | € 1,712 | € - | € - | € - | € - | € - |
| *Maintenance* | € - | € 1,037 | € - | € - | € - | € - | € - |
| *Insurance of Sold Systems* | € - | € 3,582 | € - | € - | € - | € - | € - |
| *Total Cost of leased V1 System* | € - | € 6,331 | € - | € - | € - | € - | € - |
| *# of V2 Systems Build* | 0 | 3 | 53 | 154 | 325 | 713 | 881 |
| *# of Active Long Term Contracts (Trial + No Trial)* | 0 | 8 | 56 | 210 | 535 | 1248 | 2129 |
| V2 | | | | | | | |
| *Direct Materials* | € 42,161 | € 34,338 | € 100,748 | € 90,673 | € 81,606 | € 73,445 | € 66,101 |
| *Direct Labor* | € 19,560 | € 13,040 | € 9,780 | € 8,150 | € 6,520 | € 5,705 | € 4,890 |
| Total System Costs | € - | € 142,134 | € 5,857,965 | € 15,218,722 | € 28,640,815 | € 56,433,969 | € 62,542,652 |
| *Transport, Installatie and Setup* | € - | € 3,540 | € 290,923 | € 798,461 | € 1,594,676 | € 3,332,095 | € 3,930,326 |
| *Service* | € - | € 23,733 | € 166,130 | € 622,986 | € 1,587,131 | € 3,702,317 | € 6,315,891 |
| *Maintenance* | € - | € 14,385 | € 93,545 | € 326,669 | € 776,910 | € 1,696,171 | € 2,715,242 |
| *Insurance of Sold Systems* | € - | € 42,629 | € 696,138 | € 2,334,068 | € 5,302,644 | € 11,109,700 | € 16,998,584 |
| *Total Cost of leased V2 System* | € - | € 80,746 | € 955,813 | € 3,283,722 | € 7,666,685 | € 16,508,188 | € 26,029,717 |
| Total costs for system | € - | € 226,421 | € 7,104,701 | € 19,300,905 | € 37,902,177 | € 76,274,252 | € 92,502,695 |

| Comments |
|---|
| |
| Number of V1 systems built in the year |
| Number of 6-week trials with V1 systems in the year |
| |
| |
| |
| |
| One-time costs incurred for transportation, installation and setup of the system. |
| |
| System V1 trial is placed at client and that involves service/maintenance/insurance costs (of 6 weeks) |
| |
| |
| |
| |
| Number of V2 systems built in the year |
| Total number of 5-year contracts with V2 system that are active that year |
| |
| Direct materials for building the system. Estimated reduction from year 2026 = 10% |
| |
| |
| One-time costs incurred for transportation, installation and setup of the system. |
| |
| Annual recurring costs for service of the number of active contract |
| Estimated maintenance costs per contract year |
| Annual recurring costs for Insurance of the number of active contracts |
| |
| |

*Figure 17: General sheet of cost of leased systems in income statement model in Excel.*

| | Operating Expenses | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Marketing & Adversing (lead generation) | | | | | | | |
| *Digital Marketing* | € 16,269 | € 17,291 | € 40,137 | € 69,947 | € 123,619 | € 171,932 | € 215,551 |
| *Events* | € 3,297 | € 28,884 | € 19,340 | € 29,470 | € 36,838 | € 73,676 | € 110,514 |
| *Marketing software tools* | € 3,933 | € 4,440 | € 9,408 | € 44,949 | € 45,242 | € 60,127 | € 75,013 |
| *Promotional expenses* | € 2,224 | € 2,347 | € 4,108 | € 4,694 | € 4,694 | € 5,868 | € 7,042 |
| *Traditional marketing* | € 151 | € 1,630 | € 2,445 | € 3,260 | € 4,075 | € 6,520 | € 8,150 |
| *Marketing travel expenses* | € - | € 1,956 | € 3,423 | € 3,912 | € 3,912 | € 4,890 | € 5,868 |
| *Public Relations* | € - | € 3,651 | € 5,477 | € 7,302 | € 9,128 | € 14,605 | € 18,256 |
| *All other costs* | € - | € - | € - | € - | € - | € - | € - |
| Sales (lead conversion) | | | | | | | |
| *Sales representation* | € 1,099 | € 1,956 | € 7,824 | € 10,954 | € 15,648 | € 21,907 | € 23,472 |
| Sales Software Tools | € 4,596 | € 4,315 | € 17,139 | € 35,098 | € 50,409 | € 70,948 | € 76,016 |
| *Sales Travel expenses* | € 50 | € 21,907 | € 84,499 | € 168,998 | € 203,424 | € 253,498 | € 422,496 |
| *Sales materials* | € - | € 1,369 | € 1,663 | € 3,032 | € 6,846 | € 9,193 | € 11,247 |
| *Demo on Site Version (bij de klant een kast plaatsen)* | € - | € - | € - | € - | € - | € - | € - |
| *Demo Reference Visits (Klanten bezoeken een demo bij een andere klant)* | € - | € 9,780 | € - | € - | € - | € - | € - |
| Software Licences | | | | | | | |
| *General softwarelicenses* | € 25,122 | € 27,184 | € 47,922 | € 58,680 | € 75,228 | € 96,509 | € 115,873 |
| Rent & Utilities | | | | | | | |
| *Office Space* | € 3,912 | € 5,379 | € 45,092 | € 79,596 | € 109,536 | € 129,096 | € 150,221 |
| *Assembly Space* | € 66,484 | € 66,484 | € 123,316 | € 201,272 | € 289,658 | € 381,808 | € 430,320 |
| General & Administration | | | | | | | |
| *Compliance* | € - | € - | € - | € - | € - | € - | € - |
| *Insurance* | € 4,263 | € 6,438 | € 10,416 | € 21,793 | € 38,608 | € 75,450 | € 90,876 |
| *Legal and advice* | € 71,056 | € 60,049 | € 82,152 | € 105,624 | € 127,140 | € 148,656 | € 170,172 |
| *Membership* | € 2,311 | € 944 | € 4,145 | € 4,731 | € 5,734 | € 7,054 | € 7,690 |
| *Office supplies* | € 2,248 | € 6,636 | € 15,797 | € 22,349 | € 29,391 | € 40,214 | € 54,297 |
| *Office Furniture & Materials* | € 4,713 | € 4,713 | € 4,713 | € 4,713 | € 4,713 | € 4,713 | € 4,713 |
| *Personnel representation* | € 1,615 | € 4,303 | € 12,127 | € 19,951 | € 19,951 | € 23,863 | € 27,775 |
| *Recruitment* | € - | € - | € - | € 7,824 | € 15,648 | € 23,472 | € 35,208 |
| *General Business Travel expenses* | € 4,440 | € 5,477 | € 9,780 | € 12,518 | € 16,822 | € 27,384 | € 35,208 |
| *Customer support* | € 1,053 | € 1,174 | € 1,956 | € 2,738 | € 5,477 | € 7,042 | € 8,606 |
| *Bad dept expense* | € - | € - | € - | € - | € - | € - | € - |
| *Repair & maintenance* | € 203 | € 203 | € 203 | € 203 | € 203 | € 203 | € 203 |
| *Personnel development* | € 128 | € 25,819 | € 63,414 | € 85,595 | € 122,446 | € 182,925 | € 216,842 |
| *Other G&A* | € 230 | € 391 | € 587 | € 782 | € 1,174 | € 1,760 | € 2,347 |
| Sub parts | | | | | | | |
| *Marketing & Adversing (lead generation)* | € 25,873 | € 60,199 | € 84,338 | € 163,535 | € 227,509 | € 337,619 | € 440,393 |
| *Sales (lead conversion)* | € 5,745 | € 39,327 | € 111,125 | € 218,082 | € 276,327 | € 355,546 | € 533,231 |
| *Software Licenses* | € 25,122 | € 27,184 | € 47,922 | € 58,680 | € 75,228 | € 96,509 | € 115,873 |
| *Rent & Utilities* | € 70,396 | € 71,863 | € 168,408 | € 280,869 | € 399,194 | € 510,904 | € 580,541 |
| *General & Administration* | € 92,261 | € 116,148 | € 205,289 | € 288,824 | € 387,307 | € 542,737 | € 653,939 |
| **Total Operating Expenses** | € 219,397 | € 314,722 | € 617,082 | € 1,009,989 | € 1,365,564 | € 1,843,315 | € 2,323,978 |

| Comments | Link to database |
|---|---|
| | |
| *Costs incurred to generate lead customers* | Internal Database Marketing |
| *Costs for reaching new customers digitally, think LinkedIn, promo videos, photos, website* | |
| *Costs for attending trade shows or events specifically for lead generation: booth rental, travelcosts, tickets, promotional materials (pre, post, digital, traditional)* | |
| *Costs for software tools for marketing automation, social media and analytic tools* | |
| *Costs for promotional materials to increase brand awareness: doppers, jackets, stickers, etc.* | |
| *Costs for printed advertising: flyers, banners, posters etc.* | |
| *Travel and accommodation costs for marketing purposes specifically for finding potential customers* | |
| *Costs incurred for building and maintaining brand awareness and relationships to stakeholders* | |
| *All other costs related to generating lead customers* | |
| *Costs incurred to convert leads to paid customers* | Internal Database Sales |
| *Costs incurred for activities with customers and business partners* | |
| *Software tools used for sales automation, achieving and maintaining customers* | |
| *Travel and accommodation costs specifically focused on customer contact, visits/meetings* | |
| *Costs for promotional materials aimed at converting leads into customers, e.g. presentations, brochures, email campaigns* | |
| *Costs for doing a pilot (marketing materials, travel expenses)* | |
| *Costs for performing demos (Travel expenses, software licenses, materials for pre and post marketing, personnel time)* | |
| | Internal Database Software Licenses |
| *Costs for software licenses used for general business operations* | |
| | Internal Database Rent & Utilities |
| *Costs for office rent and utilities* | |
| | Internal Database General & Administration |
| *Costs incurred to comply with regulations, e.g. hiring someone to do VAT returns* | |
| *Costs for general insurance of the company* | |
| *Costs for legal matters and advice, e.g. name protection, finance advisory* | |
| *Costs for memberships of associations* | |
| *Costs for small office facilities (under 100€)* | |
| *Costs for large office facilities (above 100€)* | |
| *Cost of maintaining staff relations, e.g. work outings, dinners, gifts* | |
| *Costs incurred for recruitment and selection of new employees* | |
| *Travel and accommodation expenses for general business matters (not for marketing or sales purposes)* | |
| *Costs incurred for customer support* | |
| *Costs incurred for creditors who do not pay* | |
| *Costs incurred for repairs and maintenance* | |
| *Costs incurred for training and development of employees* | |
| *All other costs related to generating lead customers* | |

*Figure 18: Indirect costs of Company-X in Excel model (confidential factor used).*

*Sheets with indirect costs:*
The second group contains all indirect costs. The sheets we use for the indirect costs are:

- Indirect costs (OPEX): This sheet shows all indirect costs, see Figure 18.
- Personnel expenses: This sheet represents the estimated personnel expenses according to the strategy planning of Company-X. This shows the employees per category: general, commerce, product and operations.
- Depreciation: As explained in Section 4.4, we depreciate the systems and research & development costs. This sheet shows how we construct the depreciation over economic lifecycle of seven years.
- Financing costs: The sheet contains the expenses subtracted from operating income to determine income before taxes.

*General sheets:*
The last group consists of other additional sheets for the P&L, these are:

- Parameters: This sheet contains the assumptions as parameters in the model. In this sheet, Company-X can easily change the parameters throughout the model.
- Growth: This sheet shows the expected growth rate of Company-X. This is used to determine the revenue and cost of leased systems.
- Price: This sheet uses the expected costs to determine Company-X's preferred system price.

- Revenue: This sheet determines Company-X's expected revenue per year. This is based on the growth rate and the current system price of Company-X.
- Sensitivity results ‘27 ‘28: This sheet shows the sensitivity analysis results performed for the model per variable, see Figure 19. The monetary results on the P&L are excluded from the figure due to confidentially reasons. We present this in Chapter 5.
- Scenario results ’27 ’28: This sheet shows the scenario analysis results performed for the model, see Figure 20. The monetary results on the P&L are excluded from the figure due to confidentially reasons. We present this in Chapter 5.

*Figure 19: Worksheet presenting scenario results per variable of years 2027 and 2028.*

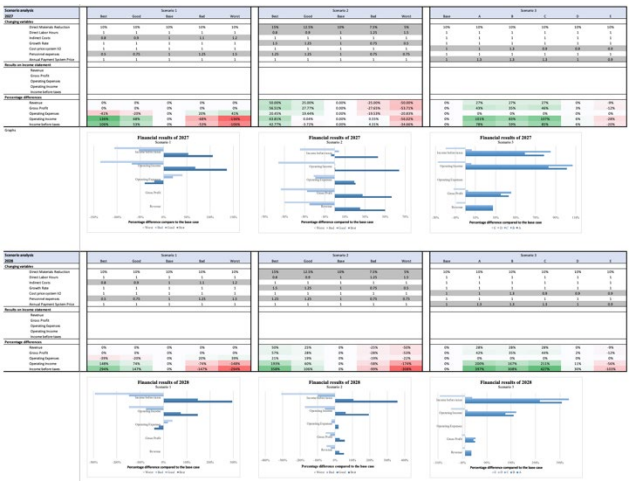


*Figure 20: Worksheet presenting financial results per scenario of years 2027 and 2028.*

# APPENDIX III – RESULTS OF THE ONE-AT-A-TIME ANALYSIS

The results of the analyses are added as separate sheets in the Excel model. The financial results of the one-at-a-time analysis and scenario analysis are shown. The percentage differences from the base case of each variable are determined. The base case represents the situation we used in the new model. This gives Company-X a complete understanding of the amounts involved and the change in the result in the situation of another interval. The graph's vertical axis displays the percentage differences between the base case we established and the changes according to the interval. The horizontal axis presents the results for each component of the income statement.

Direct material V2 system:

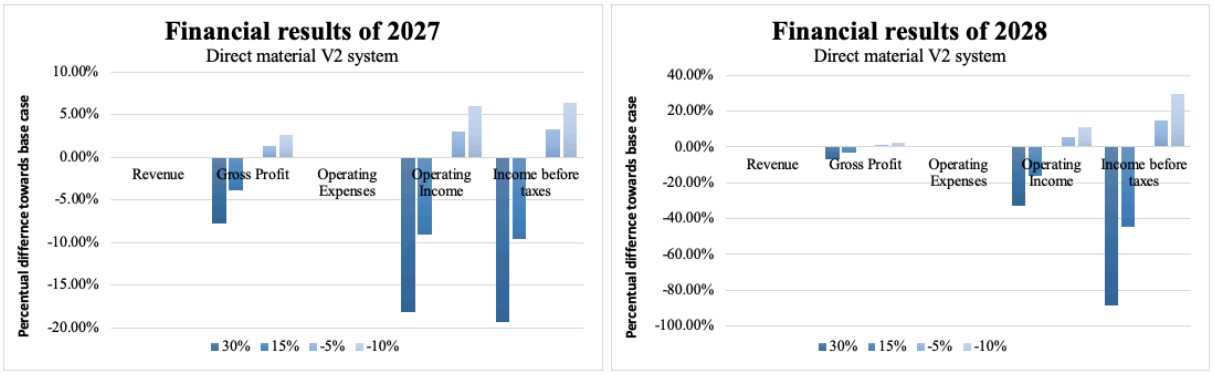



*Figure 21: Percentual differences of cost price V2 system between base case (0%) and intervals [30%; 15%; -5%; -10%] for 2027 and 2028.*

Direct material cost reduction:


*Figure 22: Percentual differences of direct material cost reduction between base case (10%) financial results and interval [15%; 12,5%; 7,5%; 5%] for 2027 and 2028.*

Direct labor hours:

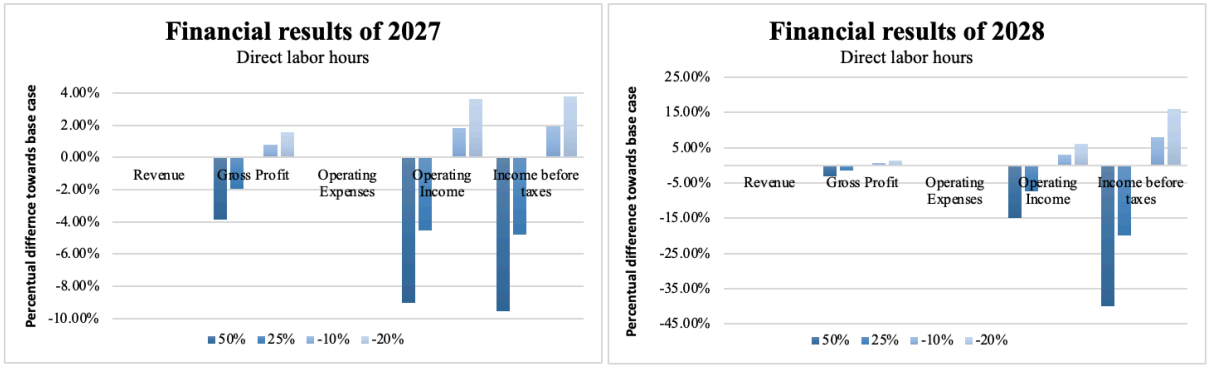



*Figure 23: Percentual differences of direct labor hours between base case (0%) and intervals [50%; 25%; -10%; -20%] for 2027 and 2028.*

Indirect costs:

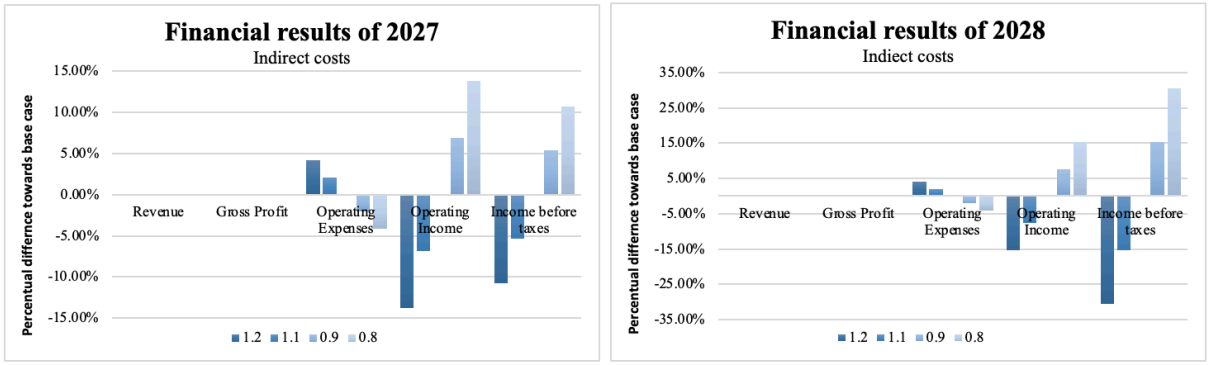



*Figure 24: Percentual differences of indirect costs between base case (0%) and intervals [20%; 10%; -10%; -20%] for 2027 and 2028.*

Growth rate:

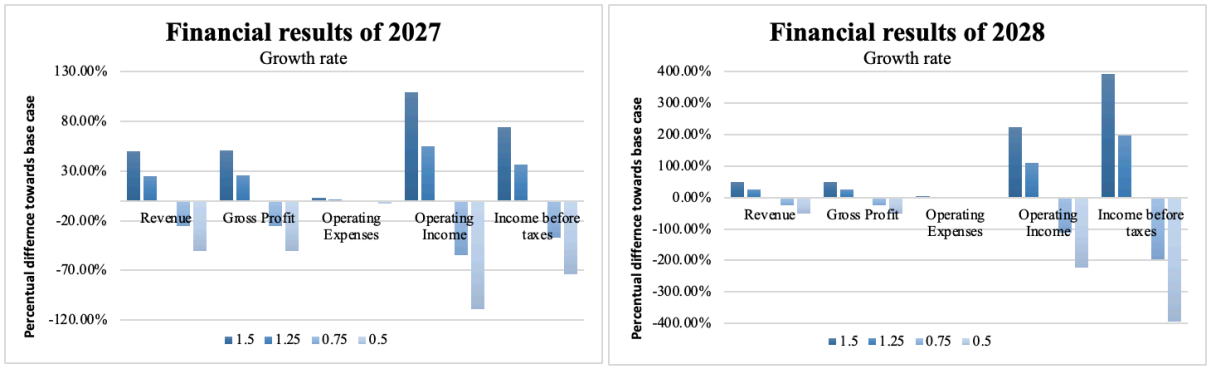



*Figure 25: Percentual differences of growth rate between base case (0%) and intervals [50%; 25%; -25%; -50%] for 2027 and 2028.*

Personnel expenses:

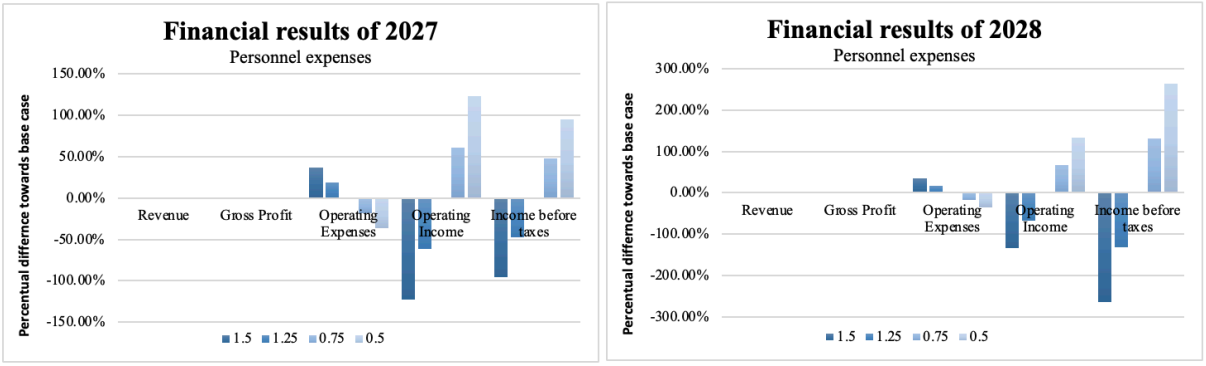



*Figure 26: Percentual differences of personnel expenses between base case (0%) and intervals [50%; 25%; -25%; -50%] for 2027 and 2028.*

Annual payment system price:

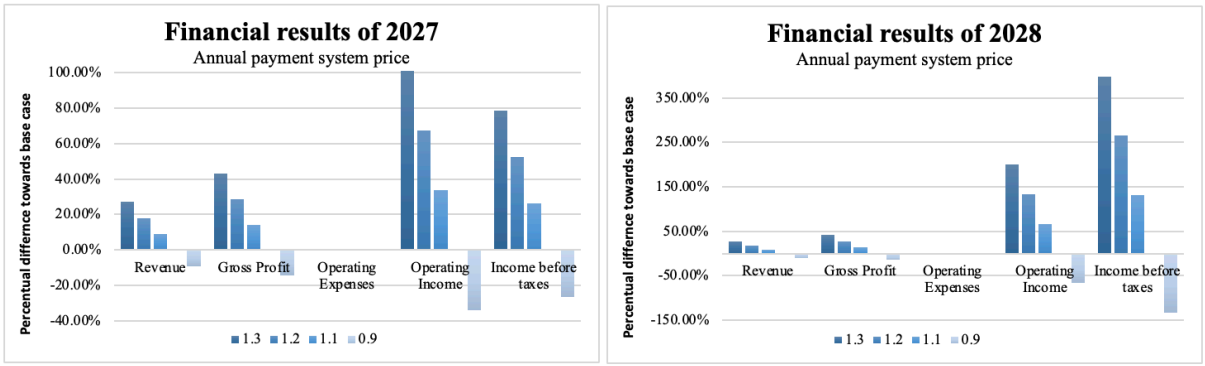



*Figure 27: Percentual differences of annual payment system price between base case (0%) and intervals [30%; 20%; 10%; -10%] for 2027 and 2028.*

# APPENDIX IV – RESULTS OF THE MULTIPLE VARIABLE ANALYSIS

We present the results of the various situations prepared in Chapter 5. The graphs show the percentage difference between the base case as we use it in the model and the different scenarios we set up. A higher percentage signifies a greater deviation from the outcomes of the base case.

Situation 1 – Indirect cost efficiency:

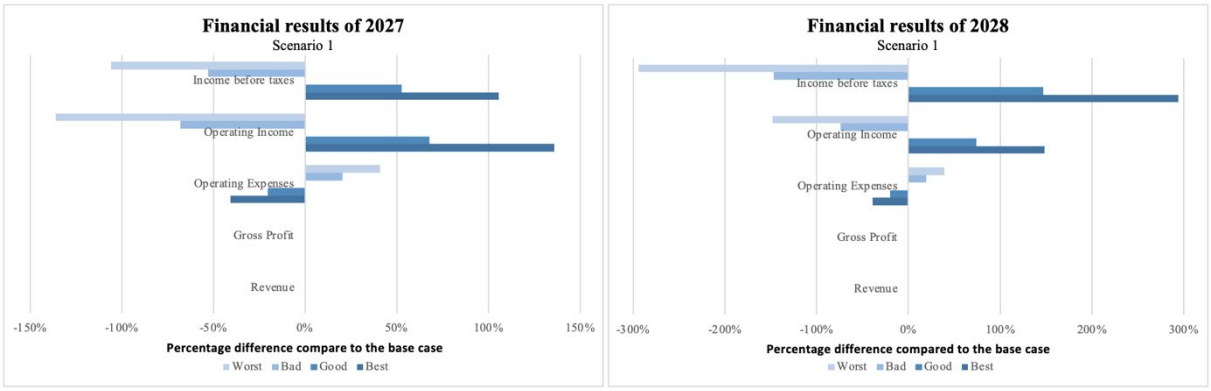



*Figure 28: Percentage differences of situation 1 between base case and intervals Best/good/bad/worst for 2027 and 2028*

Situation 2 - Growth:

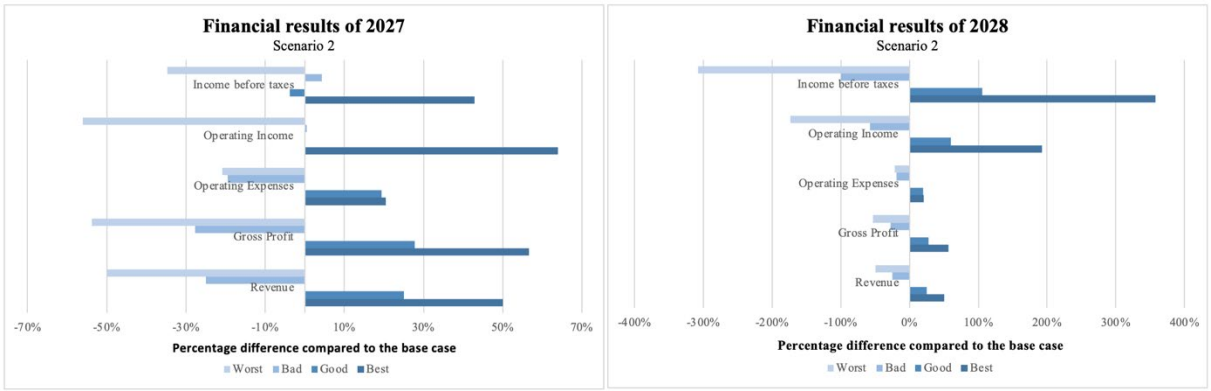



*Figure 29: Percentage differences of situation 2 between base case and intervals Best/good/bad/worst for 2027 and 2028*

Situation 3 – Pricing and costs:


*Figure 30: Percentage differences of situation 3 between base case and intervals Best/good/bad/worst for 2027 and 2028*

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