



Budgeting preparation for a merchandising company
Case company: Nhat Quang LLC

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<p>This thesis focuses on setting up a budgeting process for Nhat Quang limited liability company, which is an electrical equipment and supplies retailer founded in 2014. The thesis's outcome is an Excel budgeting tool, financial analyses and user tool guide. This thesis is a tool for the entity to operate financially and make the right decisions in business.</p> <p>This thesis is a product-based thesis, including a theoretical part and an empirical one, which follows the zipper structure. There are five project tasks to be implemented in succession. The first and second tasks include designing the theoretical framework and establishing the relationship between theoretical and empirical sections. Cost behaviour and financial situation analysis are addressed in task three. The result of the thesis is illustrated in task four, which is the process of building a master budget and performance evaluation. The master budget comprises an operating budget and a financial budget, which describes the business result anticipation in the next period. Based on different operating modes, the author designs separate budgets to show profitability from each operating mode clearly. The performance analysis is created based on the master budget by using financial ratio analysis, profitability analysis, and cost-volume-profit analysis. Next, the toolkit is introduced with detailed instructions and steps on how to utilize the budget package. The last task describes the evaluation of the project and the author's reflection on the learning.</p> <p>The author conducted interviews with the owner, and the internal accountant of the company to collect primary data. Desktop research including documentaries, textbooks and articles study was the secondary research method. Microsoft Excel and Microsoft Word were tools that assisted the author to facilitate the project.</p> <p>Overall, the outcome makes the budgeting process more well-organized, which assists the manager to identify the reason when the loss occurs. There were some challenges during the process of implementation. However, the project helped the author develop problem-solving and project management skills.</p>	
Keywords Master budget, cost behaviour, financial analysis, cost-volume-profit analysis, profitability analysis.	

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1 Introduction

In this chapter, the author presents the introduction of the thesis project, along with the commissioning company. The background of the thesis, project objectives with five project tasks are built to support the thesis project idea. The international aspect, anticipated benefits and critical concepts related to the thesis topic are well explained, to provide the reader academic knowledge of the area.

1.1 Background

Building a budgeting plan is essential in operating business, which is considered as one of the most crucial processes in the finance department. To explain this, Goel (2015, 6) indicates that the key success in financial management is planning and controlling. Planning is how the manager allocates funds and resources in a promising manner. Controlling, on another hand, means tracking and keeping an eye on the business result. The budgeting process includes both planning and controlling, without which, the company, especially a big corporation, can go out of the finance track.

A budget can guide the manager on how to balance the cost structure. The budgeting process will provide answers to solve questions, such as; the amount of money needed to invest in operating activities, comparisons between actual financial results and expectations (Shim, Shim & Siegel 2011, 1). Therefore, to improve performance activities and business results, building a budgeting tool with analysis, which applies to the specific company will bring benefits in the long run.

As a developing country, there are many international resources and investments in start-ups in Vietnam. There are multiple domestic and international foundations with the cooperation of the Vietnamese government that create an ecosystem for start-ups with programs and sessions to share knowledge of entrepreneurship, at the same time provide the advice and support from investors and enterprises (Startup Vietnam Foundation 2018). Vietnam is a promising environment for entrepreneurs and business students to ignite their dreams.

However, most entrepreneurs in Vietnam fail to seek the right way to operate, which leads to failure. 82% of start-ups fail because they lack knowledge of financial management and understanding of how to make use of cash flow (Preferred CFO 2018). The case company

is a start-up that has been established for a few years. However, they have not been enduringly successful due to many reasons. One of them is the lack of proper accounting, budgeting, and analysis systems.

There is no actual figure analysis to show the vulnerability in business management in many small companies in Vietnam. Based on academic knowledge, the thesis writer will set up a budgeting process that solves the common existing financial problems and scratches the strategy for future development. Not only the commissioning company but also the other start-ups can make use of the outcome of the thesis.

The thesis writer majors in financial management. Budgeting is one of her interest areas to deepen knowledge. Creating a budgeting sheet is not the most challenging skill, but how to use the budgeting process to translate the figure and financial result into analysis and strategy is the skill the writer wants to achieve. Understanding the importance of budgeting and accounting in business operations, the writer wants to find a practical tool using theory and assist the entrepreneur in managing financial issues. The author can gain not only theoretical but also practical skills by executing this thesis project.

1.2 Project objective

Currently, the commissioning company has neither a budgeting process in the finance department nor proper daily bookkeeping activities. Hence, it is required to have a tool, if necessary, to set the financial management in line. Existing financial documents and figures provided by the entity will be used to re-evaluate the cost structure and other elements in financing activities. Many analysis methods are applied to have different points of view in the case.

This thesis is a project/product-based thesis which includes project objective, along with project tasks which are presented below:

Project Objective: This thesis aims to set up a budgeting analysis tool for Nhat Quang Limited Liability Company (LLC).

- PT 1: Designing a theoretical framework for the project.
- PT 2: Analyzing documentary and interview outcomes to figure out the standard tools and processes in creating budgeting and managerial analysis.
- PT 3: Defining cost structures of the entity.
- PT 4: Building a budgeting tool and analysis for the case company.
- PT 5: Evaluating the project.

Table 1 below displays the theoretical framework, research methods and the outcome of each project task.

Table 1. Overlay matrix

Project Task (PT)	Project Management Methods	Outcomes	Result (chapters)
PT 1. Designing a theoretical framework for the project-based budgeting theories.	Documentary/text-books research	- Purpose of creating a budget and managing system - Theory analysis - Understanding components in the budgeting process - Project timelines	2
PT 2. Finding the common tools and process in doing budgeting and analysis	Interview Desktop research	- Overview of budgeting and financial analysis process - Components for building the tools	4
PT 3. Defining cost structures of the entity	Interview Microsoft Excel	- The company financial situation - Cost analysis and forecasting	3
PT 4. Building budgeting tool, financial analysis and toolkit for the case company	Microsoft Excel	- Budgeting tool framework and other financial analysis	4 5 6
PT 5. Evaluating the project	Reviewing process	- Reflection on learning - Recommendations	7

1.3 Project scope

This project focuses on the development of a budgeting analysis tool and business performance evaluation that is based on financial activities of the case company with the usage of financial statements and other financial indicators. The author tests the tool by applying to commission entity profiles.

The resource used for analysis is master budget which includes financial budget and operating budget. The outcome is an excel package tool which can provide practical and improved analysis for start-ups in which same problems with internal management exist. The analysis can help managers predict the profitability and adjust cost in operating activities.

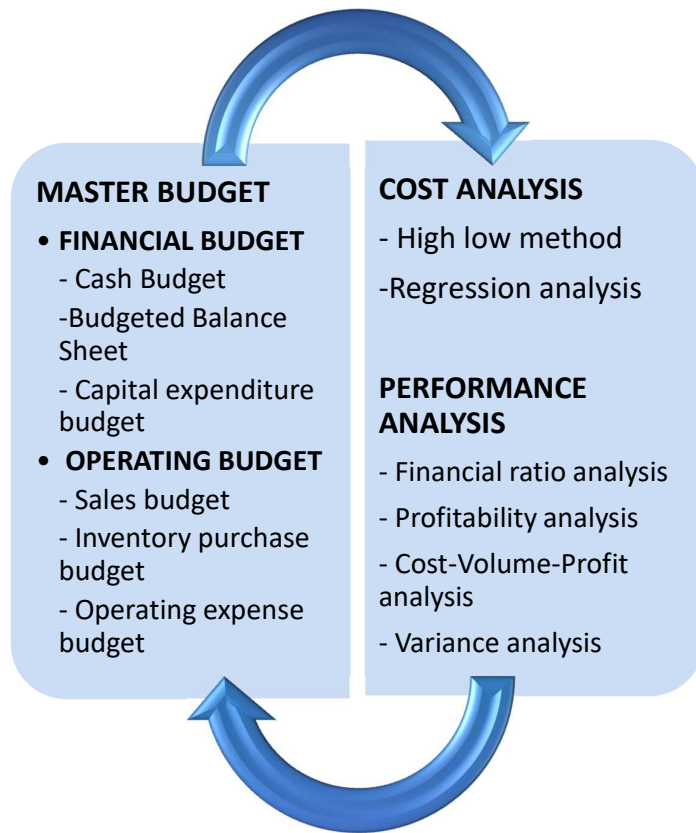


Figure 1. Project scope

The company's industry or economic environment's in-depth analysis is not the target of the thesis. The thesis does not analyze the work efficiency of other departments, such as marketing, logistics, but to have the big picture of how to improve based on financial analysis. The thesis does not apply to every company cases or big corporations because the aim of the thesis is for start-ups who do not have proper accounting and budgeting process and do not have resources yet to work it out.

1.4 International aspect

The Vietnamese economy has experienced unexpected growth since 2007 after joining WTO (World Trade Organization 2007). The start-up ecosystem has been prospering with lots of support from government programs, for example, NATECD (National Agency for Technology, entrepreneurship and commercialization development), NATIF (National Technology Innovation Fund) and IPP (Finland-Vietnam Innovation partnership fund) (Vietnam briefing) (Vietnam Briefing 2017). As a result, many start-ups are planning to go international after gaining particular success in the domestic market. Therefore, this project

not only helps the commissioning company to achieve sustainable success but also aims for a big picture of growth in other cities in Vietnam.

The author designs an analysis tool with international financial knowledge and research which can apply to diversified cases. Moreover, with the help of the author's advisor, the quality of the thesis is improved. In the future, if the company has the chance to grow out of Vietnam, the thesis can be a studying document for international employees.

The language of the thesis is English which is valid for all international business students. Students who have the same interest in the area discussed can have better views and materials to use for their study and future work. The value is translated to Euro as the currency to maintain the international aspect. Entrepreneurs in Vietnam and around the world who do not have much finance and human resources can refer to the thesis. Therefore, the outcome can be applied not only to Vietnamese start-ups but also international ones.

1.5 Benefits

The author can apply and enhance her knowledge in financial accounting, especially in the budgeting area by working with real data. Especially, researching, gathering information and applying data, which are practised by writing this thesis, are important self-study and self-development skills needed in the future career. This thesis is a pedal for the author to have the competence to work on more profound projects in the future.

More importantly, the commissioning company can adopt a new budgeting tool in order to have a diversified analysis in its business operation. Based on that, the manager can adjust the cost and have plans to maximize profitability while undertaking qualified sustainable performance. The thesis provides the means as an opportunity for the case company to have a better picture of the business's financial situation.

The outcome of the thesis is a reference for entrepreneurs, who seek for international budgeting process with analysis. Moreover, it is business students who need practical documents on how academic knowledge is applied in case companies.

1.6 Key concepts

Managerial accounting is the activity of utilizing accounting information by interpreting and analyzing to assist management activities and decisions. The purpose is to maximize profit while minimizing costs. (Madegowda 2016, 2.)

Budget is an expression of a recommended plan that is designed for business operation management. A budget is also a guideline that a company can follow based on financial and non-financial indicators, which also shows the manager's expectation on sale revenue and profitability. (Datar & Rajan 2018, 218.)

Cost-Volume-Profit analysis provides managers with the understanding in the relationship among sale, cost and profit and how one affects others (Dittman 1979, 358). C-V-P analysis redesigns the available forecast for the manager to achieve profit goals. (Braithwaite 1974, 2.)

Flexible budget is the financial plan that shows the sales revenue calculated with different range of output volumes in the period to evaluate performance. (Braun, Tietz & Harrison 2010, 611.)

Master Budget is the combination of financial budgeted statements: budgeted cash flow, budgeted income statement, budgeted balance sheet, which is built based on the manager's decision (Datar & Rajan 2018, 218). Discussing the same topic, Braun, Tietz & Harrison (2010, 479) states that the master budget consists of the operating budget and financial budget.

Profitability analysis allows the manager to figure out whether business activities are carried out well that makes a sustainable profit for the business to grow forward. Profitability analysis also sorts problems that are holding the business back. (Plowman 2001, 13.)

Variance analysis is the analysis based on the difference between actual and planned performance result. The variance is calculated based on material, labour, overhead and sales margin variance. (Drury 2007, 417.)

1.7 Case company

Nhat Quang limited liability company (Nhat Quang LLC) was founded on March 31, 2014, with the tax code 2600909961. The company is located in Viettri city, Vietnam. Nhat Quang LLC is an electrical equipment and supplies retailer where the main products are switches, compacts, flat wires, sockets and junction boxes. Sales revenue of the company in 2018 was approximately 325 000 €, and net profit was 50 000 €. There are six fulltime employees, a part-time accountant, the owner and wife working in this company.

The company was established four years ago and achieved some profits to maintain the business. However, the development does not come to the manager's expectations. There could be many factors related to marketing, customer service, logistics or expenditure. During the operation, the manager has not invested in internal management or control. This year, the company has contracts with other retail stores that turn the business to be not only B2C (business to customer) but also B2B (business to business). The previous years' sales growth is from 1-3%. This year, contracts with other companies expectedly increase sales revenue up to 5% compared to the previous year. The manager decided to contact the thesis writer to start from the finance point of view to see a big picture of business activities and develop a pricing, budgeting and managerial accounting for the company.

2 Project management design

2.1 Research design

The project management design includes five main phases, which is illustrated in figure 2. The project management design is built based on the waterfall model. The next step is performed when the previous one is finished. The input of each phase is the output of the earlier one. In other words, each stage leads to one task outcome, which is the supplement for the next project task. (Liu & Horowitz 1989, 1280.)

The writer researches theories throughout the implementation of the project. In the first step, documentary research from articles, textbooks and lectures are used to provide a basic understanding of budgeting and its components for audiences. By interviewing, desktop research and outcome from the first task, common tools and process used in budgeting are defined. The author needs to understand the cost structure as well as the financial situation of the company by carrying out the task 3. With the theoretical framework and the data collected, the budgeting and analysis tool is built and applied directly to company case. Last but not least, the evaluation by the company's feedback and reflection on learning are brought up.

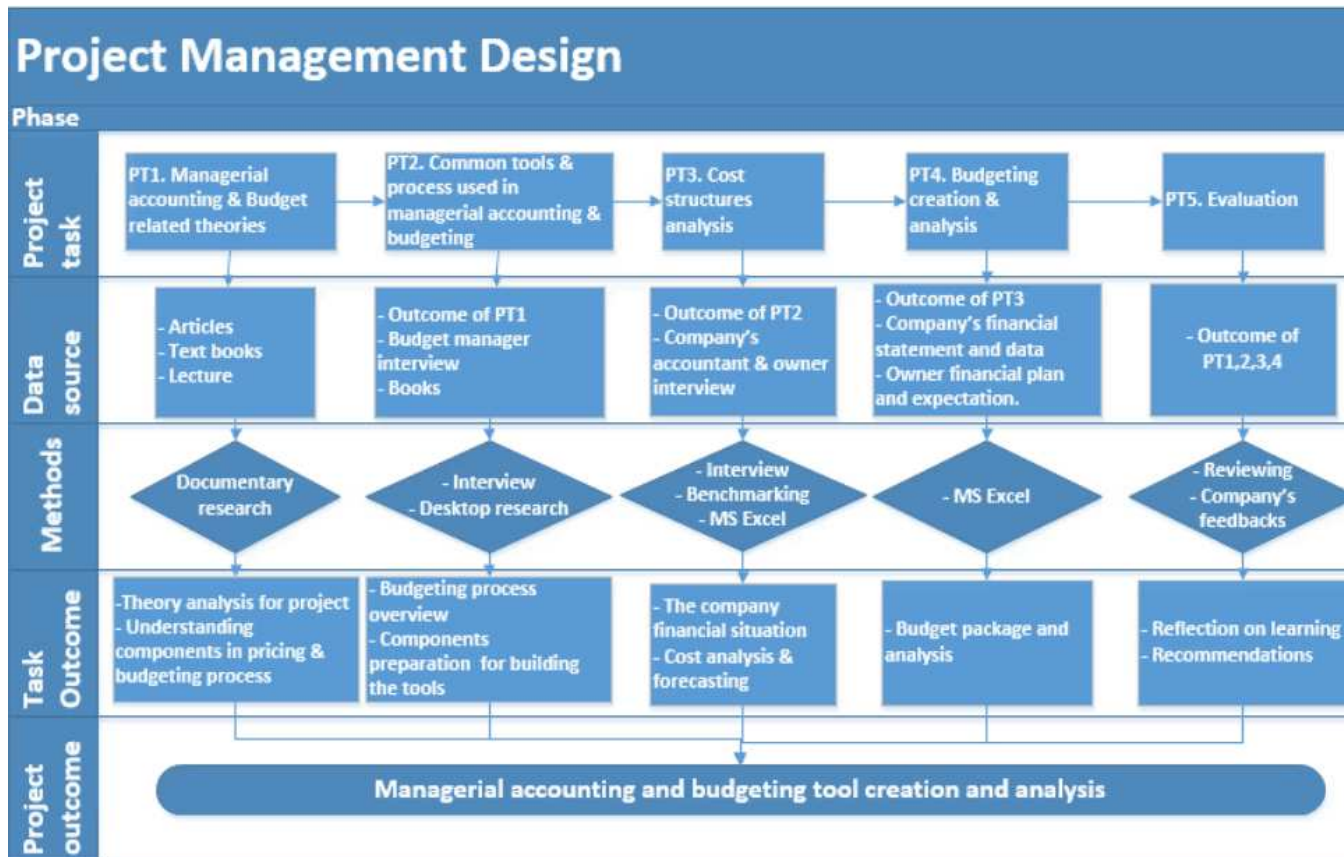


Figure 2. Research method

2.2 Data collection

Qualitative interviewing has become one of the critical tools in sciences as well as education (Brinkmann 2013, 1). Data is collected by interviewing the owner about the company's financial situation and other figures (Attachment 2). The author collected advice from the advisor when she occurred difficulty in the process. Not only interviews but also other methods were used, such as documentary research, desktop research and report analysis. The writer used not only financial figures but also explanation, suggestion and literature review to develop this topic. For these reasons, using the qualitative method is the most appropriate way to conduct.

The data was not collected merely, but the author integrated it with theory and methodology to come to findings. According to Brinkmann (2013, 93), useful data from the interview, the comparison between findings and literature review can bring value to methodological issues.



Figure 3. The Data-Theory-Methodology Triangle (Brinkmann 2013, 93)

2.3 Operation mode

After four years of operating a traditional retail shop, the owner decided to launch online retail to boost the efficiency of monthly sales. People that come to the store are mostly locals and know about the store by word of mouth. The owner wants to expand the business to other towns. To implement this plan, first, online retail is open to get popularity and reach customers easier. The marketing plan will be launched next year, via social media, which is a potent marketing tool nowadays, along with emails and blogs.

As characteristics of different operation modes vary, the budget implementation is separated. For example, online sales include web hosting and e-commerce platform expense,

while the traditional retail includes salesperson hiring expense. The analysis of growth in revenue in each mode is shown clearly if the data of traditional and online retail are separated. However, the final result is combined in each budgeting package to show the overall growth of the business.

The traditional retail shop, in the first two years, is still the primary business operation mode. Expenses and investment in operating retail store are shown in chapter 3. The owner will launch the online retail shop in the second year of the budgeting period. An additional expense to launch an online retail shop is an e-commerce platform expense. The e-commerce company chosen is Shopee. The reason is that Shopee has been becoming the leading online shopping platform not only in Vietnam but also other Southeast Asian countries such as Singapore, Malaysia, Thailand, Indonesia, Philippines and Taiwan (Shopee 2015). In the beginning, with efficient web tools, the online retail shop is targeted to account for 15% to 17% of total revenue, which is shown in Attachment 3.

3 Cost analysis

Costs play an essential role in the business as the goal of business activities is to reduce cost and maximize profitability. Therefore, a thorough understanding of how different types of cost behave helps managers to control costs and make the right decisions in assigning a budget. In this chapter, the author presents types of cost and different ways of analyzing and forecasting, such as high-low method and regression analysis.

3.1 Cost behaviour

There are many types of cost, and different costs behave differently in term of volume. Depending on activities and certain types of expenditure, the cost can be categorized in different ways. For example: based on variability, there are variable costs, fixed costs and mixed costs. Based on function, there are production cost, administration cost, distribution cost, and selling cost. Regarding the basis of nature or elements, there are labour cost, material cost and other expenses, which are further subdivided into direct costs and indirect costs (Periasamy 2009, 308).

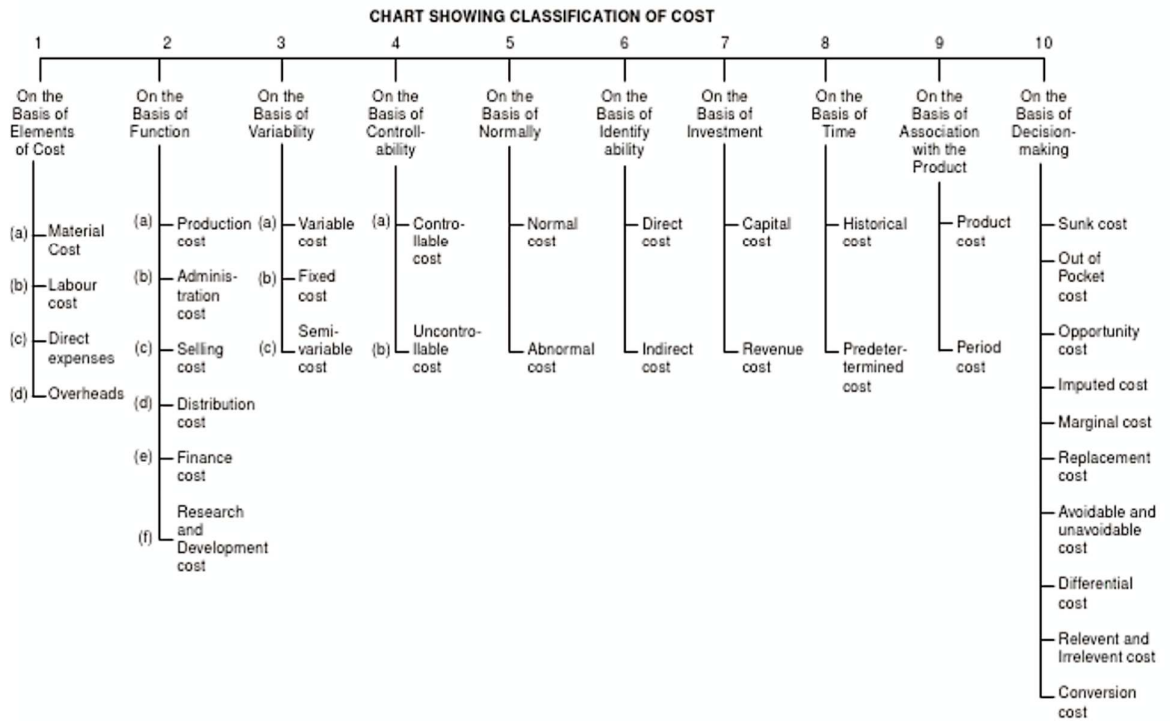


Figure 4: Classification of cost (Thukaram 2000, 37)

In this thesis, the author focuses on variable costs, fixed costs, mixed costs to analyze cost behaviours. Among them, some are affected by the change of volume, and some are

constant. Understanding in cost is an excellent tool for the manager to control the cost, analyze cost-volume-profit, make short-term choices and modify the budget.

Variable costs are expenses which change in proportion with the volume and do not stay constant when there is fluctuation in production activities. If the quantity of products increases, the variable cost will rise and vice versa. As stated by Sower & Sower (2011, 44), the variable cost per unit stays constant despite the volume change. The variable costs include labour cost, material cost, product supplies, commission and freight out. The formula represents the characteristics of variable cost:

- Total Variable Cost = Total Quantity of Output * Variable cost per Unit

Fixed costs are operating expenses that are independent of any business activities and do not change even if there is any fluctuation in production activities. The company cannot avoid this type of costs because it is necessary to run the business. When there is an increase in volume, total variable costs rise, but the variable cost per unit remains, and the fixed cost per unit decrease (Kohli 2009, 33). Examples of fixed costs are rent, utility expenses, insurance, depreciation and salary. If there are no mixed costs, fixed costs are calculated:

- Fixed costs = Total cost – Variable costs * Quantity

Mixed costs (semi-variable costs) contain both elements of fixed costs and variable costs. They fluctuate with the change of the volume but not in proportion to volume like variable cost and cannot be avoided completely like fixed cost (Hussey& Ong 2011, 25). For example, the salary of personnel with a commission is a mixed cost because the salary is the fixed cost and commission is the variable cost. Electricity expense is also mixed cost because it increases with production, but if the production decreases, the electricity is still used in the factory. The formula of mixed cost:

- $Y = a + b * X$.

Y: mixed cost

a: fixed cost

b: variable cost per unit

X: unit

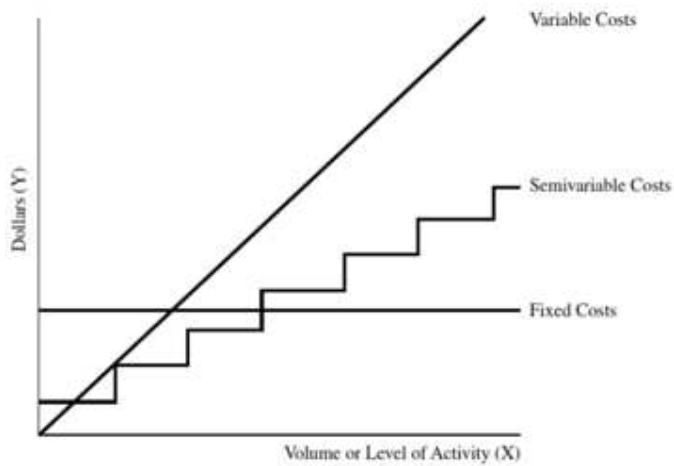


Figure 5: Example of cost behaviour patterns (Shim & al. 2011, 121)

The graph shows how different types of cost behave. A line represents fixed costs because the change in the level of activity (X) does not affect the fixed costs. Variable costs' line is growing onward with the increase in volume (X). Mixed costs (semi-variable cost) have the shape of a ladder because of mixed characteristics of both fixed costs and variable costs. The pattern grows, but at a period, it is a straight line.

Nhat Quang LLC's store is four years old now. Therefore, renting expenses and stock are saved.

Table 2. Cost Structure of Nhat Quang LLC

Number	Description	Type of cost
1	Phone bills	Mixed cost
2	Utilities (water, electricity, trash, etc)	Mixed cost
3	Office equipment (table, chair, paper, printer, etc)	Investment cost
4	Technology equipment (computer, television, router, camera)	Investment cost
5	Internet	Fixed cost
6	Travel cost	Mixed cost
7	Store fixtures (shelving, display racks, cases)	Investment cost
8	Inventory	Variable cost
9	Inventory shrinkage	Fixed cost
10	Business insurance expense	Fixed cost
11	Advertising and marketing	Fixed cost
12	Accounting services	Fixed cost
13	E-commerce platform	Fixed cost
14	Web hosting	Fixed cost
15	Transaction costs	Fixed cost
16	Salary	Fixed cost
17	Depreciation expense	Fixed cost
18	POS system	Fixed cost
19	Bank account	Fixed cost
20	Storage rent	Fixed cost

3.2 High-low method

The user utilizes the high-low method is a technique when they want to separate the variable costs and fixed costs in mixed costs by using two extreme data points. At the same total costs, the high-low method measures the highest level of activity and the lowest level of activity (Woodroof, Ward & Burg 2003, 1). Even though this model is simple to use, the users should be attentive because the analysis can be twisted due to the dependence on only two extreme values from limited data. Here are steps to build a high-low model:

- Step 1: Select the highest pair (costs and units) and the lowest pair (costs and units)
- Step 2: Apply the data to the formula to find the variable cost rate (CFI 2015)

$$\text{Variable cost per unit} = \frac{\text{Highest activity cost} - \text{Lowest activity cost}}{\text{Highest activity units} - \text{Lowest activity units}}$$

- Step 3: Calculate the fixed cost portion:
 - o Fixed costs= Highest activity cost – (Variable cost per unit * Highest activity units)
 - Or
 - o Fixed costs= Lowest activity cost – (Variable cost per unit * Lowest activity units)

With a limited given data set, users can anticipate the cost incurring next period by developing a high-low model. By predicting variable cost rate using highest and lowest pairs of data and assuming that fixed costs are constant at both levels, it is easy for accountants

to understand cost behaviour and accomplish cost-volume-profit analysis (Cafferky & Wentworth 2014, 51). However, there is variation in costs which need to be taken into consideration by other methods of cost control.

In the company case, utilities, accountants consider phone bills and travel cost as mixed cost. The author takes the shipping cost as an example of how to use the regression method to determine the variable cost and fixed cost in travel or shipping expense. Below is the shipping cost last year, over 12 months:

Table 3. Shipping cost monthly in 2018

Month	Units sold	Shipping cc
Jan	400	€ 820
Feb	323	€ 670
Mar	425	€ 850
Apr	600	€ 1 050
May	444	€ 900
Jun	342	€ 770
Jul	290	€ 620
Aug	487	€ 950
Sep	537	€ 970
Oct	569	€ 1 000
Nov	302	€ 720
Dec	427	€ 850

- Step 1: Highest cost: 1050, highest units: 600.
Lowest cost: 620. Lowest unit: 290
- Step 2: Variable cost per unit = $\frac{1050-620}{600-290} = 1.4$
- Step 3: Fixed cost = $1050 - (1.4*600) = 210$

Variable cost per unit is 1.4 € and fixed cost is 210 €.

3.3 Regression analysis

Regression analysis is a statistical model which analyses the relationship among variables, focuses on dependent variables and independent variables. According to Freund, Wilson & Sa (2006, 36), when one independent variable changes, other independent variables are fixed, the regression analysis shows how the dependent variable varies. The average value of dependent variables under conditional expectation is measured.

In this case, regression analysis is used to provide cost anticipation. The simple form of the regression analysis model is a linear regression and ordinary least square (OLS) method. In the linear regression model ($Y = a + bX$), OLS is used to estimate parameter

values with explanatory variables by reducing the difference among dependent variables. By minimizing squares of difference, the user can find a line which represents the regression relationship. (Draper & Smith 1998, 16).

The error between the observed value of the dependent variable and the estimated value is Q. According to Shim & al. (2011, 290), the equation is:

- $Q = Y - Y'$.

Where

Y: the value observed of the dependent variable

Y': estimated value with $Y' = a + b \cdot X$.

As the OLS method aims to minimize squares of the difference among variables, we have equations:

- Minimum $\sum Q^2 = \sum (Y - a - b \cdot X)^2$

Because $Y = a + bX$ where a is the fixed cost and b is variable cost, Shim & al. (2011, 290) states that total cost equals the summary of variable cost plus total fixed cost.

- $\sum Y = n \cdot a + b \sum X$

Where:

$\sum Y$: total value

n: number of data taken into count

a: fixed cost

b: variable cost

$\sum X$: the total quantity

Multiple $\sum X$ into both sides of equations we have:

- $\sum XY = n \cdot a \sum X + b \sum X^2$

Solving the equation, we have the result for a and b to establish the new equation for cost predictions:

$$b = \frac{n \sum XY - \sum X \sum Y}{n \sum X^2 - (\sum X)^2}$$

$$a = \Delta Y - b \Delta X$$

Where $\Delta Y = \frac{\sum Y}{n}$ and $\Delta X = \frac{\sum X}{n}$

⇒ $Y' = a + b \cdot X'$ where Y' : forecasted data, X' : budgeted data

Using regression analysis, the owner can forecast the increase in marketing expense when expanding social media marketing. The case company has a plan of expanding social media marketing campaign in 2020. The marketing expense contains many kinds of expenses such as leaflets, social media marketing, and advertisement on newspaper and radio ads. The independent variable is social media marketing, which is the number of times the company advertises on social media. The dependent variable is the marketing expense in euros.

Table 4. Digital marketing data in 2018 for regression analysis

Month	Social media marketing	Marketing expense Y	XY	X ²	Y ²
1	82	€ 922	€ 75 604	6724	€ 850 084
2	67	€ 830	€ 55 610	4489	€ 688 900
3	85	€ 988	€ 83 980	7225	€ 976 144
4	105	€ 1 275	€ 133 875	11025	€ 1 625 625
5	90	€ 1 002	€ 90 180	8100	€ 1 004 004
6	77	€ 910	€ 70 070	5929	€ 828 100
7	62	€ 816	€ 50 592	3844	€ 665 856
8	95	€ 1 120	€ 106 400	9025	€ 1 254 400
9	97	€ 1 170	€ 113 490	9409	€ 1 368 900
10	100	€ 1 200	€ 120 000	10000	€ 1 440 000
11	72	€ 889	€ 64 008	5184	€ 790 321
12	85	€ 965	€ 82 025	7225	€ 931 225
TOTAL	1017	€ 12 087	€ 1 045 834	88179	€ 12 423 559

From the table, we can analyze:

$\sum X = 1017$; $\sum Y = 12087€$; $\sum XY = 1045834$, $\sum X^2 = 88179$; $\sum Y^2 = 12423559 €$

$\Delta X = 1017/12 = 85$

$\Delta Y = 12087/12 = 1007.25$

$$b = \frac{n \sum XY - \sum X \sum Y}{n \sum X^2 - (\sum X)^2} = \frac{12 \cdot 1045834 - 1017 \cdot 12087}{12 \cdot 88179 - 1017^2} = \frac{257529}{23859} = 10.79$$

$a = \Delta Y - b \Delta X = 1007.25 - 10.79 \cdot 85 = 92.5$

We have the formula: $Y' = 92.5 + 10.79 \cdot X'$

The history data showed the average time advertisement was posted in social media which was each month 85 times. The company wants to increase the amount to 130 times a month:

$Y' = 92.5 + 10.79 \cdot 130 = 1496 €$

The forecasted marketing expense in 2020 is 1496 € each month.

To check the efficiency of this tool, we can use Excel for regression analysis. Regression in Data Analysis function, we have the summary output:

Table 5. Regression Statistics from Excel

Regression Statistics	
Multiple R	1.0
R Square	0.9
Adjusted R Square	0.9
Standard Error	41.6
Observations	12.0

Multiple R is approximately one which shows the correlation co-efficiency. In other words, it shows how strong the linear relationship between two taken variables is. The number shows a substantial positive relationship because it closes to 1. The relationship is described better in the graph below.

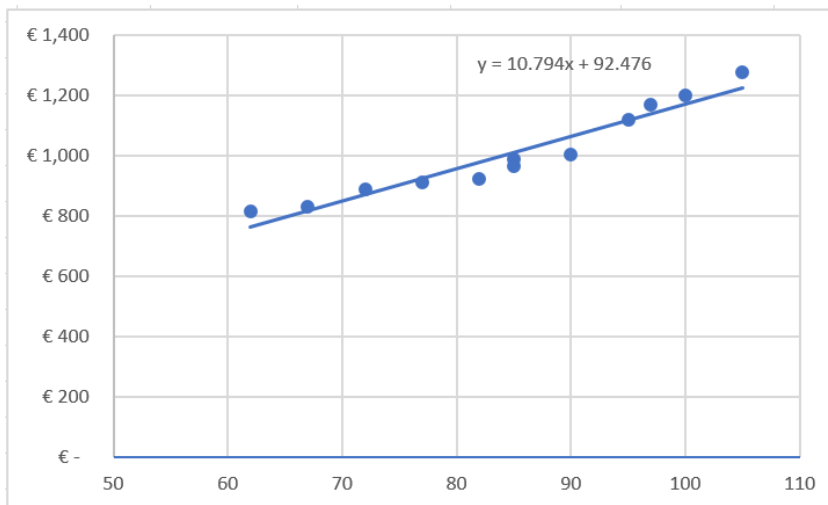


Figure 6. Linear regression graph

R square describes the number of points on the regression line, which is called the coefficient of determination. The R square, in this case, is 0.9, which means 90% of the value fits the model of regression analysis. The figure is a perfect fit. X values (independent variables) explains about 90% of Y values (dependent variables). Adjusted R Square is used for multiple regression so that it is not applied in this case.

Table 6. Analysis of Variance

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	231643	231643	134	0
Residual	10	17285	1729		
Total	11	248928			

Analysis of Variance (ANOVA) is not useful to simple linear regression analysis. However, the last data, which is Significant F shows the reliability of the result. From the table, the Significance F is 0, which means the result is very reliable because it is smaller than 5%.

Table 7. Coefficients data

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	92.5	79.9	1.2	0.3	-85.6	270.6	-85.6	270.6
Social media marketing X	10.8	0.9	11.6	0.0	8.7	12.9	8.7	12.9

From table 7, we can build the formula:

$$Y = X \text{ coefficients} * X' + \text{intercept}$$

$$\Rightarrow Y = 10.8 * X' + 92.5$$

The formula built based on the coefficient data from Excel is the same as the formula which is built manually.

Table 8. Residuals data

<i>Observation</i>	<i>Predicted Marketing expense Y</i>	<i>Residuals</i>
1	978	-56
2	816	14
3	1010	-22
4	1226	49
5	1064	-62
6	924	-14
7	762	54
8	1118	2
9	1139	31
10	1172	28
11	870	19
12	1010	-45

Residuals data demonstrates how close predicted values from actual values. For example, in the first observation, the predicted marketing expense is 978 €, and the residual is -56. We add the residual number to the predicted value, and we have actual value: 978-56=922 €.

4 Budgeting preparation and the process

This chapter briefly describes the budgeting process and types of budgeting plans that a company should prepare. Depending on the type of organization and industry, each company would need different types of plan. This chapter provides start-ups and readers basic knowledge on how different budgets tie together and what managers should do to follow the budget.

4.1 Budgeting process and plans

There are six steps in the general budgeting process. First of all, the manager sets the goals by analyzing the market and available financial resources. The manager estimates the budget. The review, approval and distribution of decided budgets are proceeded (Shim & al. 2011, 12.) After the period, the manager should perform the comparison between budget and actual business result to evaluate the performance.

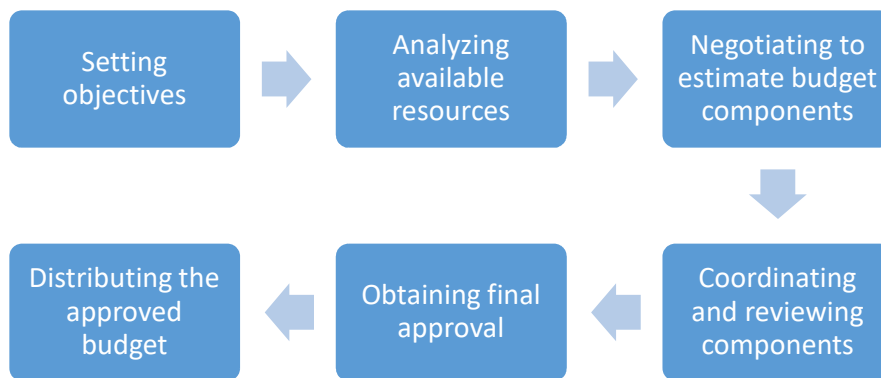


Figure 7. General budgeting process (Shim & al. 2011, 12)

There are many types of budgeting plans that a company uses. Even though the manager uses them for different purposes, they aim to one common goal of a strategic plan. The strategic plan is a complete and thorough plan that considers not only internal data but also external information (Page & Tosh 2005, 54). The strategic plan includes short-term and long-term plans, as well as profit, operational, development and contingency plans.

The manager designs a short-term plan for one year or less. It is built based on internal data, primarily managerial statements. This plan draws weekly, monthly or quarterly objectives. As stated by Reider (2014, 72), as being built in a short period, short-term budgeting plan is determinable continuously with the profit target based on the long-term plan.

There are many kinds of short-term plans that each department will create its separate plan. In a corporation, those departments are marketing, sales, research and development and manufacturing. In international companies, they distribute the responsibility by area, city and country. Lower-level managers and employees are involved in activities of building and determining short-term goals and plans based on strategic plans of the overall company. As for start-ups or small companies, the short-term plan is more straightforward as it includes all departments' activities. However, the manager needs a profound comprehensive understanding of business to distribute resources to each department. (Shim & al. 2011, 36.)

Short-term goals are based on long-term plans, which are constructed from 5 to 10 years (McMillan 2010, 9). Short-term plans are articulation to build a big robot which is the long-term plan. They are created by higher managers who have the responsibility in the future direction of business development. They are also considered as components to create strategic plans as the mission and vision of the company are represented in long-term plans.

If short-term plans use the internal information, long term plans adopt external data such as economic environment, new business trends, markets, current business result and capital. As the determination of the success or failure, it takes an effort in building a 10-year-plan, which includes goals, processes, objectives and strategies. Economy changes are barriers that need financial analysis, resources allocation and production planning from top managers. (Reider 2014, 75.)

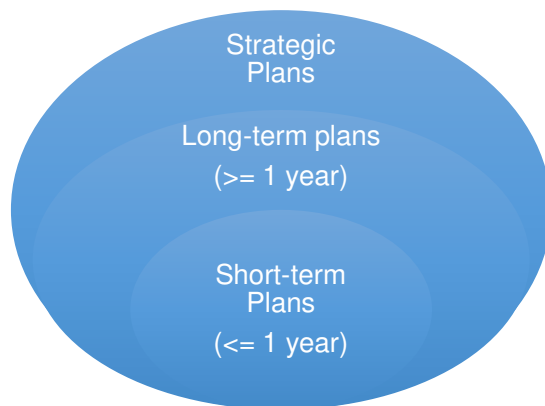


Figure 8. Relationship between short-term plans and long-term plans

Depending on the company's scene and prospect, the manager decides which types of budgeting plans will be built and used. Typically, companies need short-term plans month

by month, season by season or quarter by quarter. However, the period varies among different types of companies. For instance, fashion companies set goals and budgets seasonally. Non-profit organization's budgeting period is the fiscal year, calendar year or short-period (McMillan 2010, 2). Short-term plans include more details, which is the budget for unpredicted events or incidents, a so-called contingency plan.

Contingency planning is an activity to forecast unexpected situations which need an immediate response. Managers who take charge of contingency planning will identify the possible circumstances, indicate problems, analyze and codify the solution. Even though the executive management committee does not directly perform this task, they interfere with adjusting the plan (Blanding 1999, 522). The flexibility is needed to provide new recovery solutions in case of occurrence.

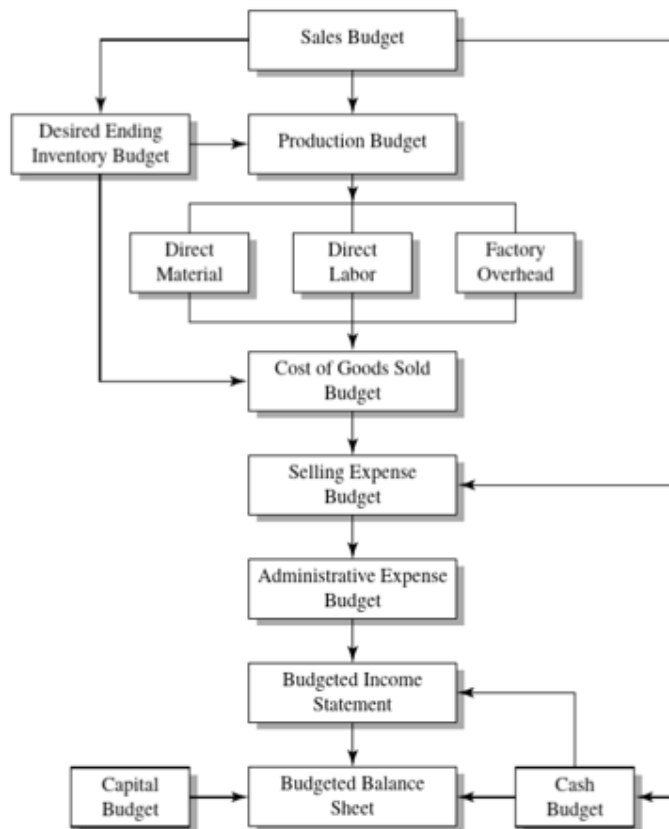


Figure 9. Master budget building process (Shim & al. 2011, 97)

In this thesis, the author builds the package of a 2-year-master budget. The exhibit above shows the master budget preparation process of the author. However, the commissioning company is a merchandising company, so that the author skips production budget preparation.

4.2 Budget implementation

A master budget is the comprehensive consolidation of all lower-level budgets, which draws an overall picture of the company, with the contribution of all members in strategic plans and objectives (Sherman 2011, 224). Due to that, it is the management tool for managers to control and direct the performance within various responsibility centres. Depending on the business sector of companies which are manufacturing, merchandise or service, the master budget presents different categories with different levels of complexity. In this chapter, the author designs the master budget. It includes financial budget, in particular, cash budget, budgeted balance sheet, budgeted balance income & capital expenditure budget. Moreover, the master budget also contains operating budget, specifically sales budget, labour budget & operating expense budget in monthly or yearly. Budgets are implemented based on historical data, financial statements, specific domestic business market environment and the owner's formulation.

4.2.1 Operating budget

Operating budget shows the income-generating activity plans and goals in the next period, which presents predicted sales and expenses. The manager can predict income, profit as well as keep track of performance and operation (Bateman & Nancy-Bateman 2012, 95). The operating budget should be built before the financial budget because sales revenue and other expenses should be set in advance to get the data for the preparation of the financial budget. As the case entity is a merchandising company, the operating budget focuses on sales budget, operating expenses budget, inventory purchase budget and budgeted income statement.

Sales budget shows the company's estimation of sales to generate the desired income. It is the starting point of building the master budget and the main factor that affects others in the master budget. Target income, the break-even point in sales, capital and inventory availability, are components to build the sales budget. Sales budget presents the expected quantity and revenue in the upcoming period. If the sales forecast deviation is significant, it can result in inventory shortages (Fabozzi, Drake, Polimeni & Peterson 2008, 161). Not only the sales team but also other departments are involved in contributing the input for sales budget because of the relationships among business departments. For example, marketing team promotions affect the number of products sold. Large companies often design a sales budget for each product, while small businesses and start-ups have a budget for the overall business.

The writer prepares sales budgets for two years for the commissioning entity, which includes the anticipation of sales quantity, sales price and sales revenue based on financial data, market analysis and owner's decision. In attachment 3, sales budgets are listed in detail monthly, quarterly and year-to-year after deducting 10% VAT, which is the VAT rate applied for electrical appliances (The Ministry of Finance of the Socialist Republic of Vietnam 2019).

In the first year of budget (2020), the number of sales in December and January is expected to increase by 20% compared to other months because of New Year sales in Vietnam. During that period, the sales price is discounted by 10%. As a result, sales revenue during January and December increases by 8%. Total sales revenue in 2020 is expected to reach 360 013 €.

In the second year (2021), monthly sales are forecasted to increase by 10% due to the first year of launching online sales. After market research and competitors' analysis, sales prices in January and December in the second year will be discounted 5% from the original price, which is half of the discount percentage in January and December 2020. Expected sales unit from the discount price is anticipated to increase by 10%. This strategy will increase total revenue in January and December up to 6% compared to the same period of 2020. Total revenue of the traditional sales budget in 2021 is 393 650 €, which is about 9% higher than the previous year.

Table 9. January and December price and sales budget analysis

Traditional sales			
Year	2020	2021	Result (increase +/-decrease -)
Jan & Dec Sales price	-10 %	-5 %	-50 %
Jan & Dec Sales unit	20 %	10 %	-50 %
Jan & Dec Sales revenue	32 108 €	34 142 €	6 %
Online Sales			
Jan & Dec Sales revenue		6 835 €	
Total Sales revenue	32 108 €	40 977 €	13 %

Online sales implemented in 2021 increases the company's total sales revenue by 31%. Based on market research on customer purchasing behaviours from the company, the expected sales quantity from online sales is 20% of traditional sales. January and December online sales implementation is the same as traditional sales, in which the sales unit grows 10% and the sales price discounts for 5%. Total online sales revenue of 2021 is 78 775 €, contributing to total revenue which is 472425 €.

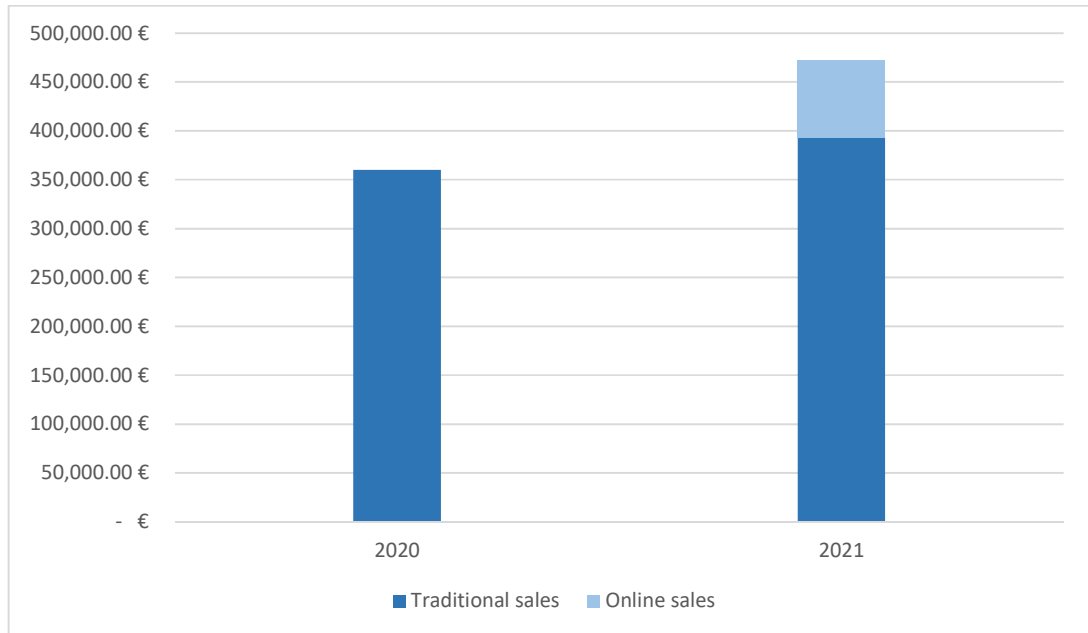


Figure 10. Sales revenue 2020 and 2021 comparison

Purchase budget shows the remaining inventory and the quantity needed for purchase to meet the sales budget. The estimation of inventory is based on the valuation of beginning inventory, ending inventory and sales estimates. Managers should understand the current situation of sales potential to set the appropriate purchase budget. Failing to do so can lead to inventory shortage or inventory redundancy. If the company lacks inventory, selling activities are intervened. If customer purchasing potential decreases and the inventory is redundant, products can become obsolete (Mazumdar & Jun 1992, 324). The **Cost of Goods Sold budget** connects with purchase budget that provides the estimation of cost of inventory needed to purchase based on required products.

$$\text{Expected Unit Sales} + \text{Desired Ending Inventory} - \text{Beginning Inventory} = \text{Required Purchase Products}$$

Based on the sales budget, the author can forecast sales unit in purchase budget. The manager believes that the company currently keeps too many goods in the stock. Therefore, he expects to maintain an ending inventory of products equal to 15% of the next month's sales. As the sales unit is expected to increase by 10% in traditional sales, the required purchase number accordingly (Attachment 4).

Each product accounts for a different percentage, approximately 30% to 35% of the selling price. In the first year of the budget, the total cost of goods sold is 112 098 €, which

account for 31% of selling revenue. In the second year, the total cost of goods sold in both traditional and online sales is 146 569 €, which is about 31% of the selling revenue. In this industry, the cost of goods sold, which accounts for 31% of selling revenue is an ordinary indicator (Attachment 5).

Table 10. Cost of goods sold per product

Product	Cost of goods sold	% of selling price
Junction Box CNS2157	1,5 €	30 %
Socket 2	0,9 €	30 %
Atomat 4.5KA 1P20A	0,9 €	35 %
Atomat 4.5KA 1P40A	1,2 €	35 %
Flat wires 2x2.5 mm2	12 €	30 %
Flat wires 2x1.5 mm2	14 €	35 %
Compact 4U-55WOL	0,9 €	30 %
Switch 10A	0,9 €	30 %

Operating expenses budget anticipates all elements of operating expenses, such as variable expenses and fixed expenses used in operating and administrating business (Temte 2003, 15). It is an essential category for income statement budget. Managers use operating expenses budget to track elements that reduce profits and adjust to compromise the quality of the operation and profitability.

Operating expenses of the case company for the traditional retail store are phone bills, utilities, internet, travel cost, inventory shrinkage, business insurance expense, advertising and marketing, accounting services, web hosting, salary, depreciation expense, POS system and bank account. There are many expenses incurred in traditional retail store operation that is used for the online retail shop at the same time, for instance: internet bills, marketing, accounting services and web hosting. Hence, these types of expenses are not separated in operating expenses budget, but additional operating expenses are stated, which are transaction costs, web hosting and e-commerce platform. In general, operating expenses account for about 45% of sales revenue. As the traditional store is the owner's residence, the rent is deducted.

Table 11. Operating expenses budget

TRADITIONAL RETAIL OPERATING EXPENSES BUDGET				
Account code	Description	Monthly	Quarterly	Yearly
	Variable costs	1,420 €	4,260 €	17,040 €
6413	Phone bills	220 €	660 €	2,640 €
6413	Utilities (water, electricity, trash,etc)	1,200 €	3,600 €	14,400 €
	Fixed costs	13,517 €	36,950 €	147,800 €
6423	Internet	200 €	600 €	2,400 €
6418	Travel cost	1,300 €	3,900 €	15,600 €
6418	Inventory shrinkage	200 €	600 €	2,400 €
6428	Storage rent	1,200 €	3,600 €	14,400 €
6415	Business insurance expense	700 €	2,100 €	8,400 €
6418	Advertising and marketing	1,500 €	4,500 €	18,000 €
6427	Accounting services	300 €	900 €	3,600 €
6417	Web hosting	200 €	600 €	2,400 €
6421	Salary	5,000 €	15,000 €	60,000 €
6414	Depreciation expense	317 €	950 €	3,800 €
6427	POS system	1,200 €	3,600 €	14,400 €
6427	Bank account	200 €	600 €	2,400 €
6426	Cost overrun	1,200 €	3,600 €	14,400 €
	TOTAL COSTS	14,937 €	41,210 €	164,840 €
ONLINE RETAIL OPERATING EXPENSES BUDGET				
Account code	Description	Monthly	Quarterly	Yearly
	Variable cost	200 €	600 €	2,400 €
6417	Transaction costs	200 €	600 €	2,400 €
	Fixed cost	500 €	1,500 €	6,000 €
6417	Web hosting	250 €	750 €	3,000 €
6417	E-commerce platform	250 €	750 €	3,000 €
	TOTAL COSTS	700 €	2,100 €	8,400 €
	TOTAL COSTS OF ONLINE AND TRADITIONAL RETAIL	15,637 €	43,310 €	173,240 €

The budgeted income statement is the combination of sales budget, operating expenses budget and inventory purchases budget. The budgeted income statement contains the same elements as the income statement, which summarizes the operating performance over a period (Temte 2003, 2). Managers can use the information from the comparison between the historical budgeted income statement and actual income statement to analyze the business performance and build a more accurate budgeted income statement for the next period.

Budgeted income statements of 2020 and 2021 are built based on other operating budget statements. According to PWC 2018, the standard corporate income tax (CIT) in Vietnam is set 20% with income below 800 000 € and from 32% to 50% for oil and gas industry under CIT law. In this case, the income tax applied is 20% of the operating income. At the end of 2020, total net income is expected to be 63 963 €, which is about 15% of sales revenue.

In 2021, the company will launch online retail with business strategy, which is expected to increase its profit by up to 50% compared to 2020. The reason for this profit escalation is because operating expenses of online sales incur only 5% more of total operating expenses (Attachment 6).

From the budget income statement, the total gross profit of 2020 is 247915 €, and the profit margin is 69%, to cover operating expenses and interest. Operating expenses are 164 840 €, which is 46% of sales revenue. Within the same year, the operating profit is 83 075 €, and the operating profit margin is 23%. In other words, 23% of the revenue is left over for taxes and interest on the debt, after paying variable costs.

In the second budgeted year, the new business strategy is the launching of online retail and minimization in the new selling mode by utilizing operating expenses in the existed operating mode for online sales. The profit is expected to increase significantly. The gross profit of 2021 is 325 856 €, and the profit margin is 69%. The increase in sales in 2021 raises the cost of goods sold so that the profit margin is the same as in 2020.

Operating expenses of both traditional and online retail in 2021 are 173 240 €, which account for 37% of sales revenue. The operating profit margin is 32%, which is higher than in 2020. If operating expenses are under reasonable control, the optimistic scenario, in this case, is that the profit of 2021 would be 25% of sales revenue (Attachment 7).

4.2.2 Financial budget

Financial budget deals with balance sheet elements such as assets, equity and liabilities. The manager predicts the income and expenses in the financial budget based on data from the operating budget. By preparing the financial budget, a company can administer cash inflows and outflows. A company can build short term or long-term financial budgets. However, to have an accurate result, the financial budget should be prepared for one or two years due to rapid changes in the business environment. The financial budget includes capital expenditure budget, cash flow budget and budgeted balance sheet. (Braun & al. 2010, 480).

Capital expenditure budget is the plan of investment in facilities and equipment or upgrading of old assets. Through the capital expenditure budget, managers can calculate the rate of return. This budget is designed in the long term because fixed assets are in usage for several years. The capital expenditure appears in the balance sheet instead of the income statement as an expense. (Braun & al. 2010, 480.)

The plant, equipment and property of the company include office equipment, technology equipment, trucks and showroom. The owner bought all of these assets since the beginning of 2016. Each asset has a different life usage, for example, life usage of office equipment is seven years, technology equipment is ten years, same as the truck, and the showroom is for 25 years. Total yearly depreciation is 3 800 € based on the straight-line method. At the end of 2021, the total accumulated depreciation is 22 800€. 27 200 € is the total remaining value after the budgeting period (Attachment 8).

Cash flow budget demonstrates the expectation of cash inflows and outflows during budgeted periods. Cash flow budget is designed based on sales, expense accounts payable and accounts receivable. The cash budget should include different types of taxes and interest incurred to have the accurate valuation of cash flow. Setting cash budgeting is vital in the budgeting process because the company must have enough liquidity to operate business activities. As stated by (Tracy 2016, 334), cash budget can help managers to anticipate the amount of capital needed to be raised to meet profit and performance requirements. Depreciation, amortization and accruals do not affect cash flow so that they are not in the cash flow budget. (Sherman 2011, 227).

When the company was founded, the owner borrowed approximately 30 000 € from family, relatives and friends without interest, to invest in equipment, showroom, and run the business. During four years of operating, the company did not pay this loan but use the profit to reinvest. To invest in more extensive inventory, maintain and expand the business in 2020, the company will take a bank loan of 50 000€ on 1st of January 2020 where the interest annually is 5% and will pay the interest monthly. The owner will pay the bank loan at the end of December 2020. Cash collection is from sales, in which 70% of sales will be collected during the month, and the rest will be collected next month. The cash payment is mostly from inventory purchase, in which 80% will be paid during the month, and 20% in the following month.

Attachment 9 shows the movement of cash in two-year periods. The profit in 2019 is expected to increase from 1% to 2% compared to 2018. 2020's income is forecasted to rise by about 5% under new contracts with other retailers. There is a continuous increase in the following months. At the end of December 2020, the end-cash balance is expected to be approximately 100 000 €, lower than the previous month because the company pays the loan at the end of the first budgeted year.

The ending cash increases continuously because the author is building the cash flow based on the optimistic scenario that every month, the company makes around the same

profit. In reality, there are some months the company can have a lower profit or loss. The budget can be adjusted during the operating period to follow the situation.

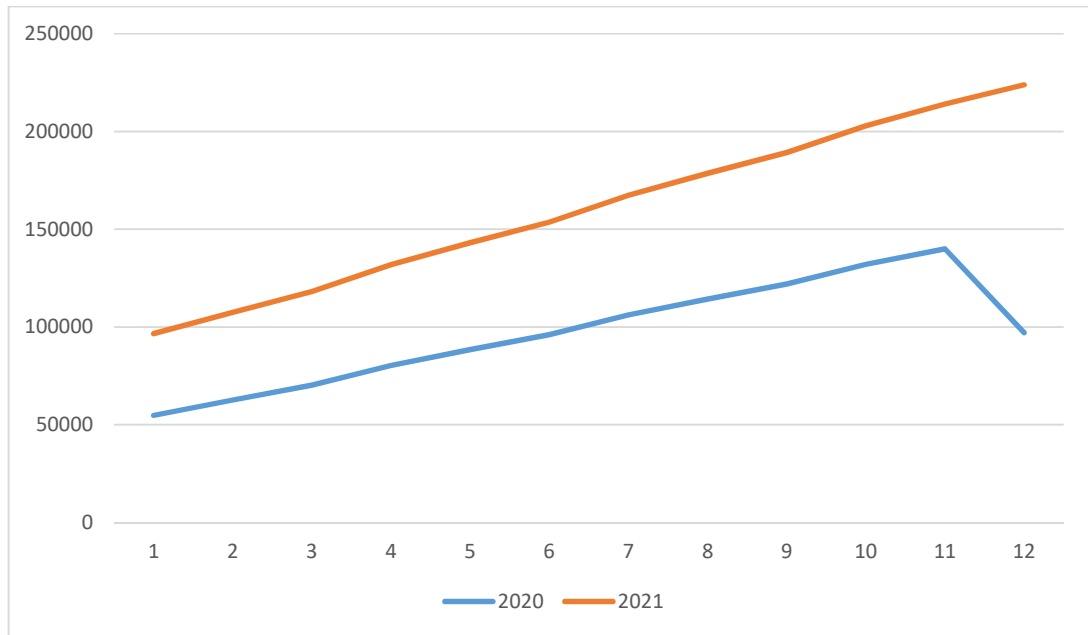


Figure 11. Monthly budgeted cash flow in 2020 and 2021

The budgeted balance sheet is the overall picture of the company's financial situation in the future (Chorafas 2006, 336). Building the budgeted balance sheet is the last step of master budget preparation because it requires information from all budgets mentioned above. A budgeted balance sheet measures assets, liabilities and equity based on historical balance sheet and anticipation. (Cox 2011, 54)

The company prefers the yearly balance sheet. As the profit of the budgeting year is projected optimistically to be positive, retained earnings increase monthly making the cash rise proportionally. The analysis of the budgeted balance sheet is in chapter 5, section 5.1.

5 Performance evaluation

The evaluation process is necessary to give feedback on job performance and financial result as well as to facilitate a better working environment. In this chapter, different analysis methods are provided to analyze diverse perspectives in business operation such as financial ratio analysis, profitability analysis and cost-volume-profit analysis.

5.1 Financial ratio analysis

Liquidity ratios show the company's ability to pay off current short-term liabilities and coming long-term liabilities. On the other hand, the liquidity indicates the cash capacity of the entity and the ability to convert the asset into cash (McGowan 2014, 41). The result of budgeted balance sheets is taken to perform the analysis.

- Quick ratio displays the ability of the company to convert current assets into cash to pay off its liabilities.

$$\text{Quick ratio} = \frac{\text{Total Current Asset} - \text{Inventory} - \text{Prepaid Expenses}}{\text{Liabilities}}$$

$$\text{Quick ratio}(2020) = \frac{86\,005 - 1\,766}{36\,053} = 2.3$$

$$\text{Quick ratio}(2021) = \frac{215\,283 - 3\,532}{52\,268} = 4$$

- Current ratio (Working Capital Ratio) shows the capacity of the firm to pay off short-term liabilities within a year, with current assets.

$$\text{Current ratio} = \frac{\text{Current Assets}}{\text{Liabilities}}$$

$$\text{Current ratio}(2020) = \frac{86\,005}{36\,053} = 2.3$$

$$\text{Current ratio}(2021) = \frac{215\,283}{52\,268} = 4.1$$

Liquidity shows the cash level and the ability of the company to turn assets into cash. The quick ratio and current ratio of both 2020 and 2021 are above 1, meaning that assets can cover all current liabilities. 2021 marks the increase in the cash level compared to the previous year. The company does not have to sell long term assets to pay current liabilities.

Solvency ratios measure the sustainability of the business by comparing the level of debt with assets and equity. These ratios expose the ability of the company to pay off long-term liabilities. (Goel 2015, 143).

- Debt ratio is one of the most efficient ratios to compare total liabilities with total assets. This ratio reveals the financial leverage of the company.

$$\text{Debt ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

$$\text{Debt ratio}(2020) = \frac{36\,053}{117\,005} = 0.3$$

$$\text{Debt ratio}(2021) = \frac{52\,268}{242\,483} = 0.2$$

- Equity ratio displays the investment leverage of the company by comparing the equity with assets.

$$\text{Equity ratio} = \frac{\text{Total Equity}}{\text{Total assets}}$$

$$\text{Equity ratio}(2020) = \frac{80\,952}{117\,005} = 0.7$$

$$\text{Equity ratio}(2021) = \frac{190\,215}{242\,483} = 0.8$$

Solvency ratio illustrates the ability to pay off long-term liabilities to banks and creditors. In 2020, the debt ratio is 0.3, meaning that the company's liabilities are 30% of the entire company's assets. The entity must sell some of the long-term assets to pay off all long-term liabilities. In 2021, the debt ratio is lower. The equity ratio is quite high in both years. In 2020, it is 0.7, meaning the owner owns 70% of the company's assets. In 2021, this amount increases by 10%. These are healthy ratios in this industry.

Efficiency ratios analyze how the company uses its asset to generate income. In most cases, if the company utilizes resources efficiently, the profitability is secured. (Goel 2015, 57).

- Asset turnover ratio is the most efficient ratio to show how well the company can generate sales from the number of assets owned.

$$\text{Asset turnover ratio} = \frac{\text{Net Sales}}{\text{Average Total Assets}}$$

$$\text{Asset turnover ratio}(2020) = \frac{360\,013}{117\,005} = 3$$

$$\text{Asset turnover ratio}(2021) = \frac{472\,425}{242\,483} = 1.9$$

- Days Sales in Inventory calculation shows the number of days it takes to sell all of the current inventory. The sooner the inventory is sold, the more the liquidity is proved.

$$\text{Days' Sales in Inventory} = \frac{\text{Ending Inventory}}{\text{Cost of Goods Sold}} * 365$$

$$\text{Days' Sales in Inventory}(2020) = \frac{18\,112}{112\,098} * 365 = 59$$

$$\text{Days' Sales in Inventory}(2021) = \frac{24\,918}{146\,569} * 365 = 62$$

Depending on the specific industry that whether the efficiency ratio is healthy or not. In 2020 and 2021, asset turnover ratios are respectively 3 and 1.9, meaning that every euro the owner invests in assets will generate 3 € and 1.9 €. The company is very efficient in using its assets. Days' sales in inventory calculation show that in 2020, the company has enough inventory to last for the next 59 days. In other words, the company can turn the inventory into cash in the next 59 days. In 2021, the company has enough inventory to last in 62 days.

5.2 Profitability analysis

The primary purpose of operating the business is to make a profit and maintain profitability. Therefore, profitability analysis is a tool used to support managers in setting KPI as well as anticipating budgeting cost. This method evaluates the efficiency of the operating performance in producing a profit.

The profitability is analyzed based on the form of cost or account. Cost-based profitability analysis approaches the assessment in the profitability generated by comparing expenses and revenues for given items. This method is mainly for short-term plans because if the company is not a manufacturing company, the cost of items imported is fixed, and the cost-based profitability analysis can only perform on other operating expenses (SAP 2018).

Account-based profitability analysis is the method which brings the valuation of comparison between revenue and expenses in the accounting period. Hence, accountants consider not only the cost of inventory but also all other expenses occurred in a certain period (SAP 2018). Other elements and accounts provide a broader and more in-depth analysis in profitability.

In this case, as the commissioning company is a merchandising company, the profitability analysis is based on account-based profitability. Two scenarios are taken into consideration. The first scenario is optimistic and likely to happen, which is the master budget built in chapter 4. The pessimistic situation happens when sales decrease.

When the company launches B2B, to save time, the company decides to sell products via e-commerce. However, sales can decrease for many reasons. For instance, inventory is not enough to sell during the period, or there are more competitors in the area. Another possible reason is that the process of selling and buying is prolix, for example, the salesperson receives the order from customers, informs the vendor and the vendor notifies if there is any change in the price. If customers modify their order, the process has to be done again and sometimes there is not enough time to make the deal. The pessimistic scenario is shown below:

Table 12. Budget scenarios for 2020

Budget scenarios 2020					
Description	Optimistic(Likely)	%	Pessimistic	%	
Sales revenue	€ 360 013	100 %	€ 288 010	100 %	
Variable cost	€ 112 098	31 %	€ 100 888	35 %	
Contribution margin	€ 247 915	69 %	€ 187 122	65 %	
Fixed cost	€ 164 840	46 %	€ 164 840	57 %	
Operating income	€ 83 075	23 %	€ 22 282	8 %	

In 2020, the online retail business is not launched yet so that the fixed cost does not include the operating expenses of online sales. The variable cost in this table does not consider inventory shrinkage. As shown above, the variable cost accounts for 31% of sales revenue in optimistic (likely) and 35% in the pessimistic scenario. In the pessimistic scenario, the sales number does not come to expect, or when sales are slow, the owner attracts customers by lowering the sales price.

Contribution margins are respectively 69% and 65%. The fixed cost remains the same so that if sales decrease, the fixed cost is still 164 840 € but will account for about 11% more of sales revenue. Operating incomes in the two scenarios are 23% and 8% respectively. Therefore, if the pessimistic scenario happens, the company still make a profit to cover other expenses.

Profitability ratios are used to perform account-based profitability analysis with inputs from financial statements, specifically the income statement and balance sheet. The return on investment and other short-term, long-term assets are focused on demonstrating how well the company produces a profit from operations. Management is evaluated based

on the contribution to the company's bottom line (Westcott 2016, 47). The profitability measures whether the company makes enough profit from assets, which makes it connect to efficiency ratio mentioned in the previous chapter. Some key ratios in profitability ratios are:

Gross margin ratio measures the profitability made solely from inventory. Gross margin considers the cost of goods sold so that when the gross margin is compared with net sales, the pure profit or raw profit from sales of inventory is shown. Managers use this profit to pay other operating expenses so that the company prefers a high gross margin ratio (Fight 2005, 52). The high gross ratio is achieved by purchasing cheap inventory or marking goods up. If the owner buys the inventory at a discount price, the profit is high. If the company marks products up, the sales result is higher with the same units. According to Tracy (2016, 223):

Gross Margin = Net sales – Cost of Goods Sold

$$\text{Gross Margin Ratio} = \frac{\text{Gross Margin}}{\text{Net Sales}}$$

$$\text{Gross Margin Ratio (Optimistic)} = \frac{247\,915}{360\,013} = 69\%$$

$$\text{Gross Margin Ratio (Pessimistic)} = \frac{187\,122}{288\,010} = 65\%$$

The gross margin ratio is 69% in the optimistic scenario and 65% in the pessimistic scenario. In both cases, after paying off the ending inventory price, the company still has 69% or 65% to cover other operating and managing expenses.

Profit margin ratio measures the return on sales, which is the amount of net income generated from one dollar of sales. As the profit margin considers net income, it shows the percentage of sales left after all expenses. This ratio shows the efficiency in converting sales into profitability to distribute dividends. The low-profit margin shows a high proportion of expenses, which give a warning to managers to budget and control expenses. Therefore, this ratio represents the efficiency in management and administration. (Ramagopal 2009, 214.)

$$\text{Profit margin ratio} = \frac{\text{Net Income}}{\text{Net Sales}}$$

$$\text{Profit margin ratio (Optimistic)} = \frac{83078}{360013} = 23\%$$

$$\text{Profit margin ratio (Pessimistic)} = \frac{22282}{288010} = 8\%$$

In the optimistic scenario, the company can convert sales revenue into 23% of the profit. Meanwhile, sales only produce 8% of profit in the pessimistic forecasting. However, 8% of profit is still a good number regarding this industry.

Return on assets ratio (ROA) is used to measure the amount of profit produced from total assets during a period. ROA also shows how efficient the company is in generating income from investments. As stated by Tracy (2016, 233), the ratio is a test of capital utilization. Total assets taken into consideration in the ratio is the original cost of assets without accumulated depreciation.

$$\text{Return on Assets ratio} = \frac{\text{Net Income}}{\text{Average Total Assets}}$$

$$\text{ROA(Optimistic)} = \frac{83078}{117005} = 0.7$$

$$\text{ROA(Pessimistic)} = \frac{22282}{117005} = 0.2$$

The ROA ratio in optimistic and pessimistic scenarios are respectively 70% and 20%, meaning with every euro that owner investing in assets produces 7 € and 2 € of net income. These are reasonable rates of return.

Return on equity (ROE) measures the profit generated from one dollar of stockholder's equity. In other words, the ratio evaluates the ability of the company in converting shareholder's investment into profit and reveals the efficiency in utilizing equity to finance the operation and growth (Hampton 2011, 150).

$$\text{Return on Equity ratio} = \frac{\text{Net Income}}{\text{Shareholder's Equity}}$$

$$\text{ROE (Optimistic)} = \frac{83078}{90952} = 1$$

$$\text{ROE (Pessimistic)} = \frac{22282}{90962} = 0.3$$

The ROE in the optimistic scenario is one, meaning every euro that the owner is investing produces 1€. Meanwhile, the pessimistic scenario of ROE is 30%, or the rate of return on each investment is 30%. Each euro only generates 0.3 euro in this case. Even if sales decrease in the pessimistic case, the investment still makes a profit. This figure will attract investors in the future.

5.3 Cost-Volume-Profit analysis

Cost accounting represents the cost incurred associated with a business process, which is used to improve the management. The data from cost accounting is used to analyze the cost behaviour in Cost-Volume-Profit (CVP). The analysis is used to evaluate how profit and cost change with the change in volume, which is demonstrated in break-even and contribution margin analysis. Factors that affect the profit are different types of cost, sales price and quantity of products sold. The analysis reveals the relationship between these elements (Horngren & al. 2015, 89). Budget planning is accurate when managers understand the relationship between cost, volume and profit.

In CVP analysis, the volume only affects the cost, which means the selling price is constant. Other factors, such as economics environment and inflation, are ignored. As stated by Trifan (2011), CVP analysis helps the manager to change price strategies and set the target income. Therefore, the method becomes an essential tool for managerial control and anticipation.

Break-even analysis and contribution margin analysis provide answers to questions related to sales volume, break-even and profit. If the company knows sales volume required to break even, the necessary volume to reach the desired profit also exposes. Not only the change in selling prices and cost affect the profit but also the mix of products. The analysis brings the approach to determine the potential target income and profit. (Cafferky & al. 2014, 11.)

Contribution margin is the difference between sales revenue and variable cost, which indicates the value of sales left to cover the fixed cost and other operating expenses after paying the variable cost. Hence, the contribution margin ratio is the percentage of sales revenue available to cover the fixed cost (Cafferky & al. 2014, 11). Costs are divided into fixed costs and variable costs to perform the ratio. The contribution margin not only compares the number of sales and variable costs but also compares the excess of the unit in sales over the variable cost.

Contribution margin ratio is computed as a percentage of sales:

$$\text{Contribution margin} = \text{Sales} - \text{Variable Costs}$$
$$\text{Contribution Margin ratio} = \frac{\text{Contribution margin}}{\text{Sales Revenue}}$$

Contribution margin ratio is computed based on unit data:

Contribution margin (unit) = Selling Price per unit – Variable cost per unit

$$\text{Contribution Margin ratio} = \frac{\text{Contribution margin (unit)}}{\text{Selling Price}}$$

As the cost of goods sold is the variable cost, in this case, the contribution margin ratio equals the gross margin ratio, which is calculated above. The company sells many products so that the contribution margin is weighted average contribution margin (WACM), which is explained below in sales mix break-even point analysis. The WACMR optimistic and pessimistic scenarios are respectively 69% and 65%.

Break-even analysis decides break-even point in sales, where sales revenue equals expenses at a given volume of products and capacity use rate. If other things are unchanged, the lower the break-even point is, the higher the profit is. If the break-even point is high, the operating risk is high (Ramagopal 2009, 432). Therefore, the break-even point provides deep insight into adjusting the budgeting plan to meet the requirement of profitability.

$$\text{Breakeven point in unit} = \frac{\text{Fixed costs}}{\text{Contribution margin per unit}}$$

$$\text{Breakeven point in sales} = \frac{\text{Fixed costs}}{\text{Contribution margin ratio}}$$

The company sells many products, which is why the sales mix breakeven point analysis will be applied in this case.

Sales mix break-even point analysis is used when the corporation sells more than one product, which makes sales price and variable cost per unit among them differentiate (Weygandt, Kimmel & Kieso 2009, 251).

$$\text{Breakeven point in sales} = \frac{\text{Fixed costs}}{\text{Weighted Average Contribution margin ratio}}$$

$$\text{Breakeven point in unit} = \frac{\text{Fixed costs}}{\text{Weighted Average Contribution margin per unit}}$$

Following the requirement of the company, the author only conducts the breakeven point in sales.

$$\text{Breakeven point in sales (Optimistic)} = \frac{164\,840\text{€}}{69\%} = 171708\text{€}$$

$$\text{Breakeven point in sales (Pessimistic)} = \frac{164\,840\text{€}}{65\%} = 253600\text{€}$$

In the optimistic scenario, the break-even point in sales is 171 708 €. In other words, if sales revenue is 171 708 €, the revenue equals expense and cost, there is no loss nor profit. If the plan goes well, after the first two quarters of the first year, the company will reach the break-even point. Meanwhile, the break-even point in the pessimistic scenario is 253 600 €, which is 50% more than in the optimistic one.

The margin of safety is the formula used to measure the operating risk, primarily used when the break-even point is high. By comparing expected sales and break-even sales, the user can determine the extent to which sales decline, and the company can continue business activities without making losses (Madegowda 2006, 689). The higher the margin of safety is, the safer the situation is to reach the break-even point.

$$\text{Margin of safety ratio} = \frac{\text{Breakeven sales}}{\text{Expected sales}}$$

$$\text{Margin of safety ratio (Optimistic)} = \frac{171\,708\text{€}}{360\,013\text{€}} = 48\%$$

$$\text{Margin of safety ratio(Pessimistic)} = \frac{253\,600\text{€}}{288\,010\text{€}} = 88\%$$

If the revenue reduces by 48% in the optimistic scenario, the break-even point is reached. Meanwhile, the reduction of 88% in the pessimistic ratio results in a break-even point.

6 User tool guide

In this chapter, the author provides the tool guide for not only the company to follow up but also for other users to apply on their own business. Steps on how to apply data on the existing format help users create master budget easily, including operating budget and financial budget. Moreover, the instruction on making variance analysis based on different provided sales volumes is presented in this chapter.

6.1 Budget implementation instruction

The tool guide contains steps and explanation on utilizing master budget excel package, including seven different types of the budget in the operating budget and financial budget. Detailed instructions are provided to help users use the tool effectively.

Sales budget instruction

Step 1: Insert the monthly product sales unit (cell x) and price (cell y) for each product. Do not insert data into “quarter”, “year”, and “total” column because they contain formulas, which automatically calculate when the data is inserted for monthly. Insert more rows if there are additional products.

SALES BUDGET					
Item code	Description	Jan	Feb	Mar	Quarter 1
1 Product 1					
	Sales unit	x	x	x	
	Sales price	y	y	y	
	Sales revenue				
2 Product 2					
	Sales unit	x	x	x	
	Sales price	y	y	y	
	Sales revenue				
	Total sales revenue				

Figure 12. Sales budget instruction

Step 2: Repeat the action for other months of the year.

Purchase budget instruction

Step 1: Insert value in (cell x) “expected unit sales”

Step 2: Insert percentage (cell y) of desired ending inventory. This row includes a formula to calculate ending inventory quantity. Hence, users should only change the percentage in the formula.

The other months' beginning inventory includes a formula so that users should not insert the value. The beginning inventory of one month is the ending inventory of the previous month. The required number of products to be purchased is automatically calculated.

PURCHASE BUDGET					
Items	Description	Jan	Feb	Mar	Quarter 1
Product 1	(Unit)				
	Expected Unit Sales	x	x	x	
	Desired Ending Inventory	y%*x			
	Beginning Inventory				
Required Purchased Products					

Insert data here

Figure 13. Purchase budget instruction

Step 4: Insert purchase price (cell x) in “ending inventory budget” sheet to calculate the ending inventory value. The “monthly”, “quarterly”, “yearly” and “total” tab contains formulas so that users should not insert the value in those tabs.

ENDING INVENTORY BUDGET					
Description	price/piece	Jan	Feb	Mar	Quarter 1
Product 1	x				
Product 2	x				
Product 3	x				
Total ending inventory					

Insert data here

Figure 14. Ending inventory budget instruction

Cost of Goods Sold budget instruction

COSG table contains formulas that automatically updates when users change the value in the “purchase budget” sheet. Hence, users do not have to insert any value. The “required products” data comes from the “purchase budget” sheet and the “purchase price” value comes from “ending inventory” sheet.

Capital expenditure budget instruction

Step 1: Insert the purchase price of each asset (cell x) and expected life usage (cell y). The “depreciation each year” column and “total” row contain formulas. Users do not have to insert value.

DESCRIPTION	Value	Life Usage	Depreciation each year
Office equipment	x	y	
Technology equipment	x	y	
Truck	x	y	
Showroom	x	y	
Total			

Insert data here

Figure 15. Depreciation calculation instruction

Step 2: Calculate the number of years each asset has been used and replace the value (z) in the “accumulated depreciation” column. For example, from the beginning of 2016 to the end of 2020, the asset has been used for five years, insert “5”. This column contains a formula which links to the “depreciation” tab so that the accumulated depreciation value is automatically calculated when users change the number of years.

DESCRIPTION	Value	Life Usage	Depreciation each year	Accumulated depreciation
Office equipment	x	y	a	a*z
Technology equipment	x	y	a	
Truck	x	y	a	
Showroom	x	y	a	
Total				

Insert data here

Figure 16. Accumulated depreciation calculation instruction

The “remaining value” tab contains a formula, which automatically calculates the value when you insert the number of years that each asset has been used. The “remaining value” tab is linked to the “value” tab and the “accumulated depreciation” tab.

Income statement budget instruction

Step 1: The income statement budget is built based on other previous budgets. Therefore, all columns and rows contain formulas. No input by the users is needed. The “sales revenue” is from “sales budget”, “COGS” is from “COGS budget” and “operating expense” is from “operating expense budget” sheet. If there is no loan interest, delete the row.

Step 2: Change the income tax percentage (x) of the company. The row contains a formula which automatically calculates the income tax value after users insert tax percentage.

Account code	Description	Jan	Feb	Mar	Quarter 1
5111	Sales revenue				
632	Cost of goods sold				
	Gross Profit				
642	Operating expenses				
	Operating income	a			
811	Interest expense				
821	Income tax		x%*a		
911	Net Income				

Delete if needed
Insert data here

Figure 17. Income Statement Budget instruction

Cash flow budget Instruction

The “cash flow budget” table contains formulas. The cash collection value is from the “sale revenues” sheet, and cash payment is from the “COSG”, “Operating expenses” sheet. The end-cash balance of one month is the begin-cash balance of the next month. The formula is designed explicitly for Nhat Quang LLC. Users can insert the value in each sell or change the percentage in the below shells. The loan and interest percentage are based on the company’s situation.

Account code	Description	Jan	Feb	Mar	Quarter 1
	Beginning cash balance				
	Cash collection				
1111	Cash sales				
131	Collections on credit sales				
	<i>Total cash-in</i>				
	Cash Payments				
632	Inventory payment				
3348	Remaining inventory payment				
642	Operating expenses				
3411	Loan payment				
	<i>Total cash-out</i>				
	Ending balance before financing:				
	Financing:				
1121	Short-term loan				
811	Interest payment				
	End-cash balance				

Insert data or change percentage in the formula

Figure 18. Cash Flow Budget instruction

Balance sheet budget instruction

The “balance sheet” contains formulas that link to all previous budgets so that no input is needed. For example, cash and account receivable are from the “cash flow budget” sheet, non-current asset values are from the “capital expenditure budget” sheet. If the company includes more descriptions in the balance, insert more rows with historical values, for example, loans and account payable.

6.2 Variance analysis

Variance analysis is a tool used to analyze the difference between the actual business result and the standard budget. The result of the analysis describes a picture of over-performance or under-performance. The analysis provides the reason for the difference, which helps managers fix the cause. (Arora 2010, 198.)

To manufacturing companies, the difference between actual manufacturing cost and planned cost for input products are shown in the variance analysis. Not only price variance but also quantity variance is illustrated. The price variance shows if the company pays more for a unit than they should do. According to Arora (2010, 198), the quantity variance shows if the company uses more products or materials to produce inputs than planned. If the planned cost is lower than the actual cost with the same volume of products, the price variance is favourable. The price variance will be unfavourable if the standard cost is higher than the actual cost. The same theory is applied to quantity variance analysis.

The analysis can be used in the management of labours, materials, variable costs, fixed overhead and other performance indicators. The importance is that managers choose the right one and focus on making most of the analysis. The variance analysis is simple to use and effective.

As this is the first year of undertaking budgets, the case company does not have last year's budget data to compare with the actual result. The owner can apply variance analysis with 2020 actual operating result to find out if there are changes in variable cost, income and expenses. The author created an excel file which contains formulas. Users only need to insert in the "reality value" tab. The "difference in euro" and "difference in percentage" will be automatically calculated.

Variance analysis						
Account Code	Description	Budget	Reality	Difference in euro	Difference in percentage	
5111	Sales revenue					
632	Cost of goods sold					
	Gross Profit					
642	Operating expenses					
	Operating income					
811	Interest expense					
821	Income tax					
911	Net Income					

↑
Insert data to this column

Figure 19. Variance analysis instruction

7 Evaluation

This chapter is a summary of the challenges that the author faced during the implementation of the project. The thesis becomes the foundation of the author for further improvement in research and project implementation. Personal learnings are also reflected in this chapter.

7.1 Challenges

Starting as a family business, booking system and financial analysis activities of the company are neither in order nor clear. There are difficulties in collecting data, selecting and arranging figures. There are some information and historical data that is not in statements, which requires interviews to collect. Accountants were not the same throughout the year while the owner did not understand much about figures in the note, which create barriers in approaching historical data and analyzing it.

Moreover, there are several suppliers, with different contracts of payment. The credit amount and percentage among suppliers' agreements are different so that the cash payment is not always 20% payable like in this thesis. However, it is a suitable method to estimate the amount payable after reviewing suppliers' contracts. The same situation applies to B2B customer's contracts. Keeping cash flow realistic is very challenging.

The forecast in the master budget can be different from the reality due to many factors such as the change in business regulation, tax and contracts. The market situation is a crucial factor affecting the business. Changes and adjustment must be made throughout the budgeting period.

Distance is also a challenge when the commissioning company is in Vietnam, and the author is abroad. There were few meetings with the owner while the author travelled to Vietnam. Otherwise, all other interviews and discussions were arranged via Skype and Messenger. The time difference sometimes delayed the Skype meeting.

7.2 Learnings

The author has gained more theoretical and practical knowledge of managerial accounting and budgeting process. She was able to apply knowledge in courses to the commissioning company. She also read many finance textbooks and learned many different solutions

from other authors on the same problem. The interviews with other accountants who have experience in the field provided her with an overview of the practice accounting and financial analysis in the workplace. The author gained experience in how to do academic research, which benefits her in more advanced research in the future.

Furthermore, as the company is in Vietnam, the author has the opportunity to understand more about Vietnamese market, economic situation and taxation. The author builds the network by contacting with other accountants, controllers and the owner. It is a benefit for the author as she understands about another country's economy and accounting standard other than just Finland, which makes the thesis more internationalized.

Last but not least, the project allows the writer to practice problem-solving and project management skills in business. During implementing the thesis, many problems were arising at the same time, and they connected, which let the author practise the problem-solving skills by fixing each piece and the picture simultaneously. All challenges mentioned above are conditions for her to grow out of her comfort zone.

7.3 Company's benefits and feedback

There were two presentations with the owner of the company. The first one did not really come to his expectation. After receiving advice from the thesis advisor, the author fixed and focused more on company value. The second presentation, the owner was satisfied with the outcome of the thesis.

For the first time, the owner has an opportunity to approach the financial analysis of the company's performance. The thesis assists him in managing the business. The detailed analysis and graphs help him perceive the figure better. However, some theoretical parts are hard for him to understand.

The thesis has brought benefits to the company and the owner. The accounting and financial system of the company become more well-organized, that makes it easier to investigate when loss incurs. Moreover, discussions with the owner help him understand more about the financial aspects of the company and suggest the right path to expand the business. The presentation to the company provides the guide on budget adjustment when changes are needed. Therefore, the owner can make the best use of it.

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Attachments

Attachment 1: Thesis activities timeline as a Gantt Chart



Attachment 2: Interview collection from the owner

Question content	Answer summary
The target customer	<ul style="list-style-type: none"> - Current: Construction contractors, Maintenance men. - 2020 & 2021: Construction contractors, Maintenance men, other electrical equipment supplier stores.
The service the company is offering and planning to expand	<ul style="list-style-type: none"> - Current: Sales revenue are mostly from the traditional retail store, free delivery for B2C sales in town. - 2020: Free delivery for B2C sales inside the town and B2B outside the town. - 2021: Free delivery for B2C sales inside the town and B2B outside the town and online retail store.
The advantages that current suppliers provide	<ul style="list-style-type: none"> - Free delivery. - Credit payment on the inventory: 80% will be paid in the month, 20% will be paid the following month.
The main activities to perform the business	<ul style="list-style-type: none"> - Purchase inventory, processing invoices, sales, advertising, customer services, and delivery.
Human resources	<ul style="list-style-type: none"> - The owner, wife and six full-time employees.
Physical resources	<ul style="list-style-type: none"> - Owner's residency as the store. - Office equipment. - Cars and trucks.
Channels that customers purchase products	<ul style="list-style-type: none"> - Current: Traditional retail store. - 2020: Traditional retail store. - 2021: Traditional retail store and online retail store.

Attachment 3: Sales budget

TRADITIONAL SALES BUDGET 2020																			
Item No	Description	Jan	Feb	Mar	Quarter 1	Apr	May	Jun	Quarter 2	Jul	Aug	Sep	Quarter 3	Oct	Nov	Dec	Quarter 4	2020	
HH005	Junction Box CNS2157																		
	Sales unit	108	90	90	288	90	90	90	270	90	90	90	270	90	90	108	288	1116	
	Sales price	4.5 €	5 €	5 €		5 €	5 €	5 €		5 €	5 €	5 €		5 €	5 €	4.5 €			
	Sales revenue	486 €	450 €	450 €	1,386 €	450 €	450 €	450 €	1,350 €	450 €	450 €	450 €	1,350 €	450 €	450 €	486 €	1,386 €	5,472 €	
HH006	Socket 2																		
	Sales unit	29	24	24	76.8	24	24	24	81	24	24	24	72	24	24	29	77	307	
	Sales price	2.7 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	2.7 €			
	Sales revenue	78 €	72 €	72 €	222 €	72 €	72 €	72 €	216 €	72 €	72 €	72 €	216 €	72 €	72 €	78 €	222 €	876 €	
HH014	Atomat 4.5KA 1P20A																		
	Sales unit	54	45	45	144	45	45	45	135	45	45	45	135	45	45	54	144	558	
	Sales price	2 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	2 €			
	Sales revenue	122 €	113 €	113 €	347 €	113 €	113 €	113 €	338 €	113 €	113 €	113 €	338 €	113 €	113 €	122 €	347 €	1,368 €	
HH017	Atomat 4.5KA 1P40A																		
	Sales unit	36	30	30	96	30	30	30	90	30	30	30	90	30	30	36	96	372	
	Sales price	3.2 €	3.5 €	3.5 €		3.5 €	3.5 €	3.5 €		3.5 €	3.5 €	3.5 €		3.5 €	3.5 €	3.2 €			
	Sales revenue	113 €	105 €	105 €	323 €	105 €	105 €	105 €	315 €	105 €	105 €	105 €	315 €	105 €	105 €	113 €	325 €	1,279 €	
HH042	Flat wires 2x2.5 mm2																		
	Sales in meter	3600	3000	3000	9600	3000	3000	3000	9000	3000	3000	3000	9000	3000	3000	3600	9600	37200	
	Sales price/10 meters	36 €	40 €	40 €		40 €	40 €	40 €		40 €	40 €	40 €		40 €	40 €	36 €			
	Sales revenue	12,960 €	12,000 €	12,000 €	36,960 €	12,000 €	12,000 €	12,000 €	36,000 €	12,000 €	12,000 €	12,000 €	36,000 €	12,000 €	12,000 €	12,960 €	36,960 €	145,920 €	
HH043	Flat wires 2x1.5 mm2																		
	Sales in meter	4800	4000	4000	12800	4000	4000	4000	12000	4000	4000	4000	12000	4000	4000	4800	12800	49600	
	Sales price/10 meters	36 €	40 €	40 €		40 €	40 €	40 €		40 €	40 €	40 €		40 €	40 €	36 €			
	Sales revenue	17,280 €	16,000 €	16,000 €	49,280 €	16,000 €	16,000 €	16,000 €	48,000 €	16,000 €	16,000 €	16,000 €	48,000 €	16,000 €	16,000 €	17,280 €	49,280 €	194,560 €	
HH068	Compact 4U-55WOL																		
	Sales unit	36	30	30	96	30	30	30	90	30	30	30	90	30	30	36	96	372	
	Sales price	2.7 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	2.7 €			
	Sales revenue	97 €	90 €	90 €	277 €	90 €	90 €	90 €	270 €	90 €	90 €	90 €	270 €	90 €	90 €	97 €	277 €	1,094 €	
HH078	Switch 10A																		
	Sales unit	360	300	300	960	300	300	300	900	300	300	300	900	300	300	360	960	3720	
	Sales price	2.7 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	2.7 €			
	Sales revenue	972 €	750 €	750 €	2,472 €	750 €	750 €	750 €	2,250 €	750 €	750 €	750 €	2,250 €	750 €	750 €	972 €	2,472 €	9,444 €	
	TOTAL SALES REVENUE	32,108 €	29,580 €	29,580 €	91,267 €	29,580 €	29,580 €	29,580 €	88,739 €	29,580 €	29,580 €	29,580 €	88,739 €	29,580 €	29,580 €	32,110 €	91,269 €	360,013 €	

TRADITIONAL SALES BUDGET 2021																			
Item No	Description	Jan	Feb	Mar	Quarter 1	Apr	May	Jun	Quarter 2	Jul	Aug	Sep	Quarter 3	Oct	Nov	Dec	Quarter 4	2021	
HH005	Junction Box CNS2157																		
	Sales unit	110	99	99	308	99	99	99	297	99	99	99	297	99	99	110	308	1210	
	Sales price	4.8 €	5 €	5 €		5 €	5 €	5 €		5 €	5 €	5 €		5 €	5 €	4.8 €			
	Sales revenue	523 €	495 €	495 €	1,513 €	495 €	495 €	495 €	1,485 €	495 €	495 €	495 €	1,485 €	495 €	495 €	523 €	1,513 €	5,995 €	
HH006	Socket 2																		
	Sales unit	29	26	26	81	26	26	26	87	26	26	26	78	26	26	29	81	327	
	Sales price	2.9 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	2.9 €			
	Sales revenue	83 €	78 €	78 €	239 €	78 €	78 €	78 €	234 €	78 €	78 €	78 €	234 €	78 €	78 €	83 €	239 €	945 €	
HH014	Atomat 4.5KA 1P20A																		
	Sales unit	55	50	50	155	50	50	50	150	50	50	50	150	50	50	55	155	610	
	Sales price	2 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	2 €			
	Sales revenue	129 €	125 €	125 €	379 €	125 €	125 €	125 €	375 €	125 €	125 €	125 €	375 €	125 €	125 €	129 €	379 €	1,509 €	
HH017	Atomat 4.5KA 1P40A																		
	Sales unit	36	33	33	102	33	33	33	99	33	33	33	99	33	33	36	102	402	
	Sales price	3.4 €	3.5 €	3.5 €		3.5 €	3.5 €	3.5 €		3.5 €	3.5 €	3.5 €		3.5 €	3.5 €	3.4 €			
	Sales revenue	121 €	116 €	116 €	352 €	116 €	116 €	116 €	347 €	116 €	116 €	116 €	347 €	116 €	116 €	121 €	352 €	1,396 €	
HH042	Flat wires 2x2.5 mm2																		
	Sales in meter	3630	3300	3300	10230	3300	3300	3300	9900	3300	3300	3300	9900	3300	3300	3630	10230	40260	
	Sales price/10 meters	38 €	40 €	40 €		40 €	40 €	40 €		40 €	40 €	40 €		40 €	40 €	38 €			
	Sales revenue	13,794 €	13,200 €	13,200 €	40,194 €	13,200 €	13,200 €	13,200 €	39,600 €	13,200 €	13,200 €	13,200 €	39,600 €	13,200 €	13,200 €	13,794 €	40,194 €	159,588 €	
HH043	Flat wires 2x1.5 mm2																		
	Sales in meter	4840	4400	4400	13640	4400	4400	4400	13200	4400	4400	4400	13200	4400	4400	4840	13640	53680	
	Sales price/10 meters	38 €	40 €	40 €		40 €	40 €	40 €		40 €	40 €	40 €		40 €	40 €	38 €			
	Sales revenue	18,392 €	17,600 €	17,600 €	53,592 €	17,600 €	17,600 €	17,600 €	52,800 €	17,600 €	17,600 €	17,600 €	52,800 €	17,600 €	17,600 €	18,392 €	53,592 €	212,784 €	
HH068	Compact 4U-55WOL																		
	Sales unit	36	33	33	102	33	33	33	99	33	33	33	99	33	33	36	102	399	
	Sales price	2.9 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	2.9 €			
	Sales revenue	103 €	99 €	99 €	301 €	99 €	99 €	99 €	297 €	99 €	99 €	99 €	297 €	99 €	99 €	103 €	301 €	1,187 €	
HH078	Switch 10A																		
	Sales unit	363	330	330	1023	330	330	330	990	330	330	330	990	330	330	363	1023	4026	
	Sales price	2.8 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	2.8 €			
	Sales revenue	998 €	825 €	825 €	2,648 €	825 €	825 €	825 €	2,475 €	825 €	825 €	825 €	2,475 €	825 €	825 €	998 €	2,648 €	10,247 €	
	TOTAL SALES REVENUE	34,142 €	32,538 €	32,538 €	99,217 €	32,538 €	32,538 €	32,538 €	97,613 €	32,538 €	32,538 €	32,538 €	97,613 €	32,538 €	32,538 €	34,133 €	99,208 €	393,650 €	

ONLINE SALES BUDGET 2021																			
Item No	Description	Jan	Feb	Mar	Quarter 1	Apr	May	Jun	Quarter 2	Jul	Aug	Sep	Quarter 3	Oct	Nov	Dec	Quarter 4	2021	
HH005	Junction Box CNS2157																		
	Sales unit	22	20	20	62	20	20	20	60	20	20	20	60	20	20	22	62	244	
	Sales price	4.8 €	5 €	5 €		5 €	5 €	5 €		5 €	5 €	5 €		5 €	5 €	4.8 €			
	Sales revenue	105 €	100 €	100 €	305 €	100 €	100 €	100 €	300 €	100 €	100 €	100 €	300 €	100 €	100 €	105 €	305 €	1,209 €	
HH006	Socket 2																		
	Sales unit	6	5	5	16	5	5	5	24	5	5	5	15	5	5	6	16	71	
	Sales price	2.9 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	2.9 €			
	Sales revenue	17 €	15 €	15 €	47 €	15 €	15 €	15 €	45 €	15 €	15 €	15 €	45 €	15 €	15 €	17 €	47 €	184 €	
HH014	Atomat 4.5KA 1P20A																		
	Sales unit	11	10	10	31	10	10	10	30	10	10	10	30	10	10	11	31	122	
	Sales price	2.35 €	2.50 €	2.50 €		2.50 €	2.50 €	2.50 €		2.50 €	2.50 €	2.50 €		2.50 €	2.50 €	2.35 €			
	Sales revenue	25.9 €	25.0 €	25.0 €	75.9 €	25.0 €	25.0 €	25.0 €	75.0 €	25.0 €	25.0 €	25.0 €	75.0 €	25.0 €	25.0 €	25.9 €	75.9 €	301.7 €	
HH017	Atomat 4.5KA 1P40A																		
	Sales unit	8	7	7	22	7	7	7	21	7	7	7	21	7	7	8	22	86	
	Sales price	3.4 €	3.5 €	3.5 €		3.5 €	3.5 €	3.5 €		3.5 €	3.5 €	3.5 €		3.5 €	3.5 €	3.4 €			
	Sales revenue	27 €	25 €	25 €	76 €	25 €	25 €	25 €	74 €	25 €	25 €	25 €	74 €	25 €	25 €	27 €	76 €	299 €	
HH042	Flat wires 2x2.5 mm2																		
	Sales in meter	726	660	660	2046	660	660	660	1980	660	660	660	1980	660	660	726	2046	8052	
	Sales price/100 meters	38 €	40 €	40 €		40 €	40 €	40 €		40 €	40 €	40 €		40 €	40 €	38 €			
	Sales revenue	2,759 €	2,640 €	2,640 €	8,039 €	2,640 €	2,640 €	2,640 €	7,920 €	2,640 €	2,640 €	2,640 €	7,920 €	2,640 €	2,640 €	2,759 €	8,039 €	31,918 €	
HH043	Flat wires 2x1.5 mm2																		
	Sales in meter	968	880	880	2728	880	880	880	2640	880	880	880	2640	880	880	968	2728	10736	
	Sales price/100 meters	38 €	40 €	40 €		40 €	40 €	40 €		40 €	40 €	40 €		40 €	40 €	38 €			
	Sales revenue	3,678 €	3,520 €	3,520 €	10,718 €	3,520 €	3,520 €	3,520 €	10,560 €	3,520 €	3,520 €	3,520 €	10,560 €	3,520 €	3,520 €	3,678 €	10,718 €	42,557 €	
HH068	Compact 4U-55WOL																		
	Sales unit	8	7	7	22	7	7	7	21	7	7	7	21	7	7	8	22	86	
	Sales price	2.9 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	2.9 €			
	Sales revenue	23 €	21 €	21 €	65 €	21 €	21 €	21 €	63 €	21 €	21 €	21 €	63 €	21 €	21 €	23 €	65 €	256 €	
HH078	Switch 10A																		
	Sales unit	73	66	66	205	66	66	66	198	66	66	66	198	66	66	73	205	806	
	Sales price	2.8 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	3 €		3 €	3 €	2.8 €			
	Sales revenue	201 €	165 €	165 €	531 €	165 €	165 €	165 €	495 €	165 €	165 €	165 €	495 €	165 €	165 €	201 €	531 €	2,052 €	
	TOTAL SALES REVENUE	6,835 €	6,511 €	6,511 €	19,856 €	6,511 €	6,511 €	6,511 €	19,532 €	6,511 €	6,511 €	6,511 €	19,532 €	6,511 €	6,511 €	6,835 €	19,856 €	78,775 €	
	COMBINED TOTAL SALES REVENUE OF TRADITIONAL AND ONLINE SALES	40,977 €	39,048 €	39,048 €	119,073 €	39,048 €	39,048 €	39,048 €	117,144 €	39,048 €	39,048 €	39,048 €	117,144 €	39,048 €	39,048 €	40,968 €	119,064 €	472,425 €	

Attachment 4: Merchandise purchase budget

		TRADITIONAL SALES PURCHASE BUDGET 2020																
Items	Description	Jan	Feb	Mar	Quarter 1	Apr	May	Jun	Quarter 2	Jul	Aug	Sep	Quarter 3	Oct	Nov	Dec	Quarter 4	2020
Junction Box CNS2157	(Unit)																	
	Expected Unit Sales	108	90	90	288	90	90	90	270	90	90	90	270	90	90	108	288	1116
	Desired Ending Inventory	14	14	14	41	14	14	14	41	14	14	14	41	14	14	16	17	46
	Beginning Inventory	16	14	14	43	41	14	14	68	41	14	14	68	41	14	16	70	248
	Required Purchase Product	105	90	90	285	63	90	90	243	63	90	90	243	63	93	108	264	1035
Socket 2	(Unit)																	
	Expected Unit Sales	29	24	24	76.8	24	24	24	82.8	24	24	24	72	24	24	29	77	308
	Desired Ending Inventory	4	4	4	11	4	4	4	11	4	4	4	11	4	4	4	4	12
	Beginning Inventory	4	4	4	12	11	4	4	18	11	4	4	18	11	4	4	4	19
	Required Purchase Product	28	24	24	76	17	24	24	76	17	24	24	65	17	25	29	70	287
Atomat 4.5KA 1P20A	(Unit)																	
	Expected Unit Sales	54	45	45	144	45	45	45	135	45	45	45	135	45	45	54	144	558
	Desired Ending Inventory	7	7	7	20	7	7	7	20	7	7	7	20	7	8	8	8	23
	Beginning Inventory	8	7	7	22	20	7	7	34	20	7	7	34	20	7	8	8	35
	Required Purchase Product	53	45	45	143	32	45	45	122	32	45	45	122	32	46	54	132	518
Atomat 4.5KA 1P40A	(Unit)																	
	Expected Unit Sales	36	30	30	96	30	30	30	90	30	30	30	90	30	30	36	96	372
	Desired Ending Inventory	5	5	5	14	5	5	5	14	5	5	5	14	5	5	5	5	15
	Beginning Inventory	5	5	5	14	14	5	5	23	14	5	5	23	14	5	5	5	23
	Required Purchase Product	35	30	30	95	21	30	30	81	21	30	30	81	21	31	36	88	345
Flat wires 2x2.5 mm2	(Meters)																	
	Expected Meters Sales	3600	3000	3000	9600	3000	3000	3000	9000	3000	3000	3000	9000	3000	3000	3600	9600	37200
	Desired Ending Inventory	450	450	450	1350	450	450	450	1350	450	450	450	1350	450	540	545	545	1535
	Beginning Inventory	540	450	450	1440	1350	450	450	2250	1350	450	450	2250	1350	450	540	540	2340
	Required Purchase Product	3510	3000	3000	9510	2100	3000	3000	8100	2100	3000	3000	8100	2100	3090	3605	8795	34505
Flat wires 2x1.5 mm2	(Meters)																	
	Expected Meters Sales	4800	4000	4000	12800	4000	4000	4000	12000	4000	4000	4000	12000	4000	4000	4800	12800	49600
	Desired Ending Inventory	600	600	600	1800	600	600	600	1800	600	600	600	1800	600	720	726	726	2046
	Beginning Inventory	720	600	600	1920	1800	600	600	3000	1800	600	600	3000	1800	600	720	3120	11040
	Required Purchase Product	4680	4000	4000	12680	2800	4000	4000	10800	2800	4000	4000	10800	2800	4120	4806	11726	46006
Compact 4U-55WOL	(Unit)																	
	Expected Unit Sales	36	30	30	96	30	30	30	90	30	30	30	90	30	30	36	96	372
	Desired Ending Inventory	5	5	5	14	5	5	5	14	5	5	5	14	5	5	5	5	15
	Beginning Inventory	5	5	5	14	14	5	5	23	14	5	5	23	14	5	5	5	23
	Required Purchase Product	35	30	30	95	21	30	30	81	21	30	30	81	21	31	36	88	345
Switch 10A	(Unit)																	
	Expected Unit Sales	360	300	300	960	300	300	300	900	300	300	300	900	300	300	360	960	3720
	Desired Ending Inventory	45	45	45	135	45	45	45	135	45	45	45	135	45	54	54	54	153
	Beginning Inventory	54	45	45	144	135	45	45	225	135	45	45	225	135	45	54	234	828
	Required Purchase Product	351	300	300	951	210	300	300	810	210	300	300	810	210	309	360	879	3450

TRADITIONAL SALES PURCHASE BUDGET 2021																			
Items	Description	Jan	Feb	Mar	Quarter 1	Apr	May	Jun	Quarter 2	Jul	Aug	Sep	Quarter 3	Oct	Nov	Dec	Quarter 4	2021	
Junction Box CNS2157	(Unit)																		
	Expected Unit Sales	110	99	99	308	99	99	99	297	99	99	99	297	99	99	110	308	1210	
	Desired Ending Inventory	15	15	15	45	15	15	15	45	15	15	15	45	15	17	17	48	182	
	Beginning Inventory	17	15	15	46	45	15	15	74	45	15	15	74	45	15	17	76	271	
	Required Purchase Product	108	99	99	306	69	99	99	267	69	99	99	267	69	101	110	280	1121	
Socket 2	(Unit)																		
	Expected Unit Sales	29	26	26	81	26	26	26	89.7	26	26	26	78	26	26	29	81	330	
	Desired Ending Inventory	4	4	4	12	4	4	4	12	4	4	4	12	4	4	4	13	48	
	Beginning Inventory	4	4	4	12	12	4	4	20	12	4	4	20	12	4	4	20	71	
	Required Purchase Product	29	26	26	81	18	26	26	82	18	26	26	70	18	26	29	74	306	
Atomat 4.5KA 1P20A	(Unit)																		
	Expected Unit Sales	55	50	50	155	50	50	50	150	50	50	50	150	50	50	55	155	610	
	Desired Ending Inventory	8	8	8	23	8	8	8	23	8	8	8	23	8	8	8	24	92	
	Beginning Inventory	8	8	8	23	23	8	8	38	23	8	8	38	23	8	8	38	137	
	Required Purchase Product	54	50	50	154	35	50	50	135	35	50	50	135	35	51	55	141	565	
Atomat 4.5KA 1P40A	(Unit)																		
	Expected Unit Sales	36	33	33	102	33	33	33	99	33	33	33	99	33	33	36	102	402	
	Desired Ending Inventory	5	5	5	15	5	5	5	15	5	5	5	15	5	5	5	16	60	
	Beginning Inventory	5	5	5	15	15	5	5	25	15	5	5	25	15	5	5	25	90	
	Required Purchase Product	36	33	33	102	23	33	33	89	23	33	33	89	23	33	36	93	372	
Flat wires 2x2.5 mm2	(Meters)																		
	Expected Meters Sales	3630	3300	3300	10230	3300	3300	3300	9900	3300	3300	3300	9900	3300	3300	3630	10230	40260	
	Desired Ending Inventory	495	495	495	1485	495	495	495	1485	495	495	495	1485	495	545	545	1584	6039	
	Beginning Inventory	545	495	495	1535	1485	495	495	2475	1485	495	495	2475	1485	495	545	2525	9009	
	Required Purchase Product	3581	3300	3300	10181	2310	3300	3300	8910	2310	3300	3300	8910	2310	3350	3630	9290	37290	
Flat wires 2x1.5 mm2	(Meters)																		
	Expected Meters Sales	4840	4400	4400	13640	4400	4400	4400	13200	4400	4400	4400	13200	4400	4400	4840	13640	53680	
	Desired Ending Inventory	660	660	660	1980	660	660	660	1980	660	660	660	1980	660	726	726	2112	8052	
	Beginning Inventory	726	660	660	2046	1980	660	660	3300	1980	660	660	3300	1980	660	726	3366	12012	
	Required Purchase Product	4774	4400	4400	13574	3080	4400	4400	11880	3080	4400	4400	11880	3080	4466	4840	12386	49720	
Compact 4U-55WOL	(Unit)																		
	Expected Unit Sales	36	33	33	102	33	33	33	99	33	33	33	99	33	33	33	99	399	
	Desired Ending Inventory	5	5	5	15	5	5	5	15	5	5	5	15	5	5	5	15	60	
	Beginning Inventory	5	5	5	15	15	5	5	25	15	5	5	25	15	5	5	25	90	
	Required Purchase Product	36	33	33	102	23	33	33	89	23	33	33	89	23	33	33	90	369	
Switch 10A	(Unit)																		
	Expected Unit Sales	363	330	330	1023	330	330	330	990	330	330	330	990	330	330	363	1023	4026	
	Desired Ending Inventory	50	50	50	149	50	50	50	149	50	50	50	149	50	54	54	158	604	
	Beginning Inventory	54	50	50	153	149	50	50	248	149	50	50	248	149	50	54	252	901	
	Required Purchase Product	358	330	330	1018	231	330	330	891	231	330	330	891	231	335	363	929	3729	

ONLINE SALES PURCHASE BUDGET 2021																			
Items	Description	Jan	Feb	Mar	Quarter 1	Apr	May	Jun	Quarter 2	Jul	Aug	Sep	Quarter 3	Oct	Nov	Dec	Quarter 4	2021	
Junction Box CNS2157	(Unit)																		
	Expected Unit Sales	22	20	20	62	20	20	20	60	20	20	20	60	20	20	22	62	244	
	Desired Ending Inventory	3	3	3	9	3	3	3	9	3	3	3	9	3	3	17	23	50	
	Beginning Inventory	3	3	3	9	9	9	9	15	9	9	9	15	9	9	3	15	55	
	Required Purchase Product	22	20	20	62	14	20	20	54	14	20	20	54	14	20	35	70	239	
Socket 2	(Unit)																		
	Expected Unit Sales	6	5	5	16	5	5	5	17.25	5	5	5	15	5	5	6	16	64	
	Desired Ending Inventory	1	1	1	2	1	1	1	2	1	1	1	2	1	1	4	6	13	
	Beginning Inventory	1	1	1	2	2	1	1	4	2	1	1	4	2	1	1	4	14	
	Required Purchase Product	6	5	5	16	4	5	5	16	4	5	5	14	4	5	9	18	63	
Atomat 4.5KA 1P20A	(Unit)																		
	Expected Unit Sales	11	10	10	31	10	10	10	30	10	10	10	30	10	10	11	31	122	
	Desired Ending Inventory	2	2	2	5	2	2	2	5	2	2	2	5	2	2	8	11	25	
	Beginning Inventory	2	2	2	5	5	2	2	8	5	2	2	8	5	2	2	8	27	
	Required Purchase Product	11	10	10	31	7	10	10	27	7	10	10	27	7	10	18	35	120	
Atomat 4.5KA 1P40A	(Unit)																		
	Expected Unit Sales	8	7	7	22	7	7	7	21	7	7	7	21	7	7	8	22	86	
	Desired Ending Inventory	1	1	1	3	1	1	1	3	1	1	1	3	1	1	5	8	17	
	Beginning Inventory	1	1	1	3	3	1	1	5	3	1	1	5	3	1	1	5	19	
	Required Purchase Product	8	7	7	22	5	7	7	19	5	7	7	19	5	7	12	24	84	
Flat wires 2x2.5 mm2	(Meters)																		
	Expected Meters Sales	726	660	660	2046	660	660	660	1980	660	660	660	1980	660	660	726	2046	8052	
	Desired Ending Inventory	99	99	99	297	99	99	99	297	99	99	99	297	99	109	545	752	1643	
	Beginning Inventory	109	99	99	307	297	99	99	495	297	99	99	495	297	99	109	505	1802	
	Required Purchase Product	716	660	660	2036	462	660	660	1782	462	660	660	1782	462	670	1162	2294	7894	
Flat wires 2x1.5 mm2	(Meters)																		
	Expected Meters Sales	968	880	880	2728	880	880	880	2640	880	880	880	2640	880	880	968	2728	10736	
	Desired Ending Inventory	132	132	132	396	132	132	132	396	132	132	132	396	132	145	726	1003	2191	
	Beginning Inventory	145	132	132	409	396	132	132	660	396	132	132	660	396	132	145	673	2402	
	Required Purchase Product	955	880	880	2715	616	880	880	2376	616	880	880	2376	616	893	1549	3058	10525	
Compact 4U-55WOL	(Unit)																		
	Expected Unit Sales	8	7	7	22	7	7	7	21	7	7	7	21	7	7	8	22	86	
	Desired Ending Inventory	1	1	1	3	1	1	1	3	1	1	1	3	1	1	5	8	17	
	Beginning Inventory	1	1	1	3	3	1	1	5	3	1	1	5	3	1	1	5	19	
	Required Purchase Product	8	7	7	22	5	7	7	19	5	7	7	19	5	7	12	24	84	
Switch 10A	(Unit)																		
	Expected Unit Sales	73	66	66	205	66	66	66	198	66	66	66	198	66	66	73	205	806	
	Desired Ending Inventory	10	10	10	30	10	10	10	30	10	10	10	30	10	11	54	75	164	
	Beginning Inventory	11	10	10	31	30	10	10	50	30	10	10	50	30	10	11	51	180	
	Required Purchase Product	72	66	66	204	46	66	66	178	46	66	66	178	46	67	117	230	790	

Description	price/piece	Ending inventory price 2020																2021
		Jan	Feb	Mar	Quarter 1	Apr	May	Jun	Quarter 2	Jul	Aug	Sep	Quarter 3	Oct	Nov	Dec	Quarter 4	
Junction Box CNS2157	1.5 €	20 €	20 €	20 €	61 €	20 €	20 €	20 €	61 €	20 €	20 €	20 €	61 €	20 €	24 €	25 €	69 €	252 €
Socket 2	0.9 €	3 €	3 €	3 €	10 €	3 €	3 €	3 €	10 €	3 €	3 €	3 €	10 €	3 €	4 €	4 €	11 €	40 €
Atomat 4.5KA 1P20A	0.9 €	6 €	6 €	6 €	18 €	6 €	6 €	6 €	18 €	6 €	6 €	6 €	18 €	6 €	7 €	7 €	20 €	73 €
Atomat 4.5KA 1P40A	1.2 €	6 €	6 €	6 €	17 €	6 €	6 €	6 €	17 €	6 €	6 €	6 €	17 €	6 €	7 €	7 €	19 €	68 €
Flat wires 2x2.5 mm2	12.0 €	540 €	540 €	540 €	1,620 €	540 €	540 €	540 €	1,620 €	540 €	540 €	540 €	1,620 €	540 €	648 €	653 €	1,841 €	6,701 €
Flat wires 2x1.5 mm2	14.0 €	840 €	840 €	840 €	2,520 €	840 €	840 €	840 €	2,520 €	840 €	840 €	840 €	2,520 €	840 €	1,008 €	1,016 €	2,864 €	10,424 €
Compact 4U-55WOL	0.9 €	4 €	4 €	4 €	12 €	4 €	4 €	4 €	12 €	4 €	4 €	4 €	12 €	4 €	5 €	5 €	14 €	50 €
Switch 10A	0.9 €	41 €	41 €	41 €	122 €	41 €	41 €	41 €	122 €	41 €	41 €	41 €	122 €	41 €	49 €	49 €	138 €	503 €
Total ending inventory 2021		1,459 €	1,459 €	1,459 €	4,378 €	1,459 €	1,459 €	1,459 €	4,378 €	1,459 €	1,459 €	1,459 €	4,378 €	1,459 €	1,751 €	1,766 €	4,977 €	18,112 €

Description	price/piece	Ending inventory price 2021																2021
		Jan	Feb	Mar	Quarter 1	Apr	May	Jun	Quarter 2	Jul	Aug	Sep	Quarter 3	Oct	Nov	Dec	Quarter 4	
Junction Box CNS2157	1.5 €	27 €	27 €	27 €	80 €	27 €	27 €	27 €	80 €	27 €	27 €	27 €	80 €	27 €	30 €	50 €	106 €	347 €
Socket 2	0.9 €	4 €	4 €	4 €	13 €	4 €	4 €	4 €	13 €	4 €	4 €	4 €	13 €	4 €	5 €	8 €	17 €	54 €
Atomat 4.5KA 1P20A	0.9 €	8 €	8 €	8 €	24 €	8 €	8 €	8 €	24 €	8 €	8 €	8 €	24 €	8 €	9 €	14 €	31 €	102 €
Atomat 4.5KA 1P40A	1.2 €	7 €	7 €	7 €	22 €	7 €	7 €	7 €	22 €	7 €	7 €	7 €	22 €	7 €	8 €	13 €	29 €	95 €
Flat wires 2x2.5 mm2	12.0 €	713 €	713 €	713 €	2,138 €	713 €	713 €	713 €	2,138 €	713 €	713 €	713 €	2,138 €	713 €	784 €	1,307 €	2,804 €	9,219 €
Flat wires 2x1.5 mm2	14.0 €	1,109 €	1,109 €	1,109 €	3,326 €	1,109 €	1,109 €	1,109 €	3,326 €	1,109 €	1,109 €	1,109 €	3,326 €	1,109 €	1,220 €	2,033 €	4,361 €	14,340 €
Compact 4U-55WOL	0.9 €	5 €	5 €	5 €	16 €	5 €	5 €	5 €	16 €	5 €	5 €	5 €	16 €	5 €	6 €	10 €	21 €	69 €
Switch 10A	0.9 €	53 €	53 €	53 €	160 €	53 €	53 €	53 €	160 €	53 €	53 €	53 €	160 €	53 €	59 €	98 €	210 €	691 €
Total ending inventory 2021		1,927 €	1,927 €	1,927 €	5,780 €	1,927 €	1,927 €	1,927 €	5,780 €	1,927 €	1,927 €	1,927 €	5,780 €	1,927 €	2,119 €	3,532 €	7,578 €	24,918 €

Attachment 5: Cost of goods sold budget

COGS TRADITIONAL SALES BUDGET 2020																			
Items	Description	Jan	Feb	Mar	Quarter 1	Apr	May	Jun	Quarter 2	Jul	Aug	Sep	Quarter 3	Oct	Nov	Dec	Quarter 4	2020	
Junction Box CNS2157	Required Products	105	90	90	285	63	90	90	243	63	90	90	243	63	93	108	264	1035	
	Purchase Price	158 €	135 €	135 €	428 €	95 €	135 €	135 €	365 €	95 €	135 €	135 €	365 €	95 €	139 €	162 €	396 €	1,553 €	
Socket 2	Required Products	28	24	24	76	17	24	24	76	17	24	24	65	17	25	29	70	287	
	Purchase Price	25 €	22 €	22 €	68 €	15 €	22 €	22 €	68 €	15 €	22 €	22 €	58 €	15 €	22 €	26 €	63 €	258 €	
Atomat 4.5KA 1P20A	Required Products	53	45	45	143	32	45	45	122	32	45	45	122	32	46	54	132	518	
	Purchase Price	64 €	55 €	55 €	175 €	39 €	55 €	55 €	149 €	39 €	55 €	55 €	149 €	39 €	57 €	66 €	162 €	634 €	
Atomat 4.5KA 1P40A	Required Products	35	30	30	95	21	30	30	81	21	30	30	81	21	31	36	88	345	
	Purchase Price	43 €	37 €	37 €	116 €	26 €	37 €	37 €	99 €	26 €	37 €	37 €	99 €	26 €	38 €	44 €	108 €	423 €	
Flat wires 2x2.5 mm2	Required Products	3510	3000	3000	9510	2100	3000	3000	8100	2100	3000	3000	8100	2100	3090	3605	8795	34505	
	Purchase Price	4,212 €	3,600 €	3,600 €	11,412 €	2,520 €	3,600 €	3,600 €	9,720 €	2,520 €	3,600 €	3,600 €	9,720 €	2,520 €	3,708 €	4,325 €	10,553 €	41,405 €	
Flat wires 2x1.5 mm2	Required Products	4680	4000	4000	12680	2800	4000	4000	10800	2800	4000	4000	10800	2800	4120	4806	11726	46006	
	Purchase Price	6,552 €	5,600 €	5,600 €	17,752 €	3,920 €	5,600 €	5,600 €	15,120 €	3,920 €	5,600 €	5,600 €	15,120 €	3,920 €	5,768 €	6,728 €	16,416 €	64,408 €	
Compact 4U-55WOL	Required Products	35	30	30	95	21	30	30	81	21	30	30	81	21	31	36	88	345	
	Purchase Price	32 €	27 €	27 €	86 €	19 €	27 €	27 €	73 €	19 €	27 €	27 €	73 €	19 €	28 €	32 €	79 €	311 €	
Switch 10A	Required Products	351	300	300	951	210	300	300	810	210	300	300	810	210	309	360	879	3450	
	Purchase Price	316 €	270 €	270 €	856 €	189 €	270 €	270 €	729 €	189 €	270 €	270 €	729 €	189 €	278 €	324 €	792 €	3,105 €	
TOTAL COGS		11,402 €	9,745 €	9,745 €	30,893 €	6,822 €	9,745 €	9,745 €	26,323 €	6,822 €	9,745 €	9,745 €	26,313 €	6,822 €	10,038 €	11,709 €	28,569 €	112,098 €	

COGS TRADITIONAL SALES BUDGET 2021																				
Items	Description	Jan	Feb	Mar	Quarter 1	Apr	May	Jun	Quarter 2	Jul	Aug	Sep	Quarter 3	Oct	Nov	Dec	Quarter 4	2021		
Junction Box CNS2157	Required Products		108	99	99	306	69	99	99	267	69	99	99	267	69	101	110	280	1121	
	Purchase Price		163 €	149 €	149 €	460 €	104 €	149 €	149 €	401 €	104 €	149 €	149 €	401 €	104 €	151 €	165 €	420 €	1,681 €	
Socket 2	Required Products		29	26	26	81	18	26	26	82	18	26	26	70	18	26	29	74	306	
	Purchase Price		26 €	23 €	23 €	72 €	16 €	23 €	23 €	74 €	16 €	23 €	23 €	63 €	16 €	24 €	26 €	66 €	276 €	
Atomat 4.5KA 1P20A	Required Products		54	50	50	154	35	50	50	135	35	50	50	135	35	51	55	141	565	
	Purchase Price		47 €	44 €	44 €	135 €	31 €	44 €	44 €	118 €	31 €	44 €	44 €	118 €	31 €	44 €	48 €	123 €	494 €	
Atomat 4.5KA 1P40A	Required Products		36	33	33	102	23	33	33	89	23	33	33	89	23	33	36	93	372	
	Purchase Price		44 €	40 €	40 €	124 €	28 €	40 €	40 €	109 €	28 €	40 €	40 €	109 €	28 €	41 €	44 €	113 €	456 €	
Flat wires 2x2.5 mm2	Required Products		3581	3300	3300	10181	2310	3300	3300	8910	2310	3300	3300	8910	2310	3350	3630	9290	37290	
	Purchase Price		4,297 €	3,960 €	3,960 €	12,217 €	2,772 €	3,960 €	3,960 €	10,692 €	2,772 €	3,960 €	3,960 €	10,692 €	2,772 €	4,019 €	4,356 €	11,147 €	44,748 €	
Flat wires 2x1.5 mm2	Required Products		4774	4400	4400	13574	3080	4400	4400	11880	3080	4400	4400	11880	3080	4466	4840	12386	49720	
	Purchase Price		6,684 €	6,160 €	6,160 €	19,004 €	4,312 €	6,160 €	6,160 €	16,632 €	4,312 €	6,160 €	6,160 €	16,632 €	4,312 €	6,252 €	6,776 €	17,340 €	69,608 €	
Compact 4U-55WOL	Required Products		36	33	33	102	23	33	33	89	23	33	33	89	23	33	33	90	369	
	Purchase Price		32 €	30 €	30 €	91 €	21 €	30 €	30 €	80 €	21 €	30 €	30 €	80 €	21 €	30 €	30 €	81 €	332 €	
Switch 10A	Required Products		358	330	330	1018	231	330	330	891	231	330	330	891	231	335	363	929	3729	
	Purchase Price		322 €	297 €	297 €	916 €	208 €	297 €	297 €	802 €	208 €	297 €	297 €	802 €	208 €	301 €	327 €	836 €	3,356 €	
TOTAL COGS			11,614 €	10,703 €	10,703 €	33,019 €	7,492 €	10,703 €	10,703 €	28,908 €	7,492 €	10,703 €	10,703 €	28,897 €	7,492 €	10,863 €	11,772 €	30,127 €	120,952 €	

COGS ONLINE SALES BUDGET 2021																				
Items	Description	Jan	Feb	Mar	Quarter 1	Apr	May	Jun	Quarter 2	Jul	Aug	Sep	Quarter 3	Oct	Nov	Dec	Quarter 4	2021		
Junction Box CNS2157	Required Products		22	20	20	62	14	20	20	54	14	20	20	54	14	20	35	70	239	
	Purchase Price		33 €	30 €	30 €	93 €	21 €	30 €	30 €	81 €	21 €	30 €	30 €	81 €	21 €	30 €	53 €	104 €	359 €	
Socket 2	Required Products		6	5	5	16	4	5	5	16	4	5	5	14	4	5	9	18	63	
	Purchase Price		5 €	5 €	5 €	14 €	3 €	5 €	5 €	14 €	3 €	5 €	5 €	12 €	3 €	5 €	9 €	16 €	57 €	
Atomat 4.5KA 1P20A	Required Products		11	10	10	31	7	10	10	27	7	10	10	27	7	10	18	35	120	
	Purchase Price		9 €	9 €	9 €	27 €	6 €	9 €	9 €	24 €	6 €	9 €	9 €	24 €	6 €	9 €	15 €	30 €	105 €	
Atomat 4.5KA 1P40A	Required Products		8	7	7	22	5	7	7	19	5	7	7	19	5	7	12	24	84	
	Purchase Price		10 €	9 €	9 €	27 €	6 €	9 €	9 €	23 €	6 €	9 €	9 €	23 €	6 €	9 €	15 €	30 €	103 €	
Flat wires 2x2.5 mm2	Required Products		716	660	660	2036	462	660	660	1782	462	660	660	1782	462	670	1162	2294	7894	
	Purchase Price		859 €	792 €	792 €	2,443 €	554 €	792 €	792 €	2,138 €	554 €	792 €	792 €	2,138 €	554 €	804 €	1,394 €	2,752 €	9,472 €	
Flat wires 2x1.5 mm2	Required Products		955	880	880	2715	616	880	880	2376	616	880	880	2376	616	893	1549	3058	10525	
	Purchase Price		1,337 €	1,232 €	1,232 €	3,801 €	862 €	1,232 €	1,232 €	3,326 €	862 €	1,232 €	1,232 €	3,326 €	862 €	1,250 €	2,168 €	4,281 €	14,735 €	
Compact 4U-55WOL	Required Products		8	7	7	22	5	7	7	19	5	7	7	19	5	7	12	24	84	
	Purchase Price		7 €	6 €	6 €	20 €	4 €	6 €	6 €	17 €	4 €	6 €	6 €	17 €	4 €	6 €	11 €	22 €	76 €	
Switch 10A	Required Products		72	66	66	204	46	66	66	178	46	66	66	178	46	67	117	230	790	
	Purchase Price		65 €	59 €	59 €	184 €	42 €	59 €	59 €	160 €	42 €	59 €	59 €	160 €	42 €	60 €	105 €	207 €	711 €	
TOTAL COSG			2,325 €	2,142 €	2,142 €	6,608 €	1,499 €	2,142 €	2,142 €	5,784 €	1,499 €	2,142 €	2,142 €	5,782 €	1,499 €	2,174 €	3,770 €	7,443 €	25,617 €	
COMBINED TOTAL COGS OF TRADITIONAL AND ONLINE SALES			13,938 €	12,844 €	12,844 €	39,627 €	8,991 €	12,844 €	12,844 €	34,692 €	8,991 €	12,844 €	12,844 €	34,680 €	8,991 €	13,037 €	15,542 €	37,570 €	146,569 €	

Attachment 6: Operating expenses budget

TRADITIONAL RETAIL OPERATING EXPENSES BUDGET				
Account code	Description	Monthly	Quarterly	Yearly
	Variable costs	1,420 €	4,260 €	17,040 €
6413	Phone bills	220 €	660 €	2,640 €
6413	Utilities (water, electricity, trash, etc)	1,200 €	3,600 €	14,400 €
	Fixed costs	13,517 €	36,950 €	147,800 €
6423	Internet	200 €	600 €	2,400 €
6418	Travel cost	1,300 €	3,900 €	15,600 €
6418	Inventory shrinkage	200 €	600 €	2,400 €
6428	Storage rent	1,200 €	3,600 €	14,400 €
6415	Business insurance expense	700 €	2,100 €	8,400 €
6418	Advertising and marketing	1,500 €	4,500 €	18,000 €
6427	Accounting services	300 €	900 €	3,600 €
6417	Web hosting	200 €	600 €	2,400 €
6421	Salary	5,000 €	15,000 €	60,000 €
6414	Depreciation expense	317 €	950 €	3,800 €
6427	POS system	1,200 €	3,600 €	14,400 €
6427	Bank account	200 €	600 €	2,400 €
6426	Cost overrun	1,200 €	3,600 €	14,400 €
	TOTAL COSTS	14,937 €	41,210 €	164,840 €
ONLINE RETAIL OPERATING EXPENSES BUDGET				
Account code	Description	Monthly	Quarterly	Yearly
	Variable cost	200 €	600 €	2,400 €
6417	Transaction costs	200 €	600 €	2,400 €
	Fixed cost	500 €	1,500 €	6,000 €
6417	Web hosting	250 €	750 €	3,000 €
6417	E-commerce platform	250 €	750 €	3,000 €
	TOTAL COSTS	700 €	2,100 €	8,400 €
	TOTAL COSTS OF ONLINE AND TRADITIONAL RETAIL	15,637 €	43,310 €	173,240 €

Attachment 7: Budgeted income statement

TRADITIONAL RETAIL BUDGETED INCOME STATEMENT 2020																		
Account code	Description	Jan	Feb	Mar	Quarter 1	Apr	May	Jun	Quarter 2	Jul	Aug	Sep	Quarter 3	Oct	Nov	Dec	Quarter 4	2020
5111	Sales revenue	€ 32,108	€ 29,580	€ 29,580	€ 91,267	€ 29,580	€ 29,580	€ 29,580	€ 88,739	€ 29,580	€ 29,580	€ 29,580	€ 88,739	€ 29,580	€ 29,580	€ 32,110	€ 91,269	€ 360,013
632	Cost of goods sold	€ 11,614	€ 10,703	€ 9,745	€ 30,893	€ 6,822	€ 9,745	€ 9,745	€ 26,323	€ 6,822	€ 9,745	€ 9,745	€ 26,313	€ 6,822	€ 10,038	€ 11,709	€ 28,569	€ 112,098
	Gross Profit	€ 20,494	€ 18,877	€ 19,834	€ 60,374	€ 22,758	€ 19,834	€ 19,834	€ 62,416	€ 22,758	€ 19,834	€ 19,834	€ 62,426	€ 22,758	€ 19,542	€ 20,400	€ 62,699	€ 247,915
642	Operating expenses	€ 14,937	€ 14,937	€ 14,937	€ 41,210	€ 14,937	€ 14,937	€ 14,937	€ 41,210	€ 14,937	€ 14,937	€ 14,937	€ 41,210	€ 14,937	€ 14,937	€ 14,937	€ 41,210	€ 164,840
	Operating income	€ 5,558	€ 3,940	€ 4,897	€ 19,164	€ 7,821	€ 4,897	€ 4,897	€ 21,206	€ 7,821	€ 4,897	€ 4,897	€ 21,216	€ 7,821	€ 4,605	€ 5,464	€ 21,489	€ 83,075
811	Interest expense	€ 208	€ 208	€ 208	€ 625	€ 208	€ 208	€ 208	€ 624	€ 208	€ 208	€ 208	€ 624	€ 208	€ 208	€ 208	€ 624	€ 2,497
821	Income tax	€ 1,112	€ 788	€ 979	€ 3,833	€ 1,564	€ 979	€ 979	€ 4,241	€ 1,564	€ 979	€ 979	€ 4,243	€ 1,564	€ 921	€ 1,093	€ 4,298	€ 16,615
911	Net Income	€ 4,238	€ 2,944	€ 3,710	€ 14,706	€ 6,048	€ 3,710	€ 3,710	€ 16,341	€ 6,048	€ 3,710	€ 3,710	€ 16,349	€ 6,048	€ 3,476	€ 4,163	€ 16,568	€ 63,963

TRADITIONAL RETAIL BUDGETED INCOME STATEMENT 2021																		
Account code	Description	Jan	Feb	Mar	Quarter 1	Apr	May	Jun	Quarter 2	Jul	Aug	Sep	Quarter 3	Oct	Nov	Dec	Quarter 4	2021
5111	Sales revenue	€ 34,142	€ 32,538	€ 32,538	€ 99,217	€ 32,538	€ 32,538	€ 32,538	€ 97,613	€ 32,538	€ 32,538	€ 32,538	€ 97,613	€ 32,538	€ 32,538	€ 34,133	€ 99,208	€ 393,650
632	Cost of goods sold	€ 11,614	€ 10,703	€ 10,703	€ 33,019	€ 7,492	€ 10,703	€ 10,703	€ 28,908	€ 7,492	€ 10,703	€ 10,703	€ 28,897	€ 7,492	€ 10,863	€ 11,772	€ 30,127	€ 120,952
	Gross Profit	€ 22,528	€ 21,835	€ 21,835	€ 66,198	€ 25,046	€ 21,835	€ 21,835	€ 68,704	€ 25,046	€ 21,835	€ 21,835	€ 68,715	€ 25,046	€ 21,674	€ 22,361	€ 69,081	€ 272,698
642	Operating expenses	€ 14,937	€ 14,937	€ 14,937	€ 41,210	€ 14,937	€ 14,937	€ 14,937	€ 41,210	€ 14,937	€ 14,937	€ 14,937	€ 41,210	€ 14,937	€ 14,937	€ 14,937	€ 41,210	€ 164,840
	Operating income	€ 7,592	€ 6,898	€ 6,898	€ 24,988	€ 10,109	€ 6,898	€ 6,898	€ 27,494	€ 10,109	€ 6,898	€ 6,898	€ 27,505	€ 10,109	€ 6,738	€ 7,425	€ 27,871	€ 107,858
821	Income tax	€ 1,518	€ 1,380	€ 1,380	€ 4,998	€ 2,022	€ 1,380	€ 1,380	€ 5,499	€ 2,022	€ 1,380	€ 1,380	€ 5,501	€ 2,022	€ 1,348	€ 1,485	€ 5,574	€ 21,572
911	Net Income	€ 6,073	€ 5,518	€ 5,518	€ 19,990	€ 8,087	€ 5,518	€ 5,518	€ 21,996	€ 8,087	€ 5,518	€ 5,518	€ 22,004	€ 8,087	€ 5,390	€ 5,940	€ 22,297	€ 86,287

ONLINE RETAIL BUDGETED INCOME STATEMENT 2021																		
Account code	Description	Jan	Feb	Mar	Quarter 1	Apr	May	Jun	Quarter 2	Jul	Aug	Sep	Quarter 3	Oct	Nov	Dec	Quarter 4	2021
5111	Sales revenue	€ 6,835	€ 6,511	€ 6,511	€ 19,856	€ 6,511	€ 6,511	€ 6,511	€ 19,532	€ 6,511	€ 6,511	€ 6,511	€ 19,532	€ 6,511	€ 6,511	€ 6,835	€ 19,856	€ 78,775
632	Cost of goods sold	€ 2,325	€ 2,142	€ 2,142	€ 6,608	€ 1,499	€ 2,142	€ 2,142	€ 5,784	€ 1,499	€ 2,142	€ 2,142	€ 5,782	€ 1,499	€ 2,174	€ 3,770	€ 7,443	€ 25,617
	Gross Profit	€ 4,510	€ 4,369	€ 4,369	€ 13,248	€ 5,011	€ 4,369	€ 4,369	€ 13,747	€ 5,011	€ 4,369	€ 4,369	€ 13,749	€ 5,011	€ 4,337	€ 3,065	€ 12,413	€ 53,158
642	Operating expenses	€ 700	€ 700	€ 700	€ 2,100	€ 700	€ 700	€ 700	€ 2,100	€ 700	€ 700	€ 700	€ 2,100	€ 700	€ 700	€ 700	€ 2,100	€ 8,400
	Operating income	€ 3,810	€ 3,669	€ 3,669	€ 11,148	€ 4,311	€ 3,669	€ 3,669	€ 11,647	€ 4,311	€ 3,669	€ 3,669	€ 11,649	€ 4,311	€ 3,637	€ 2,365	€ 10,313	€ 44,758
821	Income tax	€ 762	€ 734	€ 734	€ 2,230	€ 862	€ 734	€ 734	€ 2,329	€ 862	€ 734	€ 734	€ 2,330	€ 862	€ 727	€ 473	€ 2,063	€ 8,952
911	Net Income	€ 3,048	€ 2,935	€ 2,935	€ 8,919	€ 3,449	€ 2,935	€ 2,935	€ 9,318	€ 3,449	€ 2,935	€ 2,935	€ 9,320	€ 3,449	€ 2,909	€ 1,892	€ 8,251	€ 35,807

COMBINED TOTAL NET INCOME																		
OF TRADITIONAL AND ONLINE SALES		€ 9,121	€ 8,454	€ 8,454	€ 28,909	€ 11,536	€ 8,454	€ 8,454	€ 31,313	€ 11,536	€ 8,454	€ 8,454	€ 31,324	€ 11,536	€ 8,299	€ 7,832	€ 30,548	€ 122,093

Attachment 8: Capital expenditure budget

CAPITAL EXPENDITURE BUDGET							
DESCRIPTION	Value	Life Usage	Depreciation each year	Accumulated depreciation Dec 2020	Accumulated depreciation Dec 2021	Remaining value	
Office equipment	€ 7,000	7	€ 1,000	€ 5,000	€ 6,000	€ 1,000	
Technology equipment	€ 8,000	10	€ 800	€ 4,000	€ 4,800	€ 3,200	
Truck	€ 10,000	10	€ 1,000	€ 5,000	€ 6,000	€ 4,000	
Showroom	€ 25,000	25	€ 1,000	€ 5,000	€ 6,000	€ 19,000	
Total	€ 50,000		€ 3,800	€ 19,000	€ 22,800	€ 27,200	

Attachment 9: Cash flow budget

CASH FLOW BUDGET 2020 (TRADITIONAL RETAIL)																		
Account code	Description	Jan	Feb	Mar	Quarter 1	Apr	May	Jun	Quarter 2	Jul	Aug	Sep	Quarter 3	Oct	Nov	Dec	Quarter 4	2020
	Beginning cash balance	€ 5,190	€ 53,230	€ 57,538	€ 5,190	€ 62,035	€ 69,063	€ 74,337	€ 62,035	€ 79,026	€ 86,054	€ 91,328	€ 79,026	€ 96,017	€ 103,045	€ 108,084	€ 96,017	€ 5,190
	Cash collection																	
1111	Cash sales	€ 22,476	€ 20,706	€ 20,706	€ 63,887	€ 20,706	€ 20,706	€ 20,706	€ 62,117	€ 20,706	€ 20,706	€ 20,706	€ 62,117	€ 20,706	€ 20,706	€ 22,477	€ 63,888	€ 252,009
131	Collections on credit sales		€ 9,632	€ 8,874	€ 18,506	€ 8,874	€ 8,874	€ 8,874	€ 26,622	€ 8,874	€ 8,874	€ 8,874	€ 26,622	€ 8,874	€ 8,874	€ 8,874	€ 26,622	€ 98,371
	<i>Total cash-in</i>	€ 22,476	€ 30,338	€ 29,580	€ 82,393	€ 29,580	€ 29,580	€ 29,580	€ 88,739	€ 29,580	€ 29,580	€ 29,580	€ 88,739	€ 29,580	€ 29,580	€ 31,351	€ 90,510	€ 350,380
	Cash Payments																	
632	Inventory payment	€ 9,291	€ 8,562	€ 7,796	€ 24,714	€ 5,457	€ 7,796	€ 7,796	€ 21,058	€ 5,457	€ 7,796	€ 7,796	€ 21,050	€ 5,457	€ 8,030	€ 9,368	€ 22,855	€ 89,678
3348	Remaining inventory payment		€ 2,323	€ 2,141	€ 4,463	€ 1,949	€ 1,364	€ 1,949	€ 5,263	€ 1,949	€ 1,364	€ 1,949	€ 5,263	€ 1,949	€ 1,364	€ 2,008	€ 5,321	€ 20,309
642	Operating expenses	€ 14,937	€ 14,937	€ 14,937	€ 41,210	€ 14,937	€ 14,937	€ 14,937	€ 41,210	€ 14,937	€ 14,937	€ 14,937	€ 41,210	€ 14,937	€ 14,937	€ 14,937	€ 41,210	€ 164,840
3411	Loan payment																€ 50,000	
	<i>Total cash-out</i>	€ 24,228	€ 25,822	€ 24,874	€ 70,388	€ 22,343	€ 24,097	€ 24,682	€ 67,531	€ 22,343	€ 24,097	€ 24,682	€ 67,523	€ 22,343	€ 24,331	€ 76,312	€ 69,386	€ 274,827
	Ending balance before financing:	€ 3,438	€ 57,746	€ 62,244	€ 17,195	€ 69,271	€ 74,545	€ 79,234	€ 83,243	€ 86,262	€ 91,536	€ 96,225	€ 100,242	€ 103,253	€ 108,293	€ 63,123	€ 117,140	€ 80,742
	Financing:																	
1121	Short-term loan	€ 50,000																
811	Interest payment	€ 208	€ 208	€ 208	€ 625	€ 208	€ 208	€ 208	€ 625	€ 208	€ 208	€ 208	€ 625	€ 208	€ 208	€ 208	€ 624	€ 2,496
	End-cash balance	€ 53,230	€ 57,538	€ 62,035	€ 62,035	€ 69,063	€ 74,337	€ 79,026	€ 79,026	€ 86,054	€ 91,328	€ 96,017	€ 96,017	€ 103,045	€ 108,084	€ 62,915	€ 62,915	€ 62,915

CASH FLOW BUDGET 2021 (TRADITIONAL AND ONLINE RETAIL)																		
Account code	Description	Jan	Feb	Mar	Quarter 1	Apr	May	Jun	Quarter 2	Jul	Aug	Sep	Quarter 3	Oct	Nov	Dec	Quarter 4	2021
	Beginning cash balance	€ 62,915	€ 72,102	€ 83,029	€ 62,915	€ 93,596	€ 107,246	€ 118,583	€ 93,596	€ 129,150	€ 142,800	€ 154,138	€ 129,150	€ 164,705	€ 178,355	€ 189,538	€ 164,705	€ 62,915
	Cash collection																	
1111	Cash sales	€ 28,684	€ 27,334	€ 27,334	€ 83,351	€ 27,334	€ 27,334	€ 27,334	€ 82,001	€ 27,334	€ 27,334	€ 27,334	€ 82,001	€ 27,334	€ 27,334	€ 28,678	€ 83,345	€ 330,698
131	Collections on credit sales	€ 9,633	€ 12,293	€ 11,714	€ 33,640	€ 11,714	€ 11,714	€ 11,714	€ 35,143	€ 11,714	€ 11,714	€ 11,714	€ 35,143	€ 11,714	€ 11,714	€ 11,714	€ 35,143	€ 139,070
	<i>Total cash-in</i>	€ 38,317	€ 39,627	€ 39,048	€ 116,991	€ 39,048	€ 39,048	€ 39,048	€ 117,144	€ 39,048	€ 39,048	€ 39,048	€ 117,144	€ 39,048	€ 39,048	€ 40,392	€ 118,488	€ 469,768
	Cash Payments																	
632	Inventory payment	€ 11,151	€ 10,275	€ 10,275	€ 31,702	€ 7,193	€ 10,275	€ 10,275	€ 27,744	€ 7,193	€ 10,275	€ 10,275	€ 27,744	€ 7,193	€ 10,430	€ 12,433	€ 30,056	€ 117,245
3348	Remaining inventory payment	€ 2,342	€ 2,788	€ 2,569	€ 7,698	€ 2,569	€ 1,798	€ 2,569	€ 6,936	€ 2,569	€ 1,798	€ 2,569	€ 6,936	€ 2,569	€ 1,798	€ 2,607	€ 6,974	€ 28,545
642	Operating expenses	€ 15,637	€ 15,637	€ 15,637	€ 46,910	€ 15,637	€ 15,637	€ 15,637	€ 46,910	€ 15,637	€ 15,637	€ 15,637	€ 46,910	€ 15,637	€ 15,637	€ 15,637	€ 46,910	€ 187,640
3411	Loan payment																	
	<i>Total cash-out</i>	€ 29,129	€ 28,700	€ 28,481	€ 86,310	€ 25,398	€ 27,710	€ 28,481	€ 81,590	€ 25,398	€ 27,710	€ 28,481	€ 81,590	€ 25,398	€ 27,864	€ 30,678	€ 83,940	€ 333,430
	Ending balance before financing:	€ 72,102	€ 83,029	€ 93,596	€ 93,596	€ 107,246	€ 118,583	€ 129,150	€ 129,150	€ 142,800	€ 154,138	€ 164,705	€ 164,705	€ 178,355	€ 189,538	€ 199,253	€ 199,253	€ 199,253
	Financing:																	
1121	Short-term loan																	
811	Interest payment																	
	End-cash balance	€ 72,102	€ 83,029	€ 93,596	€ 93,596	€ 107,246	€ 118,583	€ 129,150	€ 129,150	€ 142,800	€ 154,138	€ 164,705	€ 164,705	€ 178,355	€ 189,538	€ 199,253	€ 199,253	€ 199,253

Attachment 10: Budget balance sheet

BUDGETED BALANCE SHEET 2020		
ACCOUNT CODE	DESCRIPTION	31-Dec
Assets		
<i>Current Assets</i>		
1111	Cash	€ 62,915
1388	VAT receivable	€ 1,171
131	Accounts receivable	€ 8,874
2293	Allowance for doubtful account	€ (409)
1561	Inventories	€ 1,766
1534	Spare-parts equipment	€ 11,888
2294	Inventory shrinkage	€ (200)
Total current assets		€ 86,005
<i>Non-Current Assets</i>		
<i>Property, plant, and equipment:</i>		
2111	Showroom	€ 25,000
2141	Less: accumulated depreciation	€ 5,000
2113	Truck	€ 10,000
2141	Less: accumulated depreciation	€ 5,000
2112	Technology equipment	€ 8,000
2141	Less: accumulated depreciation	€ 4,000
2114	Office equipment	€ 7,000
2141	Less: accumulated depreciation	€ 5,000
211	Total property, plant, and equipment	€ 31,000
242	Prepaid expense long term	
Total non-current assets		€ 31,000
Total assets		€ 117,005
Liabilities and equity		
Liabilities		
<i>Current liabilities:</i>		
33311	VAT payable	€ 3,211
3348	Accounts payable	€ 2,342
353	Bonus and welfare	€ 500
Total current liabilities		€ 6,053
<i>Non current liabilities</i>		
3411	Long term loans	€ 30,000
Total non current liabilities		€ 30,000
Total liabilities		€ 36,053
Equity		
414	Investment and development fund	€ 500
441	Capital	€ 25,000
4212	Retained earnings	€ 55,452
Total stockholders' equity		€ 80,952
Total liabilities and equity		€ 117,005

BUDGETED BALANCE SHEET 2021		
ACCOUNT CODE	DESCRIPTION	31-Dec
Assets		
<i>Current Assets</i>		
1111	Cash	€ 199,253
1388	VAT receivable	€ 1,554
131	Accounts receivable	€ 11,714
2293	Allowance for doubtful account	€ (571)
1561	Inventories	€ 3,532
2294	Inventory shrinkage	€ (200)
Total current assets		€ 215,283
<i>Non-Current Assets</i>		
<i>Property, plant, and equipment:</i>		
2111	Showroom	€ 25,000
2141	Less: accumulated depreciation	€ 6,000
2113	Truck	€ 10,000
2141	Less: accumulated depreciation	€ 6,000
2112	Technology equipment	€ 8,000
2141	Less: accumulated depreciation	€ 4,800
2114	Office equipment	€ 7,000
2141	Less: accumulated depreciation	€ 6,000
211	Total property, plant, and equipment	€ 27,200
242	Prepaid expense long term	
Total non-current assets		€ 27,200
Total assets		€ 242,483
Liabilities and equity		
<i>Liabilities</i>		
<i>Current liabilities:</i>		
33311	VAT payable	€ 4,097
3348	Accounts payable	€ 3,108
3348	Other payables	€ 14,243
353	Bonus and welfare	€ 820
Total current liabilities		€ 22,268
<i>Non current liabilities</i>		
3411	Long term loans	€ 30,000
	Interest payables	
Total non current liabilities		€ 30,000
Total liabilities		€ 52,268
<i>Equity</i>		
414	Investment and development fund	€ 1,640
441	Capital	€ 25,000
4212	Retained earnings	€ 163,575
Total stockholders' equity		€ 190,215
Total liabilities and equity		€ 242,483

Attachment 11: Budget balance sheet note

Account code	Explanation
1111	Cash is from cash flow budget statement, the end-cash balance of December 2021.
1388	10% of the purchased inventory in the year. The purchased inventory price includes VAT.
131	Account receivable is from the cash flow, which is 30% of last month's total sales.
2293	The company estimates that 4-5% of credit sales will default due.
1561	Ending inventory price.
1534	This account includes spare-parts and accessories for damaged non-current assets, for examples: shelf in the showroom and truck tires. In this account, some are supported by other partner companies. This account is not fixed asset because it is used within a year and each part is not over 1100 € (according to Vietnam accounting standard, Circular 45 2013). This account was accumulated since 2016 The company will use all spare-parts in the year 2020 following the 5-year-plan since 2016.
2294	Inventory thief, damages and similar issues.
211	Includes showroom with 25 years useful life, Trucks with 10 years useful life, technology equipment with 10 years useful life and office equipment with 7 years useful life. Fixed assets were purchased in 2016. Depreciation is calculated by the straight-line method. In 2021, damaged parts of fixed assets are replaced so that the value and accumulated depreciation does not change.
33311	10% of sales revenues. Sales revenue in Sales revenue budget includes VAT.
3348	Account payable is from the cash flow, which is 20% of last month's total purchased inventory price.
353	Bonus and welfare are used for rewards or team-building events. Depending on each year's profit that the bonus percentage is different. In 2020, the bonus and welfare are extracted 3-5% from the last quarter net income after tax. The same as 2021

3411	The owner borrowed long term loan from relatives and family since 2016 without interest. It was used for purchasing some of the fixed assets and other activities for running the business.
414	This fund is used for expanding the business, for spare-part equipment, HR training and other investment. Depending on each year's profit that the fund percentage is different. In 2020, the owner will extract 3-5% from the last quarter 2019 net income after tax. In 2021, if the net income come to the expectation, the investment and development fund will be 10% of the last quarter of the previous year.
441	Owner capital
4212	Retained earnings of 2019 are expected to be more than 4000. But due to the extraction for bonus & welfare and investment & development fund, which is recorded only at the beginning of 2020, bonus & welfare and investment & development fund will be subtracted from retained earnings. The same rule applied for 2021 retained earnings.
3348	The amount payables for the breach of the B2B contract (late delivery, damaged products, end contract before expiration) or fouling tax policies