HAAGA-HELIA
University of Applied Sciences

Designing budgeting tool and sensitivity analysis for a start-up. Case: Witrafi Oy

Muhammad Arafath

Bachelor's Thesis
Degree Programme in International Business
2014

HAAGA-HELIA University of Applied Sciences

Abstract

12. 01.2015

International Business

Author or authors Arafath, Muhammad Yasir	**Group or year of entry** GloBBA 11K
Title of report Designing budgeting tool and sensitivity analysis for a start-up. Case: Witrafi Oy	**Number of report pages and attachment pages** 29+9
Teacher(s) or supervisor(s) Jaana Melamies, Anne Arkima	

This study presents a thesis on the topic of designing budgeting tool and sensitivity analysis for the commissioning company. The commissioning company is a Finnish Star-up and currently focusing on developing Intelligent Transport Systems by using network based parking system. The aim of this thesis is to provide a ready-made budgeting tool therefore, the commissioning company can use the tool for its own purpose.

This is a product-oriented thesis and it includes five project tasks. Project task one defines budget, project task two establish the purposes of budget, project task three design the budgeting tool, project task four implement the tool and finally project task five evaluates the project.

The budgeting tool is designed by using Microsoft Excel and it consists revenue budget, operating expense budget, cash collection budget, cash payments budget, combined cash budget, cost of goods sold budget, budgeted income statement and sensitivity analysis.

The outcomes of the project is: a ready-made budgeting tool for the year 2015 and 2016 and sensitivity analysis.

Keywords
Budget, budgeting, master budget, start-up company, sensitivity analysis

Table of contents

1 Introduction

Budgeting is a common accounting tool for companies to implement strategies. Management uses budget to follow the company's goals. It helps managers to look forward and to plan their duties in advance. Budget provides measurement of the financial results for a company what the company expects from its planned activities. Without budgets it is difficult for a company to know whether it is on target to fulfil the goal. This is also true for a Start-up company.

1.1 Background of the thesis

Witrafi Oy (Y- 258322-2) is a Finnish start-up company. It is founded in 2013 and here referred as Witrafi. After discussion with the CEO of the commissioned company, it is decide that the thesis topic will be "Designing budgeting tool and sensitivity analysis for a start-up". At present Witrafi needs a budgeting tool which will be helpful for the company to understand the budget related scenario.

The final outcome of this project is to create a ready-made budgeting tool and sensitivity analysis.

1.2 Project objective and project tasks

This is a product oriented thesis. The project objective and project tasks are listed below based on company's needs.

Project objective (PO): Designing budgeting tool and sensitivity analysis for a Start-up.

Project tasks (PTs):

- PT1: Defining budget.
- PT2: Establishing the purposes of budget.
- PT3: Creating the budgeting tool.
- PT4: Implementing the budgeting tool.
- PT5: Evaluating the project.

Table 1 presents the overlay matrix for the thesis outcomes in each project tasks.

Table 1. Overlay matrix.

Project tasks	**Methods**	**Outcome(s)**
PT1: Defining budget	Desktop research.	General idea about budget.
PT2: Establishing the purposes of budget.	Desktop research.	Purposes of a budget.
PT3: Creating the budgeting tool.	Theoretical framework.	Guideline for the budgeting tool.
PT4: Implementing the tool.	Excel tool.	Practical implementation of the tool.
PT5: Evaluating the project.	Main findings, limitations, further development, personal learning.	Evaluation.

1.3 Project scope

This thesis focus only budgeting areas of managerial accounting. In order to accomplish the project author thinks Master Budget is the best suited theory. The main reason is that it gives the total overview of the budgeting process for example from where the revenue comes, operational expenses, financial position etcetera.

This budgeting tool is only designed for the internal management of the company. Moreover, this study will not include capital expenditure and budgeted balance sheet because in this initial stage Witrafi does not have any investment plan.

1.4 International aspect

In this budgeting tool author used internationally accepted terms and theories. If the company wish to launch the same operations in other markets then small modification needed in the tool to fit the characteristics of those markets. In this way this thesis has international aspect.

1.5 Anticipated benefits

This budgeting tool provides Witrafi profit position in the future therefore the company can able to benchmark real outcomes against estimated budgets. Moreover, this tool also offers the company to analyse the future changes and profitability.

In this thesis project there are two stakeholders. One is the company and other one is author himself. At present the management of the company do not have clear idea about the budget and budgeting tool. This study will provide the management a ready-made budgeting tool and instructions how to use the tool.

From the author's point of view, author needs a company to fulfil the thesis criteria eventually which will lead him to graduate. At the same time author can apply his knowledge what he learns from the school. Finally it can be said that it is a win-win situation for the both parties.

1.6 Case company introduction

Currently Witrafi is focusing on developing Intelligent Transport Systems by using network based parking system (Witrafi Oy 2014.) It is a long-range, low-power and position-capable system which can be used in all parking cases like street side, underground or even in the garage. Witrafi offers services for the consumer, professional and public sectors. The main product of Witrafi is cutting edge intelligent parking system and goal is to make parking more time-efficient as well as payment-wise.

Witrafi mainly provides a user device which is placed in the dashboard of a car and access points are placed like traffic lights, street lights and parking payments machines. With the help of the device a car can find its position in parking areas. This system can also be used for -

Figure 1. Usages of Witrafi's product (Witrafi Oy 2014.)

1.7 Key concepts

Budget "A budget is the quantitative expression of a proposed plan of action by management for a specified period and an aid to coordinate what needs to be done to implement that plan" (Horngren, Datar & Rajan 2012, 206). A budget generally consist financial and nonfinancial perspective of a plan and at the same time it helps the company to follow its plan.

Budgeting predict cost and resources for a specific period of time by following certain plan. Final outcomes of budgeting is budgets. Budgeting helps companies to plan, control and also support companies managerial strategies. (Ross 2014, 4.)

Tax is a financial charge usually in the form of money imposed upon a taxpayer by the authority. If the tax is charged directly on personal or corporate income then it is called direct tax. On the other and if the tax is charged on goods or service then it is called indirect tax. The main purpose of tax is to cover government expenditure. Merriam-Webster dictionary defines "Tax is an amount of money that a government requires people to pay according to their income, the value of their property, etc., and that is used to pay for the things done by the government" (Merriam-Webster 2014).

Start-up company is a company which is in the first stage of its operations. In other words it is in the earliest stage of its development. Generally Start-up company focus on product development and looking for capitalization. (THE FREE DICTIONARY 2014.) Neil Blumenthal cofounder and Co-CEO of Warby Parker said that a start-up company is working to solve a problem but the success is not guaranteed. According to Merriam-Webster (2014.) start-up means "the act or an instance of setting in operation or motion" or "a fledgling business enterprise". The American Heritage Dictionary (2014.) defines start-up is "a business or undertaking that has recently begun operation." Therefore, there are no hard and fast rules to define a start-up based on revenues, profits and employee numbers. (Robehmed 2013.)

2 Purposes of budget

Very often people think the word *budget* primarily links with the limitations on spending. In an organization management often gives a spending budget to a unit of the organization and expects from the unit to stay within the limits of the budget. However, budget can play more important role than limiting spending. (Horngren, Sundem, Burgstahler & Schatzberg 2014, 289.)

> Organizations develop strategies as a basis to compete in their operating environment. Budget are a key component of the organization's planning and control system. More specifically, budgets are forecasts of future revenues and expenditures. Once established, budget provide a control tool to ensure that organizational members work to achieve the organizational goals that create organizational value.
>
> (McWatters, Zimmerman & Morse 2008, 266.)

A budget is an informative plan which is expressed in quantitative form to show how the resources will be acquired and used during a specific period. (Hilton 2008, 348.)

> Budgeting is the process of gathering information to assist in making forecasts. Budgeting can be a very costly process. Managers often spend up to 20 per cent of their time on budgeting. The popularity of budgeting, however, indicates that its perceived benefits are greater than its costs.
>
> (McWatters et al. 2008, 266.)

Budgeting system have the following purposes-

Planning: Budgeting play an important role in decisions making. One reason of budgeting is within the organization to transfer information who are involved in decision making. The planning process includes long term and short term plans. Budgeting helps a manager to achieve long-term goals with short-term business activities by wisely distributing workloads and resources within the organization.

Executing: In executing stage, managers use budget information for communication, benchmarking and problem recognition. Very often managers use budget information daily, weekly and monthly to communicate expectations about the performance of activities and the availability of resources of the organization. Budget also help managers to coordinate within the organization. To take an example, a budget allows purchasing personnel to incorporate the plans with production requirements, whereas production managers use the sales budget. (Horngren et al. 2014, 291.)

Reviewing: Budgeting typically used for evaluating the performance of the organization. "In reviewing stage, managers calculate variances, evaluate performance, review the timeliness of activities performed and create solutions for continuous improvement" (Needles & Crosson 2002, 258). Reviewing the variances help to understand the waste and savings in production, sales, purchasing and other business activities. If problems arise then managers can work together to find out the solutions.

Reporting: Throughout the year managers can report on budget information and give feedback about the organization's operating, investing and financial activities. Budget can also reports for future actions. (Needles & Crosson 2002, 259.)

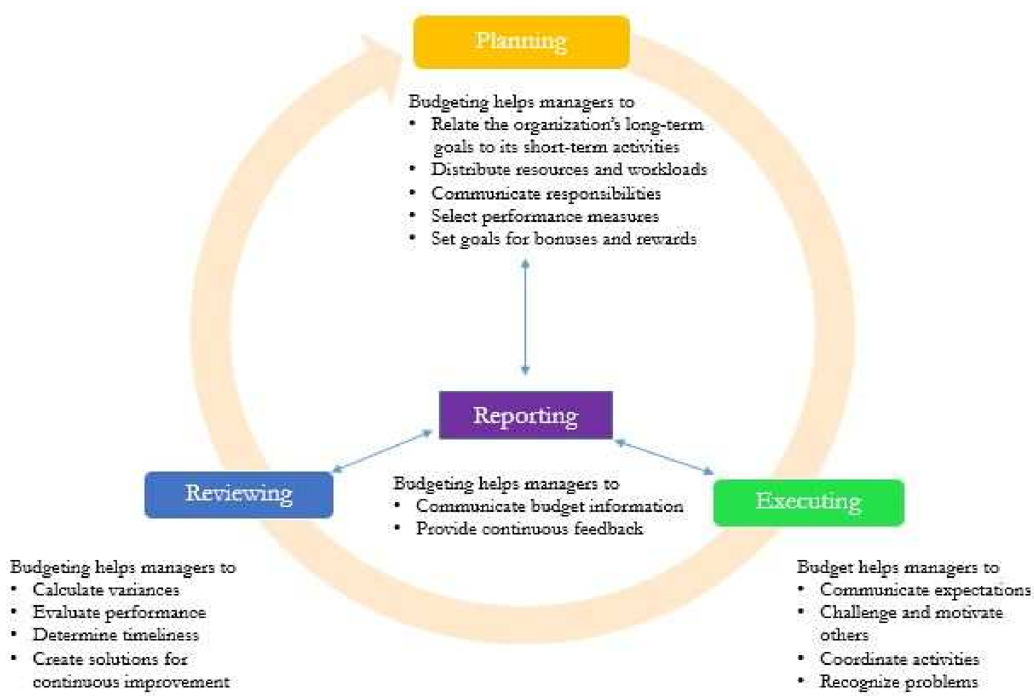

Figure 2. Budgeting and the management cycle (Needles & Crosson 2002, 258)

3 Creating the budgeting tool

This chapter gives an idea to reader different types of budget. Therefore, reader can justify which type of budget is suitable for the case company.

To keep the budget as functional as possible managers apply different types of budget according to the requirements of the organization. These are-

Static budget do not vary with the volume and it is created before the beginning of a financial year.

Flexible budget is stated as a function of volume measurement. It gives better estimate o2f the actual performance of a person or venture. Flexible budgets are primarily used for manufacturing settings but it can also be used for budgeting distribution, marketing, R&D or general and administrative expense. (McWatters et al. 2008, 275.)

Rolling budget or continuous budget is a master budget which is continually updated by adding a new incremental time period for example a month or a quarter. It helps managers to think about the next full year. Therefore, the budgeting of a Rolling budget is an ongoing process. (Horngren et al. 2014, 295.)

Activity-based budget helps organizations to manage cost more efficiently. Normally, companies who implement activity-based costing also implement activity-based budgeting. The aim of activity-based budgeting is to provide only those resources what needed to production or sell. (Horngren et al. 2014, 307.)

Zero-base budget requires each cost element to be justified. The term zero-base comes from the assumption that the budget for each activity will start with zero. The advantage of this system is that managers reassess all activities in each new budget. (Horngren et al. 2014, 290.)

3.1 Master budget

Master budget gives the total budgeting plan for the organization. It provides all the supporting information to create the budgeted financial statements. "Master budget expresses management's operating and financial plans for a specified period (usually a fiscal year), and it includes a set of budgeted financial statements"(Horngren et al. 2012, 207).

Master budget has two major parts. One is operating budget and another is financial budget. Operating budget consists sales budget, operating expense budget, purchases and cost of goods sold budget and budgeted income statement. Whereas, financial budget includes cash budget, capital budget and budgeted balance sheet.

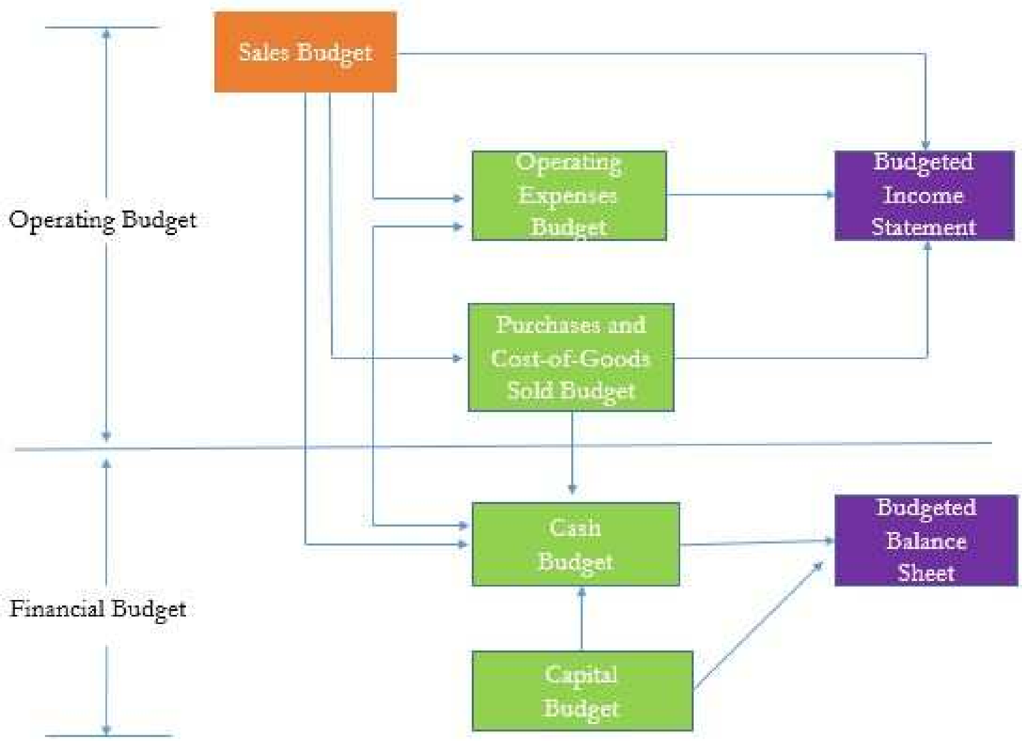

Figure 3. Preparation of the Master Budget for a Merchandising Company (Horngren et al. 2014, 296)

Operating budgets are the budget that need to run the daily activities of a company. Operating budget mainly focus on income statement and its supporting items. The starting point for an operating budget is the sales budget and its affects other components of the master budget. (Braun, Tietz & Harrison 2010, 479.) After estimating sales budget a merchandising company prepare operating expense budget and purchase and cost of goods sold budget eventually these lead to budgeted income statement.

Sales budget is the starting point for the preparation of master budget. Sales budget provides detail plan of expected sales for future period in terms of units and currencies. Sales manager use this information for planning sales and marketing related activities and Accountants use this information for estimating cash receipts for the cash budget. (Needles & Crosson 2002, 263.)

Operating expense budget provides all the detail of variable, fixed and other costs related to the company for a specific period of time. Therefore, the company can understand its expenditure for the specific period.

Cost of goods sold, inventory and purchases budget is a merchandiser's budget which provides details about the cost of goods sold, the amount of desired ending inventory and amount to be purchased during the budgeted period.

Budgeted income statement projects companies expected revenue and expenses for the budgeted period. Information about expected revenue, expenses and costs are coming from operating budget.

Financial budget consists capital budget, cash budget and budgeted balance sheet. It focuses on the effects of operating budget and planned capital outlays on cash. (Bhimani, Horngren, Datar & Rajan 2012, 461.)

Cash budget is a statement of expected cash receipts and disbursements during a budgeted period. Cash budget helps for cash planning and controlling. It helps management to avoid unnecessary idle cash or unexpected cash deficiencies.

Capital budget is a detailed plan which represents the intention of a company to invest in new property, plant or equipment. Before planning capital investment company's should develop this budget in the early stage because the addition investment could affect depreciation expense, interest expense or dividend payments. (Braun et al. 2010, 490.)

Budgeted balance sheet shows the expected financial position of a company for a future period. This is the final step in preparing master budget.

3.2 Cost behavior and types of costs

Cost can be defined as a resource which is sacrificed to achieve certain goal. People usually think costs as monetary value that is paid to acquire goods or services. Based on cost object, costs can be classified into direct cost or indirect cost. A **cost object** is "anything for which a separate measurement of costs is desired" (Bhimani et al. 2012, 913.) It means a certain cost can be direct or indirect based on cost object.

Direct cost are costs that are closely related to the cost object and can be traced in cost efficient way. For example, in merchandising business, unit cost is an example of direct costs and the assignment of direct costs for the selective object is known as **Cost tracing** (Bhimani et al. 2012, 35.)

Indirect cost are costs that are related to the cost object but cannot be traced in cost efficient way. For instance, travel and maintenance can be example of indirect costs in merchandise business. The assignment of indirect costs for the selective object is referred as **Cost allocation.**

Figure 4. Relationship of direct and indirect costs to a cost object (Bhimani et al. 2012, 35)

To make a wise decision managers should know the cost behavior. Without knowing cost behavior it is not possible to make a good plan. Based on behavior costs generally categorized into fixed costs and variable costs.

Fixed costs is a cost which is constant in total as the level of activity varies. If activity increases or decreases, total fixed costs keeps the same. (Hilton 2008, 51.)

Variable costs is a cost which is changed directly according to the change in the level of activity. If activity increases by some percent than total variable cost also increases with the same level of percentage. That means variable costs fluctuate with the level of production.

3.3 Job costing

Job costing is a common methods of product costing. It allocates costs to diverse products. Job costing is "the method of allocating costs to heterogeneous products that are readily identified by individual units or batches, each of which requires differential (sometimes custom) amount of materials, labor and overhead" (Horngren et al. 2014, 595). In this system a job is a task where resources are used to produce product or service.

Job costing is used by companies mainly to produce unique or custom-ordered products. A separate job is considered as unique product or small batch of units. Based on direct materials, direct labor and manufacturing overhead costs job costing calculates costs separately. The main reason is that every job is different and it would not be reasonable to assign costs equally. (Braun et al. 2010, 99.)

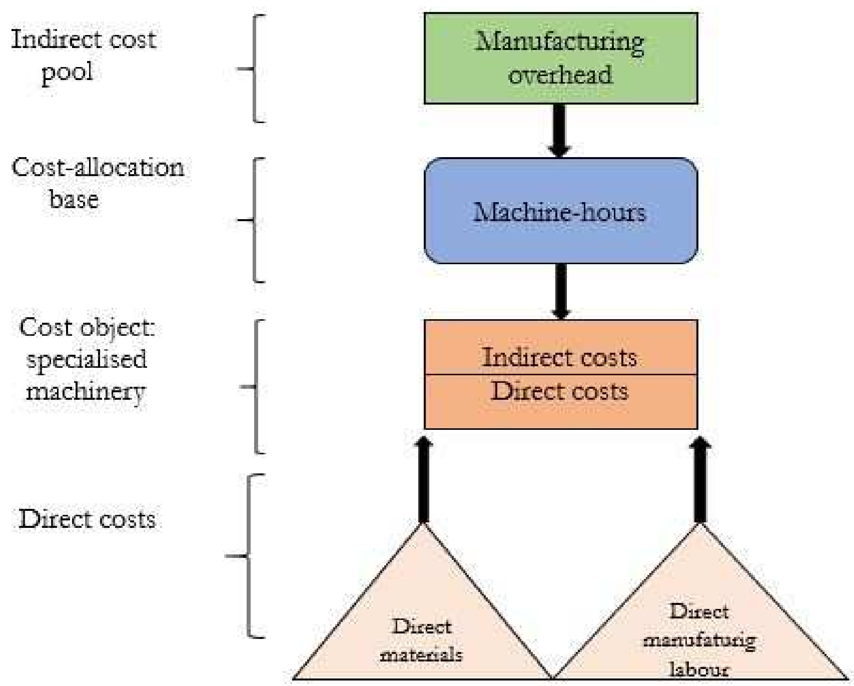

Figure 5. Job-costing overview for manufacturing company (Bhimani et al. 2012, 68)

Job costing can be done by following six steps:

Step 1: Define the job for the cost object.

Step 2: Define direct costs for the job.

Step 3: Define indirect-cost pools related to the job.

Step 4: Select base of cost-allocation to be used in indirect cost pool.

Step 5: Calculate indirect costs for the job.

Step 6: Assign the costs by adding direct and indirect costs to the cost object.

(Bhimani et al. 2012, 67.)

3.4 Job costing for Witrafi oy

Currently Witrafi has four types of products and services. These are system device, new device (unit cost per device × unit sales), device usage fee and service usage fee. Here overhead includes pension fees, electricity, rent etcetera and all the numbers are given by the management. System device is a user device which is placed in the dashboard of a car. Through the help of the device a car can find its position in parking areas. New device cost is the unit cost per device time's volume. Device usage fee and service usage fee costs are the amount of money that costs to operate the device and the system.

Table 2. System device costs

Unit cost overall (including device)	500 euro
Labor cost (rate 25 euros/hour ×10 hours)	250 euro
Advertising cost	10 euro
Warranty	90 euro
Manufacturing overhead	150 euro
Total system device costs	1000 euro

Table 3. New device costs (unit cost per device × unit sales)

Device costs	6 euro
Advertising costs	1.5 euro
Overhead	1.5 euro
Total new device costs	9 euro

Table 4. Device usage fee costs

Bill	80 cents
Data and server fees	20 cents
Total device usage fee costs	1 euro

Table 5. Usage fee (service) costs

Bill	60 cents
Data and server fees	30 cents
Service charge	60 cents
Total usage fee costs	1.5 euro

4 Implementing the tool

The budgeting tool is designed only for the internal management of the commissioning company. This master budget includes revenue budget, operating expenses budget, cash collection budget, cash payments budget, combined cash budget, cost of goods sold budget and budgeted income statement. Through the tool, management is able to prepare budgets effectively. This tool can be used for several times. The key of this budgeting tool is the revenue budget. In this Excel tool management is able to input different numbers of unit sales and selling price in every quarter in the revenue budget to compare various scenario.

The budgeting tool is based on quarterly and it is designed for two years. These are 2015 and 2016. By using this tool management can estimate revenues, operating expenses, cash budget, cost of goods sold budget, budgeted income statement. Here, all the cells and formulas are connected to each other. Therefore any change in one cell will affect the result of other relevant cells.

4.1 Revenue budget

Revenue budget shows the quantities of each product and the price that the company plans to sell. This budget predicts the total revenue from where cash will be generated. Revenue budget provides basic data for constructing other budgets like operating expenses budget, cost of goods sold budget, cash budget etcetera. Therefore, revenue budget is the foundation of all other budgets and if the revenue budget is not accurate than other budgets will be unreliable.

Witrafi Oy Revenue Budget For the year												
		2015						2016				
		Q1	Q2	Q3	Q4	Annually		Q1	Q2	Q3	Q4	Annually
Unit sales (system)												
Unit selling price €												
Sytem sales €												
Total sales revenue €												

Figure 6. Structure of revenue budget

In the Excel sheet user can input the expected number of unit sales and unit selling price then the system will automatically calculate the total sales revenue.
Number of unit sales × Unit selling price = Total sales revenue.

Witrafi Oy
Revenue Budget
For the year

	2015					2016				
	Q1	Q2	Q3	Q4	Annually	Q1	Q2	Q3	Q4	Annually
Unit sales (system)	-	-	1	-	1	1	-	1	-	2
Unit selling price €	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000
Sytem sales €	-	-	2,500,000	-	2,500,000	2,500,000	-	2,500,000	-	5,000,000

Figure 7. Revenue budget of Witrafi

For example, Figure 7 in Q3, 2015 Witrafi expects to sell 1 unit of system and the unit selling price is 2,500,000 €. Therefore, the estimated sales revenue in Q3, 2015 from System sale will be 1× 2,500,000 € = 2,500,000 €.

Attachment 1 represents the total revenue budget for the year 2015 and 2016. This revenue budget based on quarterly and it includes all the areas where the company can generate its revenue for example device sales, usage fee sales, consulting sales, maintenance sales and extra ordinary income. At the end all revenue need to add to get the total sales revenue. For instance, **Figure 8** in Q3, 2015 Witrafi expects its total revenue will be 2,952,500 €.

Witrafi Oy
Revenue Budget
For the year

	2015					2016				
	Q1	Q2	Q3	Q4	Annually	Q1	Q2	Q3	Q4	Annually
Sytem sales €	-	-	2,500,000	-	2,500,000	2,500,000	-	2,500,000	-	5,000,000
Unit sales (device)	-	-	11,000	17,000	28,000	50,000	60,000	60,000	100,000	270,000
Unit selling price (device)€	10	10	10	10		10	10	10	10	
Device sales €	-	-	110,000	170,000	280,000	500,000	600,000	600,000	1,000,000	2,700,000
Cumulative number of device	-	-	11,000	28,000	28,000	78,000	138,000	198,000	298,000	298,000
Device quarterly usage sales	-	-	66,000	168,000	234,000	468,000	828,000	1,188,000	1,788,000	4,272,000
Total device revenues €	-	-	176,000	338,000	514,000	968,000	1,428,000	1,788,000	2,788,000	6,972,000
Usage fee sales €	40,500	90,000	211,500	562,500	904,500	720,000	900,000	1,080,000	1,350,000	4,050,000
Consulting sales €	-	15,000	15,000	17,000	47,000	30,000	100,000	150,000	200,000	480,000
Maintenance sales €	-	-	10,000	15,000	25,000	30,000	50,000	75,000	100,000	255,000
Extra ordinary income €	3,000	20,000	40,000	65,000	128,000	70,000	80,000	100,000	100,000	350,000
Total sales revenue €	**43,500**	**125,000**	**2,952,500**	**997,500**	**4,118,500**	**4,318,000**	**2,558,000**	**5,693,000**	**4,538,000**	**17,107,000**

Figure 8. Revenue budget of Witrafi

The bottom part of the revenue budget **(Attachment 1)** shows type of sales. Witrafi gives credit only for the system sale. Credit sales are paid in cash every 3 months. First amount, 1/3 of the system sale will be paid in current quarter and the rest 2/3 of system sale will be paid next two quarters. Total contract length is 6 months. For example, in Q3, 2015 Witrafi total sales revenue will be 2,952,500 € where cash sales will be 1,285,833 € (including 1/3 of system sale) and credit sale will be 1,666,667 € (including 2/3 of system sale).

Witrafi Oy
Revenue Budget
For the year

	2015					2016				
	Q1	Q2	Q3	Q4	Annually	Q1	Q2	Q3	Q4	Annually
Type of Sale										
Cash sale (1/3 of system sale)	43,500	125,000	1,285,833	997,500	2,451,833	2,651,333	2,558,000	4,026,333	4,538,000	13,773,667
Credit sale (2/3 of system sale)	-	-	1,666,667	-	1,666,667	1,666,667	-	1,666,667	-	3,333,333

Figure 9. Types of sale in revenue budget of Witrafi

4.2 Operating expense budget

Operating expense budget includes all the costs related to value chain. However, this budget does not include production costs. All research and development, salaries, marketing, distribution, customer services etcetera are the parts of operating expenses budget. Among these some are variable cost and some are fixed costs. The nature of variable and fixed costs are determines by the management. Through operating expenses budget management gets overview of the expenditure for a particular period.
Total variable cost + Total fixed cost = Total operating expenses

Witrafi Oy
Operating Expense Budget
For the year

	2015					2016				
	Q1	Q2	Q3	Q4	Annually	Q1	Q2	Q3	Q4	Annually
Total variable cost										
Total fixed cost										
Total operating expenses										

Figure 10. Structure of operating expense budget

For instance, **Attachment 2** shows total operating costs of Witrafi for 2015 and 2016. In Q3, 2015 Witrafi's total costs are 628,950 € which includes system cost, new device cost (unit cost per device × unit sales) and shipping cost. By adding other variable cost like total device quarterly usage fee costs, total usage fee cost, consulting sales costs, salaries, maintenance, travel, parts and extra ordinary costs Witrafi's total variable costs are 808,700 € in Q3, 2015. Witrafi's total fixed co2sts for the same period is 62,000 €. By accumulation both total variable cost and total fixed cost, Witrafi's total operating expenses for Q3, 2015 will be 870,700 €.

4.3 Cash collection budget

The main objective of cash collection budget is to ensure that the company has sufficient money to meet its operational activities. Cash collection budget is a subject of timing that means the time period for a company to receive its cash from sales.

Witrafi Oy
Cash Collection Budget
For the year

	2015					2016				
	Q1	Q2	Q3	Q4	Annually	Q1	Q2	Q3	Q4	Annually
Cash sales (from revenue budget)										
Collection on Credit Sales:										
1/3 of credit sale (System sale made last quarter)										
1/3 of credit sale (System sale made last two quarters ago)										
Total cash collection										

Figure 11. Structure of cash collection budget

Attachment 3 presents cash collection budget for Witrafi and it is based on quarterly. Witrafi mainly sales on cash basis. However, only in system sales Witrafi provides credit option. From the **Figure 12** it is seen in Q3, 2015 Witrafi's cash sales will be 1,285,833 € (from sales revenue). This amount of revenue also includes 1/3 of system sales and the rest 2/3 of the system sales will be collected on next two quarters.

Witrafi Oy
Cash Collection Budget
For the year

	2015					2016				
	Q1	Q2	Q3	Q4	Annually	Q1	Q2	Q3	Q4	Annually
Cash sales (from revenue budget)	43,500	125,000	1,285,833	997,500	2,451,833	2,651,333	2,558,000	4,026,333	4,538,000	13,773,667
Collection on Credit Sales:										
1/3 of credit sale (System sale made last quarter)	-	-	-	833,333	833,333	-	833,333	-	833,333	1,666,667
1/3 of credit sale (System sale made last two quarters ago	-	-	-	-	-	833,333	-	833,333	-	1,666,667
Total cash collection	43,500	125,000	1,285,833	1,830,833	3,285,167	3,484,667	3,391,333	4,859,667	5,371,333	17,107,000

Figure 12. Cash collection budget of Witrafi

4.4 Cash payments budget

Cash payment budget is based on operating expense budget. It is also subject about timing. That means the time period when the company will pay for its expenses.

Witrafi Oy Cash Payments Budget For the year										
	2015					2016				
	Q1	Q2	Q3	Q4	Annually	Q1	Q2	Q3	Q4	Annually
Cash payments (from operating expense budget)										

Figure 13. Structure of cash payment budget

The cash payment budget is based on quarterly therefore, Witrafi has "net 90 days or 1 quarter" payment terms for everything. From **Figure 14** it is seen that in Q1, 2015 Witrafi do not need to pay any money but in Q2, 2015 Witrafi needs to pay 29,750 € (from operating expense budget).

Witrafi Oy Cash Payments Budget For the year										
	2015					2016				
	Q1	Q2	Q3	Q4	Annually	Q1	Q2	Q3	Q4	Annually
Cash payments (from operating expense budget)	-	29,750	72,000	870,700	972,450	598,600	1,697,500	1,609,000	2,477,000	6,382,100

Figure 14. Cash payments budget of Witrafi

4.5 Combined cash budget

Combined cash budget provides cash collection and cash payment simultaneously and projects company ending cash position. Budgeted cash collections are added to the beginning cash balance to get total available cash balance. After that budgeted cash payments are subtracted to define ending cash balance.

Beginning balance of cash + Cash collection – Cash payments = Ending cash balance before financing.

Based on ending cash balance, company decides to borrow money or pay the debt or invest.

Witrafi Oy Combined Cash Budget For the year											
	2015						2016				
	Q1	Q2	Q3	Q4	Annually		Q1	Q2	Q3	Q4	Annually
Beginning balance of cash											
Cash collection											
Total cash available											
Less: Cash payments											
Ending cash balance before financing											
Financing:											
Borrowings											
Repayments											
Interest payments											
End cash balance											

Figure 15. Structure of combined cash budget

From **Attachment 5** it is seen that in Q3, 2015 Witrafi's beginning cash balance will be 138,750 € (ending cash balance of Q2, 2015) and the company expect its cash collection will be 1,285,833 €. Therefore, total cash balance will be 1,424,583 € in Q3, 2015. By deducting cash payments (72,000 €) for the same period from total cash balance Witrafi's ending cash balance before financing will be 1,352,583 €. As since Witrafi has positive cash balance for the Q3, 2015 therefore, company does not need any external financing.

Witrafi Oy Combined Cash Budget For the year											
	2015						2016				
	Q1	Q2	Q3	Q4	Annually		Q1	Q2	Q3	Q4	Annually
Beginning balance of cash	-	43,500	138,750	1,352,583	-		2,312,717	5,198,783	6,892,617	10,143,283	2,312,717
Cash collection	43,500	125,000	1,285,833	1,830,833	3,285,167		3,484,667	3,391,333	4,859,667	5,371,333	17,107,000
Total cash available	43,500	168,500	1,424,583	3,183,417	3,285,167		5,797,383	8,590,117	11,752,283	15,514,617	19,419,717
Less: Cash payments	-	29,750	72,000	870,700	972,450		598,600	1,697,500	1,609,000	2,477,000	4,773,100
Ending cash balance before financing	43,500	138,750	1,352,583	2,312,717	2,312,717		5,198,783	6,892,617	10,143,283	13,037,617	14,646,617
Financing:											
Borrowings	-	-	-	-	-		-	-	-	-	-
Repayments											
Interest payments											
End cash balance	43,500	138,750	1,352,583	2,312,717	2,312,717		5,198,783	6,892,617	10,143,283	13,037,617	35,272,300

Figure 16. Combined cash budget of Witrafi

4.6 Cost of goods sold, inventory and purchases budget

Merchandising companies mainly purchase ready-made products therefore, these companies do not need production, direct materials, direct labor or manufacturing budgets. Instead of these budgets merchandising company prepare cost of goods sold, inventory and purchase budget.

This budget follows the same principle of manufacturer's production budget. That is:

Cost of goods sold
Plus: Desired ending inventory
= Total inventory needed
Less: Beginning inventory
Purchases of inventory (Braun et al. 2010, 504)

Witrafi Oy Cost of Goods Sold, Inventory and Purchases Budget For the year										
	2015					2016				
	Q1	Q2	Q3	Q4	Annually	Q1	Q2	Q3	Q4	Annually
Sales revenue (from Revenue Budget)										
Cost of goods sold										
Plus: Desired ending inventory										
Total inventory required										
Less: Beginning inventory										
Purchase of inventory										

Figure 17. Structure of cost of goods sold, inventory and purchases budget

For example **Figure 18** shows in Q3, 2015 cost of goods sold for Witrafi will be 1,267,700 €. Which is a combined cost of system cost, total new device cost (unit cost per device times volume of unit sales), total device usage fee costs and total usage fee costs. Management of Witrafi wants to keep ending inventory 10% of the next quarter's cost of goods sold, which is equivalent to 52,590 €. Thus total inventory required 1,320,290 €. By deducting beginning inventory 126,770 € (desired ending inventory of Q2, 2015) from total inventory, management gets the amount of inventory what the company needs to purchase. In this case it is 1,193,520 €.

Witrafi Oy Cost of Goods Sold, Inventory and Purchases Budget For the year										
	2015					2016				
	Q1	Q2	Q3	Q4	Annually	Q1	Q2	Q3	Q4	Annually
Sales revenue (from Revenue Budget)	43,500	125,000	2,952,500	997,500	4,118,500	4,318,000	2,558,000	5,693,000	4,538,000	17,107,000
Cost of goods sold	20,250	45,000	1,267,700	525,900	1,858,850	2,091,500	1,431,000	2,726,000	2,514,000	8,762,500
Plus: Desired ending inventory(10% of next quarter's COGS)	4,500	126,770	52,590	209,150	393,010	143,100	272,600	251,400	200,000	867,100
Total inventory required	24,750	171,770	1,320,290	735,050	2,251,860	2,234,600	1,703,600	2,977,400	2,714,000	9,629,600
Less: Beginning inventory	-	4,500	126,770	52,590	183,860	209,150	143,100	272,600	251,400	876,250
Purchase of inventory	24,750	167,270	1,193,520	682,460	2,068,000	2,025,450	1,560,500	2,704,800	2,462,600	8,753,350

Figure 18. Cost of goods sold, inventory and purchases budget of Witrafi

4.7 Budgeted income statement

Budgeted income statement projects company's net income based on the estimated revenues and expenses. It is created based on the result of previous budgets. These are revenue budget, cost of goods sold budget and operating expenses budget.

Revenue – Cost of goods sold = Gross profit – Operating expenses = Operating income – Interest expense – Income tax expense = Net income.

Witrafi Oy Budgeted Income Statement For the year										
	2015					2016				
	Q1	Q2	Q3	Q4	Annually	Q1	Q2	Q3	Q4	Annually
Revenue										
Less: Cost of goods sold										
Gross profit										
Less: Operating expenses										
Operating income										
Less: Inerest expense										
Less: Income tax expense										
Net income										

Figure 19. Structure of budgeted income statement

For instance, in Q3, 2015 Witrafi's projected revenue will be 2,952,500 € (from revenue budget). By deducting cost of goods sold 1,267,700 € (from cost of goods sold8 budget), Witrafi's gross profit will be 1,684,800 €. From this amount subtracting operating expense 870,700 € (from operating expenses budget) in Q3, 2015 Witrafi's total operating income will be 814,100 €.

Witrafi Oy
Budgeted Income Statement
For the year

	2015					2016				
	Q1	Q2	Q3	Q4	Annually	Q1	Q2	Q3	Q4	Annually
Revenue	43,500	125,000	2,952,500	997,500	4,118,500	4,318,000	2,558,000	5,693,000	4,538,000	17,107,000
Less: Cost of goods sold	20,250	45,000	1,267,700	525,900	1,858,850	2,091,500	1,431,000	2,726,000	2,514,000	8,762,500
Gross profit	23,250	80,000	1,684,800	471,600	2,259,650	2,226,500	1,127,000	2,967,000	2,024,000	8,344,500
Less: Operating expenses	29,750	72,000	870,700	598,600	1,571,050	1,697,500	1,609,000	2,477,000	2,825,000	8,608,500
Operating income	(6,500)	8,000	814,100	(127,000)	688,600	529,000	(482,000)	490,000	(801,000)	(264,000)
Less: Inerest expense										
Less: Income tax expense										
Net income										

Figure 20. Budgeted income statement of Witrafi

5 Sensitivity analysis

Master budget is the planned model for a company. Managers use their best estimation for creating master budget. Very often some key assumption like sales or costs of goods sold can be changed into different numbers than the original prediction. In this case managers use sensitivity analysis to understand the situation. Sensitivity analysis is "the systematic varying of decision input assumption to examine the effect on a decision" (Horngren et al. 2014, 311).
Sensitivity analysis use *what if* technique to ask *what the result will be if* the predicted amount will not achieved or *if* an assumption will change.

Figure 21. Sensitivity analysis (Braun et al. 2010, 496)

Figure 22 shows the revised budget for the year 2015 and 2016 based on three alternatives. These are -30%, yearly actual bud8get and +30%. This short analysis only assessing the effects of varying revenue of the budget input. For example, in 2015 the actual annual budgeted revenue will be 4118500 €. If the revenue decreased by -30% and increased by +30 then revenue will be 2882950 € and 5354050 € respectively in 2015. These will also influence cost of goods sold, gross profit, operating expenses eventually which will effect operating income. Based on these information, if the revenue reduced -30% then the operating income will be 482020 € and if the revenue increased +30% then the operating income will be 895180 €. This scenario is also true for the year 2016.

Witrafi Oy
Sensitivity Analysis
For the year

	2015			2016		
	-30%	Annually Budgeted	30%	-30%	Annually Budgeted	30%
Revenue	2,882,950	4,118,500	5,354,050	11,974,900	17,107,000	22,239,100
Less: Cost of goods sold	1,301,195	1,858,850	2,416,505	6,133,750	8,762,500	11,391,250
Gross profit	1,581,755	2,259,650	2,937,545	5,841,150	8,344,500	10,847,850
Less: Operating expenses	1,099,735	1,571,050	2,042,365	6,025,950	8,608,500	11,191,050
Operating income	482,020	688,600	895,180	(184,800)	(264,000)	(343,200)

Figure 22. Sensitivity analysis of Witrafi

6 Evaluating the project

This chapter summarize the outcomes of the thesis. These are main findings, limitations, further development and finally the author will conclude the thesis with personal learning.

6.1 Main findings

The project objective and all the project tasks have been accomplished. This project oriented thesis provides to the company:

- A ready-made budgeting tool for the year 2015 and 2016.
- Sensitivity analysis.

6.2 Limitations

Witrafi is a start-up company. Therefore, the insufficiency of historical data can affect the forecasting method. Eventually, which will lead to change operating expense budget, combined cash budget, cost of goods sold budget and finally budgeted income statement.

In addition, selling price, product cost, operation cost can be differ time to time. This may influence the application and profitability analysis.

Another limitations of this thesis is the evaluating period. To evaluate the usefulness of a budgeting tool it needs to pass the evaluation stage. In this case, the evaluation can only be done when the case company starts its operations.

6.3 Further development

Although the goal of the thesis is fulfilled however, there are scopes for further development. To take an example, this budgeting tool based on quarterly for the year 2015 and 2016. If the management wish they can use this tool on a monthly basis after some modifications.

Moreover, this budgeting tool can be used as a foundation for other budgets. For instance at present this tool offers revenue budgets, operating expense budget, cash collection budget, cash payment budget, combined cash budget, cost of goods sold budget and budgeted income statement. Management can also implement capital expenditure budget and budgeted balance sheet based on the current tool.

6.4 Personal learning

This thesis is conducted from August 2014 to November 2014. The majority of the time is dedicated to designing the budgeting tool to fulfill the case company's needs. At the starting point, the author face a fair amount of stress to forming and structuring the thesis. Author admits that these Thesis Planning and Presentation Workshops help him a lot in this regard.

Thesis writing is a challenging task. In order to accomplish the task the author needs to learn different budgeting theories, formulas and calculations which are relevant to the project. On top of that time management is a big issue to control the project. Throughout the process the author also learns how to keep patience and how to control stress.

In conclusion, author admits that the knowledge and skills what he learns to develop the budgeting tool for the case company is a valuable experience for his future career.

References

American Heritage Dictionary 2014. URL: https://ahdictionary.com/word/search.html?q=start-up. Accessed: 09 November 2014.

Bhimani, A., Horngren, C., T., Datar, S., M., & Rajan, M., V. 2012. Management and cost accounting. 5th ed. Pearson Education Limited. London.

Braun, K., W., Tietz, W., M. & Harrison, W., T., Jr. 2010. Managerial accounting. 2nd ed. Pearson Education, Inc. New Jersy.

Hilton, R., W. 2008. Managerial accounting. Creating value in a dynamic business environment. 7th ed. McGraw-Hill. New York.

Horngren, C., T., Datar, S., M. & Rajan, M. 2012. Cost Accounting. A managerial emphasis.14th ed. Pearson Education Limited. Harlow.

Horngren, C., T. Sundem, G., L. Burgstahler, D. & Schatzberg, J. 2014. Introduction to management accounting. 16th ed. Pearson Education Limited. Harlow.

McWatters, C., S., Zimmeman, J., L. & Morse, D., C. 2008. Management accounting analysis and interpretation. Pearson Education Limited. Harlow.

Merriam-Webster 2014. URL: http://www.merriam-webster.com/dictionary/tax. Accessed: 09 November 2014.

Needles, B., E., Jr. & Crosson, S., V. 2002. Managerial accounting. Houghton Mifflin Company. Boston.

Robehmed, N. 2013. What Is A Startup? URL: http://www.forbes.com/sites/natalierobehmed/2013/12/16/what-is-a-startup/. Accessed: 09 November 2014.

Ross, L. 2014. Budgeting. Topic Gateway Series No. 27. URL: http://www.cimaglobal.com/Documents/ImportedDocuments/cig_tg_budgeting_mar08.pdf. Accessed: 09 November 2014.

THE FREE DICTIONARY 2014. URL: http://financial-dictionary.thefreedictionary.com/start+up+company. Accessed: 09 November 2014.

Witrafi Oy 2014. URL: http://www.witrafi.com/. Accessed: 09 November 2014.

Attachments

Attachment 1. Revenue Budget

Witrafi Oy
Revenue Budget
For the year

	2015					2016				
	Q1	Q2	Q3	Q4	Annually	Q1	Q2	Q3	Q4	Annually
Unit sales (system)	-	-	1	-	1	1	-	1	-	2
Unit selling price €	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000
System sales €	-	-	2,500,000	-	2,500,000	2,500,000	-	2,500,000	-	5,000,000
Unit sales (device)	-	-	11,000	17,000	28,000	50,000	60,000	60,000	100,000	270,000
Unit selling price (device)€	10	10	10	10		10	10	10	10	
Device sales €	-	-	110,000	170,000	280,000	500,000	600,000	600,000	1,000,000	2,700,000
Cumulative number of device	-	-	11,000	28,000	28,000	78,000	138,000	198,000	298,000	298,000
Device quarterly usage fee €	6	6	6	6		6	6	6	6	
Device quarterly usage sales	-	-	66,000	168,000	234,000	468,000	828,000	1,188,000	1,788,000	4,272,000
Total device revenues €	-	-	176,000	338,000	514,000	968,000	1,428,000	1,788,000	2,788,000	6,972,000
Quarterly usage fee units	4,500	10,000	23,500	62,500	100,500	80,000	100,000	120,000	150,000	450,000
Selling price €	9	9	9	9		9	9	9	9	
Usage fee sales €	40,500	90,000	211,500	562,500	904,500	720,000	900,000	1,080,000	1,350,000	4,050,000
Consulting sales €	-	15,000	15,000	17,000	47,000	30,000	100,000	150,000	200,000	480,000
Maintenance sales €	-	-	10,000	15,000	25,000	30,000	50,000	75,000	100,000	255,000
Extra ordinary income €	3,000	20,000	40,000	65,000	128,000	70,000	80,000	100,000	100,000	350,000
Total sales revenue €	**43,500**	**125,000**	**2,952,500**	**997,500**	**4,118,500**	**4,318,000**	**2,558,000**	**5,693,000**	**4,538,000**	**17,107,000**
Type of Sale										
Cash sale (1/3 of system sale)	43,500	125,000	1,285,833	997,500	2,451,833	2,651,333	2,558,000	4,026,333	4,538,000	13,773,667
Credit sale (2/3 of system sale)	-	-	1,666,667	-	1,666,667	1,666,667	-	1,666,667	-	3,333,333

*** Credit sales only from selling the system.
Credit sales paid in cash every 3 months (1/3 of selling price, total contract length 6 months).
First amount is 1/3 of selling price.

Attachment 2. Operating expense budget

Witrafi Oy Operating Expense Budget For the year					
	2015				
	Q1	Q2	Q3	Q4	Yearly
Variable cost					
Unit cost **€**	-	-	1,000	-	1,000
Unit amount	-	-	500	-	500
System cost **€**	-	-	500,000	-	500,000
Unit cost per device **€**	9	9	9	9	
New device cost **€**(unit cost per device×unit sales)	-	-	99,000	153,000	252,000
Shipping cost **€**	-	-	29,950	7,650	37,600
Total cost	-	-	628,950	160,650	789,600
Device quarterly per usage fee cost €	3	3	3	3	
Device quarterly usage fee costs	-	-	33,000	84,000	117,000
Total device quarterly usage fee costs	-	-	33,000	84,000	117,000
Usage fee cost quarterly per device **€**	5	5	5	5	
Usage fee costs quarterly	20,250	45,000	105,750	281,250	452,250
Total usage fee cost quarterly	20,250	45,000	105,750	281,250	452,250
Consulting sales cost	-	4,500	4,500	5,100	14,100
Salaries (consulting)	-	3,825	3,825	4,335	11,985
Travel (consulting)	-	675	675	765	2,115
Maintenance	-	-	6,000	9,000	15,000
Salaries (administration)	-	-	3,600	5,400	9,000
Parts	-	-	1,200	1,800	3,000
Travel (administration)	-	-	1,200	1,800	3,000
Extra ordinary cost	1,500	10,000	20,000	32,500	64,000
Total variable cost	**21,750**	**64,000**	**808,700**	**586,600**	**1,481,050**
Fixed cost					
ICT, phone, internet	4,000	4,000	6,000	6,000	20,000
Rent	4,000	4,000	4,000	4,000	16,000
Storage	-	-	1,000	1,000	2,000
Car	-	-	50,000	-	50,000
Car use	-	-	1,000	1,000	2,000
Total fixed cost	**8,000**	**8,000**	**62,000**	**12,000**	**82,000**
Total operating expenses	**29,750**	**72,000**	**870,700**	**598,600**	**1,571,050**

Attachment 2. (Continue) Operating expense budget

Witrafi Oy Operating Expense Budget For the year					
	2016				
	Q1	Q2	Q3	Q4	Yearly
Variable cost					
Unit cost **€**	1,000	-	1,000	-	2,000
Unit amount	500	-	500	-	1,000
System cost **€**	500,000	-	500,000	-	1,000,000
Unit cost per device **€**	9	9	9	9	
New device cost **€**(unit cost per device×unit sales)	450,000	540,000	540,000	900,000	2,430,000
Shipping cost **€**	47,500	27,000	52,000	45,000	171,500
Total cost	997,500	567,000	1,092,000	945,000	3,601,500
Device quarterly per usage fee cost €	3	3	3	3	
Device quarterly usage fee costs	234,000	414,000	594,000	894,000	2,136,000
Total device quarterly usage fee costs	234,000	414,000	594,000	894,000	2,136,000
Usage fee cost quarterly per device **€**	5	5	5	5	
Usage fee costs quarterly	360,000	450,000	540,000	675,000	2,025,000
Total usage fee cost quarterly	360,000	450,000	540,000	675,000	2,025,000
Consulting sales cost	9,000	30,000	45,000	60,000	144,000
Salaries (consulting)	7,650	25,500	38,250	51,000	122,400
Travel (consulting)	1,350	4,500	6,750	9,000	21,600
Maintenance	18,000	30,000	45,000	60,000	153,000
Salaries (administration)	10,800	18,000	27,000	36,000	91,800
Parts	3,600	6,000	9,000	12,000	30,600
Travel (administration)	3,600	6,000	9,000	12,000	30,600
Extra ordinary cost	35,000	40,000	50,000	50,000	175,000
Total variable cost	**1,680,500**	**1,591,000**	**2,456,000**	**2,804,000**	**8,531,500**
Fixed cost					
ICT, phone, internet	8,000	8,000	10,000	10,000	36,000
Rent	6,000	6,000	6,000	6,000	24,000
Storage	2,000	2,000	3,000	3,000	10,000
Car	-	-	-	-	-
Car use	1,000	2,000	2,000	2,000	7,000
Total fixed cost	**17,000**	**18,000**	**21,000**	**21,000**	**77,000**
Total operating expenses	**1,697,500**	**1,609,000**	**2,477,000**	**2,825,000**	**8,608,500**

Attachment 3. Cash collection budget

Witrafi Oy Cash Collection Budget For the year										
	2015					2016				
	Q1	Q2	Q3	Q4	Annually	Q1	Q2	Q3	Q4	Annually
Cash sales (from revenue budget)	43,500	125,000	1,285,833	997,500	2,451,833	2,651,333	2,558,000	4,026,333	4,538,000	13,773,667
Collection on Credit Sales:										
1/3 of credit sale (System sale made last quarter)	-	-	-	833,333	833,333	-	833,333	-	833,333	1,666,667
1/3 of credit sale (System sale made last two quarters ago	-	-	-	-	-	833,333	-	833,333	-	1,666,667
Total cash collection	43,500	125,000	1,285,833	1,830,833	3,285,167	3,484,667	3,391,333	4,859,667	5,371,333	17,107,000

Attachment 4. Cash payments budget

Witrafi Oy Cash Payments Budget For the year										
	2015					2016				
	Q1	Q2	Q3	Q4	Annually	Q1	Q2	Q3	Q4	Annually
Cash payments (from operating expense budget)	-	29,750	72,000	870,700	972,450	598,600	1,697,500	1,609,000	2,477,000	6,382,100

Attachment 5. Combined cash collection budget

Witrafi Oy Combined Cash Budget For the year										
	2015					2016				
	Q1	Q2	Q3	Q4	Annually	Q1	Q2	Q3	Q4	Annually
Beginning balance of cash	-	43,500	138,750	1,352,583	-	2,312,717	5,198,783	6,892,617	10,143,283	2,312,717
Cash collection	43,500	125,000	1,285,833	1,830,833	3,285,167	3,484,667	3,391,333	4,859,667	5,371,333	17,107,000
Total cash available	43,500	168,500	1,424,583	3,183,417	3,285,167	5,797,383	8,590,117	11,752,283	15,514,617	19,419,717
Less: Cash payments	-	29,750	72,000	870,700	972,450	598,600	1,697,500	1,609,000	2,477,000	4,773,100
Ending cash balance before financing	43,500	138,750	1,352,583	2,312,717	2,312,717	5,198,783	6,892,617	10,143,283	13,037,617	14,646,617
Financing:										
Borrowings	-	-	-	-	-	-	-	-	-	-
Repayments										
Interest payments										

Attachment 6. Cost of goods sold, inventory and purchase budget

Witrafi Oy
Cost of Goods Sold, Inventory and Purchases Budget
For the year

	2015					2016				
	Q1	Q2	Q3	Q4	Annually	Q1	Q2	Q3	Q4	Annually
Sales revenue (from Revenue Budget)	43,500	125,000	2,952,500	997,500	4,118,500	4,318,000	2,558,000	5,693,000	4,538,000	17,107,000
Cost of goods sold	20,250	45,000	1,267,700	525,900	1,858,850	2,091,500	1,431,000	2,726,000	2,514,000	8,762,500
Plus: Desired ending inventory(10% of next quarter's COGS)	4,500	126,770	52,590	209,150	393,010	143,100	272,600	251,400	200,000	867,100
Total inventory required	24,750	171,770	1,320,290	735,050	2,251,860	2,234,600	1,703,600	2,977,400	2,714,000	9,629,600
Less: Beginning inventory	-	4,500	126,770	52,590	183,860	209,150	143,100	272,600	251,400	876,250
Purchase of inventory	24,750	167,270	1,193,520	682,460	2,068,000	2,025,450	1,560,500	2,704,800	2,462,600	8,753,350

*** COGS in Q1, 2017 will be 2,000,000 (given by the management).

Attachment 7. Budgeted income statement

Witrafi Oy Budgeted Income Statement For the year										
	2015					2016				
	Q1	Q2	Q3	Q4	Annually	Q1	Q2	Q3	Q4	Annually
Revenue	43,500	125,000	2,952,500	997,500	4,118,500	4,318,000	2,558,000	5,693,000	4,538,000	17,107,000
Less: Cost of goods sold	20,250	45,000	1,267,700	525,900	1,858,850	2,091,500	1,431,000	2,726,000	2,514,000	8,762,500
Gross profit	23,250	80,000	1,684,800	471,600	2,259,650	2,226,500	1,127,000	2,967,000	2,024,000	8,344,500
Less: Operating expenses	29,750	72,000	870,700	598,600	1,571,050	1,697,500	1,609,000	2,477,000	2,825,000	8,608,500
Operating income	(6,500)	8,000	814,100	(127,000)	688,600	529,000	(482,000)	490,000	(801,000)	(264,000)
Less: Interest expense										
Less: Income tax expense										
Net income										

Attachment 8. Sensitivity analysis

Witrafi Oy Sensitivity Analysis For the year						
	2015			2016		
	-30%	Annually Budgeted	30%	-30%	Annually Budgeted	30%
Revenue	2,882,950	4,118,500	5,354,050	11,974,900	17,107,000	22,239,100
Less: Cost of goods sold	1,301,195	1,858,850	2,416,505	6,133,750	8,762,500	11,391,250
Gross profit	1,581,755	2,259,650	2,937,545	5,841,150	8,344,500	10,847,850
Less: Operating expenses	1,099,735	1,571,050	2,042,365	6,025,950	8,608,500	11,191,050