Managerial Accounting Toolkit For a Limited Liability Sole Trader

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Abstract

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I have conducted this project-based thesis in cooperation with Silvia Nadal, a limited liability sole trader who provides services in Alcoi, Spain. The brand name behind her project is Empatia Socioeducativa.

The thesis aims to help reduce her time spent doing general accounting duties but also providing important financial information crucial for the company's growth, by creating a Managerial Accounting Toolkit. Consequently, the manager will be able to make more accurate decisions.

The tool will enable the manager to spend as little time as possible with accounting or billing duties but also it will show some key profitability ratios. This will help her understand better how the business is going and it will give her more time on providing better service to the customers.

The theoretical part in this project-based thesis will help understand the technical concepts and set the basis for the tool while the empirical part will focus on creating the Managerial Accounting Toolkit.

This toolkit is created on Microsoft Excel with Visual Basic for Applications (VBA), a programming language integrated on Microsoft Office Applications such as Excel itself.

The features of the tool are a client database, sales budget, expense budget, general financial budget, bill generator & database, profitability ratios for the company.

Keywords
Managerial Accounting, Sales Budgeting, Cost Accounting, Cash Flow Statements.

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1. Introduction & Commissioning Company

This is a project type of bachelor's thesis for the Degree Programme in International Business in the major specialization of Accounting at Haaga-Helia University of Applied Sciences.

Many small business owners do not have the necessary knowledge to use the different tools or formulas managerial accounting can provide to gather and analyze day-to-day data in order to run their businesses more efficiently. Their relation with accounting is limited to provide their tax/accounting agency with the necessary documentation to pay their taxes.

This chapter introduces the topic, the project objective of the thesis, the project scope, benefits & risks of the project, some key concepts to better understand the topic and a short introduction of the comissioning company.

1.1 Company Background

Empatia Socioeducativa is the name of the project founded by Silvia in 2015. She has her second residency in a small rural village in Spain named Gorga, where she stays on summers and other holidays. It was before 2015's summer when she identified a problem she could solve.

Every summer, kids would have holidays on June, July, and August but their parents would only have holidays on August. S. N. identified the parents' needs of their kids being taken care of while they were working, creating a leisure activity company, and starting its first summer school in Gorga, 2015. The first year, the Summer School welcomed around twenty kids and its great success during the first month resulted in the city Hall subsidizing the price for the parents and a direct grant for the entrepreneur.

During the next summers the company had an average of 3 Summer Schools around different villages with the highest being in 2018 with 8 Summer Schools and more than 15 people employed during those two months. But it was a seasonal business so in between summers the company had small activities enabling the company to sustain fixed expenses. They would organize activities in a couple high schools every two to three months.

It was during 2020 when a friend of her, and partner in older projects, offered to sell her a part of her business. The business itself is a swimming pool in Alcoi, city where the entrepreneur lives. This swimming pool is used to offer one specific service, aquatic stimulation for babies. After a careful study, and having worked on the swimming pool before, there was a deal and Silvia made the acquisition.

Now the business is diversified in 3 projects, the first one is Summer Schools during June and July, the second are sporadic leisure activities on high schools and the last one, the aquatic stimulation for babies.

The purchase of the last project is the reason why the manager suddenly needs help with their managerial accounting, financial planning, and budgeting duties. Her revenue has increased around 900% in months and her bills have increased from one or two monthly to more than 80.

1.1 Thesis objectives

This project-based thesis studies the different blocks of managerial accounting and research which types of data need to be gathered and which types of analysis need to be used to create a proper managerial accounting tool for a small service business owner.

Owners can plan their business using managerial accounting, this area is known as planning. By building a budget, owners can have an estimate of cash and inventory balances throughout the year (Freedman 2019).

Budgets can be used by owners to set goals, forecast, and compare their expected performance with actuals, this area is also known as controlling and it can involve performance or profitability reports as well as many other analyses.

Another important area in this project will be cost accounting, bill amounts need to be gathered and grouped by month, product, services, or expenses. According to Horngren, Datar and Rajan (2014, 25) accountants analyse the results and together with managers evaluate, say, how costs have changed relative to revenues from one period to next.

Small business owners can use this information and more to make decisions to keep their activity going.

The idea of this tool is to group and merge many different accounting theories into an Excel tool, automating processes and giving the owner a vision of their business' financial health.

1.2   Project Objective

The project objective of this thesis is to create a useful tool that helps Silvia simplifying daily managerial tasks. The tool would replace any simple accounting software on the market.

The project objective is the **creation of a Managerial Accounting toolkit.**

The project objective is divided into project tasks as follows:

PT1. Defining the tool's scope and capabilities with commissioning company needs.
PT2. Build the theory base for the managerial accounting tool.
PT3. Design the managerial accounting tool.
PT4. Submit a beta version for a test run to receive feedback.
PT5. Create final version of tool.

Table 1 below presents the project tasks, theoretical framework components, project management methods and outcomes for each project task.

Table 1. Project Tasks

Project Task	Knowledge Base	Project Management Methods	Outcomes (Chapter where reported)
1. Defining tool's scope and commissioning company needs.	Financial and Managerial Accounting.	Casual Meetings with the sole trader.	Theoretical Framework guidelines.
2. Building the theory base for the managerial accounting tool.	Financial and Managerial Accounting.	Qualitative Research.	Theoretical Framework.
3. Designing the managerial accounting tool.	Financial and Managerial Accounting, MS Excel Automation.	MS Excel, VBA.	Managerial Accounting Tool.

4. Submit a beta version & Receive Feedback	Financial and Managerial Accounting, MS Excel.	Constant communication with Commissioning Company.	Improvement Suggestions.
5. Adjusting the Final Version of the Tool.	Outcome of previous tasks.	Feedback analysis and MS Excel, VBA.	Managerial Accounting Tool Final Version.

1.3   Project Limitations & Scope

The features or scope of the tool is limited to the following:

A client database, sales budget, expense budget, financial budget, bill generator & database, profitability ratios.

The tool tries to automate every step of the process, but it has its limitations. Despite all information being merged inside the tool, the manager still must gather specific data from the tool such as sales, VAT data and deductible expenses (and more) and provide it to the government directly or through intermediaries such as external accounting managers, in short, to other stakeholders.

This tool's purpose is not to document and create financial reports for financial accounting purposes required by law. It is the manager's responsibility to summarise and report it to the public authorities.

The Tool's scope is further developed later when explaining project task 1.

1.4   Benefits

The tool can be of great use by small companies with no accounting & finance knowledge willing to improve their company situation but not willing to incur expensive monthly bills from financial advisors or external agencies. It can be easily modified to be used by different types of companies independently of their size or industry, minor changes need to be done to some settings to be fully reliable on international companies.

Many stakeholders of a company can be benefited from the tool. The manager can shorten their time spent gathering data for external stakeholders such as government or accounting managers. The accountant in charge of this company, external or internal, can gather, summarise, and report the financial information more easily with the features of this toolkit.

I am also benefited from this project-based thesis because it provides real-life experience on my specialization field. Learning & improving accounting & finance skills through the process but also other skills such as programming code with Virtual Basics for Applications.

1.5 Key Concepts

Managerial Accounting focuses on providing internal management with the information it needs to run the company efficiently and effectively. (Braun & Tietz 2014, 20.)

Sales Budget is the starting place for budgeting. Managers multiply the expected number of unit sales by the sales price to arrive at the expected total sales revenue. Sales budget is the basis for every other budget. If sales are not projected as accurately as possible, all other budgets will be off target. (Braun & Tietz 2014, 525.)
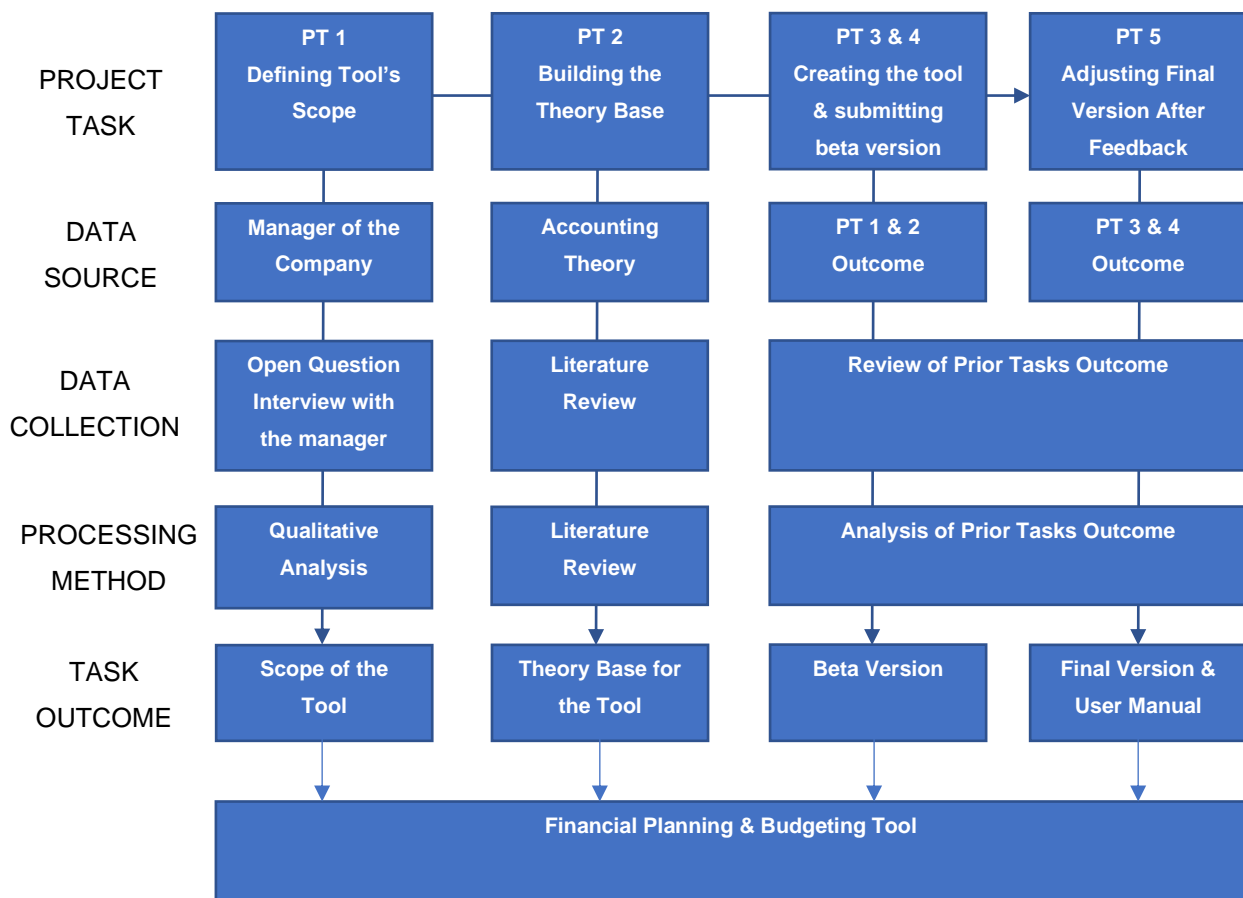
Cost Accounting is, according to The Chartered Institute of Management Accountants in England, the application of costing and Cost Accounting principles, methods and techniques to the science, art and practice of cost and the ascertainment of profitability. It includes the presentation of information derived there from for the purpose of management decision-making. (Rajasekaran & Lalitha 2010, 15.)

Cash Flow Statements show how the company generated and used cash during the year, enabling managers, investors, and creditors to predict whether the company can meet its cash obligations in the future. (Braun & Tietz 2014, 785.)

1.6 Project Management Methods

This subchapter explains the approach taken to deal with the different parts of the project.

Figure 1. Project Management Methods

	PT 1 Defining Tool's Scope	PT 2 Building the Theory Base	PT 3 & 4 Creating the tool & submitting beta version	PT 5 Adjusting Final Version After Feedback
PROJECT TASK	PT 1 Defining Tool's Scope	PT 2 Building the Theory Base	PT 3 & 4 Creating the tool & submitting beta version	PT 5 Adjusting Final Version After Feedback
DATA SOURCE	Manager of the Company	Accounting Theory	PT 1 & 2 Outcome	PT 3 & 4 Outcome
DATA COLLECTION	Open Question Interview with the manager	Literature Review	Review of Prior Tasks Outcome	
PROCESSING METHOD	Qualitative Analysis	Literature Review	Analysis of Prior Tasks Outcome	
TASK OUTCOME	Scope of the Tool	Theory Base for the Tool	Beta Version	Final Version & User Manual

Financial Planning & Budgeting Tool

As shown on the figure above, this thesis project has 5 parts divided in project tasks.

Project task 1, **defining tool's scope and company needs,** is carried out with an open question interview with the manager of the commissioning company. The purpose and objective are to find the real needs of the company and therefore use that information for building the theory base for the tool. The data source is the manager of the company, this data is later processed with a qualitative analysis to define the tool's scope.

With the outcome of task 1, task 2 can be started, **building the theory base for the tool** is done using the different needs or requirements the company has. In this stage is where the theoretical framework is created. The main source of information are accounting books, data is collected by reviewing the literature and extracting the main points. The outcome of this task is a needed theoretical base for the next tasks or stages of the project.

Having performed tasks 1 & 2, the next stage is to **create the tool & submitting a beta version to the manager.** The data source of this tasks is mainly the outcome of prior

tasks. With the tool's scope established and a proper theoretical framework, the tool is created on Microsoft Excel with Visual Basic for Applications (VBA), a programming language integrated on Microsoft Office Applications such as Excel itself.

After delivering the beta version to the manager and waiting for proper feedback, the final part of the project, **adjusting a final version**, consists in analysing and editing tasks 3 & 4 outcome, in other words, develop the beta version into a final version with the feedback and suggestions received by the manager.

2. Current Status of the Company

This chapter has two presents the information extracted from different casual conversations between me and the sole trader. The information is presented as follows: First, a specific statement made by the entrepreneur about her company's situation followed by proposed solutions to improve those situations. These suggestions are made with the objective to generate a useful toolkit for her. Reducing her time spent on managerial accounting duties.

Ever since I started my business, I've never had any problem in relation with the company's accounting or financial situation. An external accountant used to take care of all the documentation for me and present it to the authorities. The annual turnover and billing levels were extremely low. During summers I would issue a couple of bills to public institutions and then the business would be nearly stopped during the rest of the year. (Nadal 21.06.2021.)

My business made a sudden change at the start of 2021, when a dear friend offered to sell me one of her businesses for a discounted price. She couldn't keep up with everything and wanted to sell the less profitable part of her company. With my non-existent accounting knowledge, I checked all the documents I was given and forecasted how profitable it was, deciding to purchase it a couple of weeks later. (Nadal 21.06.2021.)

Currently, an external accountant takes care of all my tax payments or necessary documents for the authorities. But I feel that now that the business has increased turnover exponentially, I need to have a better look and understand the financial situation of my company. (Nadal 21.06.2021.)

To fulfil the manager desire of having a better of the company's financial situation, I include as a tool feature a sales budget and expense budget in order to predict current month's balance but also to give an insight on how the next periods will look like.

It is important to have a well-structured register of my clients, I need to know who I have billed and check easily if they have paid. The previous owner recognised to me that many clients didn't pay but admitted it was a lack of organization by her part. (Nadal 21.06.2021.)

It is clear the manager needs a user-friendly tool for someone with no prior knowledge of accounting. The manager statements during the interview give direct suggestions on what

the tool should include. The direct suggestion that are added to the tool are a client & billing database, the billing database includes a feature that allows the manager to check which bills are due and which ones are fully paid.

The external accountant asks for specific data quarterly like total turnover, VAT payable & receivable or monthly expenses. A place where this data can be filtered and registered would save me a lot of time organizing documents, I have checked internet tools' my accountant suggested but some of them lack many fields I need, and the rest are out of my budget. (Nadal 21.06.2021.)

It is important that I identify what my expenses are and their variance so I can forecast my next month's expenditure. I want to know how hiring someone to be at the swimming pool affects the profitability of the company. (Nadal 21.06.2021.)

In addition to the budgets, a general financial budget provides the cash generated or lost in the period selected. It helps with forecasting future cash usage and enable the manager to make better financial decisions with that information.

Furthermore, as primary feature of the tools, profitability ratios of the company are shown to provide an automated assessment of profitability. An example would be a spot where it shows how profitable was the purchase of the new project compared to the initial price and what the exact returns have been.

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These are the main features the tool has initially, small features are added to facilitate the use of it. For example, adding macros that allow printing in pdf specific bills or documents from the tool.

More features can be added during or after the project, suggested by the manager or if I come with an idea.

3. Toolkit Theoretical Framework

3.1 Budget

The first thought of most people when they hear about budget is, cost-saving, planning to reduce expenses, but there is more to what really a budget is.

In fact, there are many roles the budget could perform, including the following: Meeting the organisation's objectives, planning, monitoring, and controlling, co-ordinating, evaluating performance, improving performance, motivating managers, a management contract, communicating, providing a basis for authorising expenditure and delegating responsibility, identifying scarce resources, allocating resources, or demonstrating and delivering good corporate governance. (Wyatt N., 2012, 15.)

Prior explanation by Nigel Wyatt gives us an insight of what budgeting represents at big corporate level, in our case we look for a simpler definition. This statement is later confirmed by Wyatt stating that a starting point for any budget must be to define what the organisation's objectives are (Wyatt N., 2012, 18).

A budget is defined as the formal expression of plans, goals, and objectives of management that covers all aspects of operations for the designated time. The budget is a tool providing targets and direction. Budgets provide control over the immediate environment, help to master the financial aspects of the company, and solve problems before they occur. (Shim, Siegel & Shim, 2011, 1)

The purpose of the budget for the commissioning company is mainly to give an insight to the manager. The first objective is to enable the manager to monitor the sales & expenses, being able to control them once the manager is familiarized with the budget. The next steps are for her to set objectives and goals within the budget and establish a clear path to achieve them.

3.1.1 Sales Budget

Sales budget refers to the estimation of the sales revenue and the sales overheads for a particular period. Sales forecasting, which is nothing but an estimation of demand for goods or services in the market is essential for preparing a sales budget. (Prachi M. 2018)

The sales budget, as stated on the key concepts' definition chapter, it is the starting place for budgeting. The Excel tool takes into consideration prior period sales to forecast future

sales, but since the business is in auge, customers book their sessions months in advance. This allows the manager to give real data to the tool in order to project future sales into the budget.

3.1.2 Expense Budget

According to (Davoren, J. 2020) an expense budget is a financial plan about your company's identified expenses for the next period.

In the commissioning company's case costs are basic, as a micro-company it does not have big infrastructure, and this makes costs predictable.

The main expense of the company currently is the electricity bill of the swimming pool, it has its own ventilation, and it is also heated. The bill varies from 500€ to 1.000€ depending on the season. On summer there is no need of heating, so the bill is cheapest and on the coldest months in winter the bill doubles. In addition to it, there is a monthly loan payment of 877,08€. This loan was signed by the manager to be able to purchase the new area of her business.

There is a monthly hygienic inspection performed by a local laboratory, different insurances for the business and assets. The heating & purifying machines need annual inspections. It is projected that both machines need to be renewed at the end of 2022 implying there will be a need of a big investment to purchase new ones.

Smaller expenses like cleaning supplies or general supplies, furniture or occasional costs are also included on the expense budget to predict or visualize the average of this costs is in each period.

3.1.3 Financial Budget and Cash Flow Forecast

As stated on the key concepts, cash flow statements show how cash has been generated or used during a specific period. Cash flows are the main tool to analyse the liquidity situation of the company and will be later mentioned during the profitability ratios Subchapter.

Cash Flows can be either positive or negative, if it is positive, it means the company has more cash than at the start of the period on hands, it can also mean the company has received more money than the money it has spent. If it is negative, it means the company

has less cash than at the end of the period or that it has spent more money than the money it has generated in a specific time.

The commissioning company sales are usually paid the same month the service is performed, so sales agreed in the past won't affect cash flows until the month the service is performed. This has occasioned some drawbacks the last years. During the latest pandemic, Spain has been on intermittent lockdowns that have shut down businesses temporarily. On our case, the swimming pool was inoperative during five months in which costs like electricity bills were reduced but just slightly and not fully. This leads into months with negative cash flows, where bills must be paid but the only source of income are clients who can't be provided due to lockdowns.

Besides extraordinary situations like this one, or periods when there is a need of a big purchase, the most frequent situation is that every month the company has positive cash flows.

Why do we prepare cash flow forecasts? The usual reason for doing this is to assist with some sort of decision making in the present. (Jury, T., 2012, 257.)

By estimating future cash flows, the manager can determine objectives for her business. These objectives can be on the fields of liquidity, for example short-term ability to meet obligations or long-term debt or loans. It shows the seasonality of the different projects inside her business. A Cash Flow Forecasting model also allows the manager to predict how different price changes can change the company's situation.

3.2 Databases

A database is a data structure that stores organized information. Most databases contain multiple tables, which may each include several different fields. For example, a company database may include tables for products, employees, and financial records. Each of these tables would have different fields that are relevant to the information stored in the table. (TechTerms, 2009.)

In our case, the databases needed for the manager are simple, known as "flat file database", this means they are basically rows and columns in a spreadsheet.

These databases allow the manager to retrieve and filter specific data needed for specific times.

3.2.1 Client Database

The client Database for the commissioning company gathers different descriptions of clients like, Client Identification Number, full name, ID, Address, contact information and to which field of the business is he client of. The database provides many filter options for the manager to have easy access to specific client information.

This will be further explained on Chapter 4.

3.2.2 Sales & Expenses Databases

The Sales & Expenses Databases for the commissioning company gathers reference numbers, client or supplier information retrieved from the client database, quantity, payment method and a short bill description. The databases provide many filter options for the manager to have easy access to specific billing information.

This will be further explained on Chapter 4.

3.3 Profitability ratios & More

Profitability ratios are useful indicators of a company's performance and financial situation. They are helpful in forecasting and enabling management to set specific goals that are realizable. (Goel, 3.)

The case of the commissioning company is a bit specific; some profitability ratios can be hard to be represented when talking about a service providing micro-company.

The manager asks for metric that can determine the company profitability, this includes on our tool ratios like Net Profit Margin or Return on Investment.

3.3.1 Net Profit Margin

Net Profit Margin provides the ultimate profit picture of the company. As net profit is the final profit, this ratio tells how much of each euro earned by the company is finally translated into profits.

The whole purpose of a small company like the commissioned one is to have a positive Net Profit Margin.

$$Net\ Profit\ Margin = \frac{Net\ Profit}{Sales}$$

3.3.2 Return On Investment

Return on investment measures how effective an investment has been compared to the returns. If an investment of 1.000€ has returned 100€ it can be said the ROI on that investment is 10%. The formula takes the total returns of the investment and divides it by the total amount invested.

$$Return\ On\ Investment = \frac{Total\ Returns}{Total\ Investments}$$

When ROI calculations have a positive return percentage, this means the business is profitable. Meanwhile if the calculation has a negative ROI percentage, that means the business owes more money than what is being earned. In short, if the percentage is positive, the returns exceed the total cost. If the percentage is negative, the investment is generating a loss. (Gillis, 2020)

3.3.3 Liquidity Ratio - Current Ratio

Current Ratio determines the company's ability to meet short-term obligations or Current Liabilities with Current Assets like cash & equivalents or marketable securities.

$$Current\ Ratio = Current\ Assets\ /\ Current\ Liabilities$$

The ratio should be at least greater than 1, meaning the company can meet its short-term obligations with current assets like cash. It is recommended that Current Ratio should be around 1.8 to 2 for the company to be in a safe situation in terms of liquidity.

4. Managerial Accounting Toolkit

The scope of the tool limits the features to the following list: Client Database, Sales & Expenses Databases, Sales Budget, Expense Budget, Cash Flow Statements & Forecasts and Profitability ratios. This is the outcome of Project Task 1, and it was further explained in Chapter 2 – The Company Needs.

After defining the scope, a theory base has been built around it to understand the theoretical elements used on this project. Different resources have been used always trying to find the definition that fits the best the case company. This is the outcome of Project Task 2, and it was further explained in Chapter 3 – Tool Features.

This chapter uses both outcomes to create the Excel Tool applying the theory on Chapter 3 to the different features listed in Chapter 2.

The tool is structured as follows:

- **Spreadsheet 1 – Client, Sales & Expenses Data Entry Forms.**
- **Spreadsheet 2 – Client Database**
- **Spreadsheet 3 – Sales Database**
- **Spreadsheet 4 – Expenses Database**
- **Spreadsheet 5 – Sales & Expenses Budgets**
- **Spreadsheet 5 – General Financial Budget & Cash Flow Forecasts**
- **Spreadsheet 6 – Profitability ratios & Info**

Each and all of them relate to each other, specific data from different spreadsheets is shared with the other.

Figure 2. Structure of Managerial Accounting Tool.
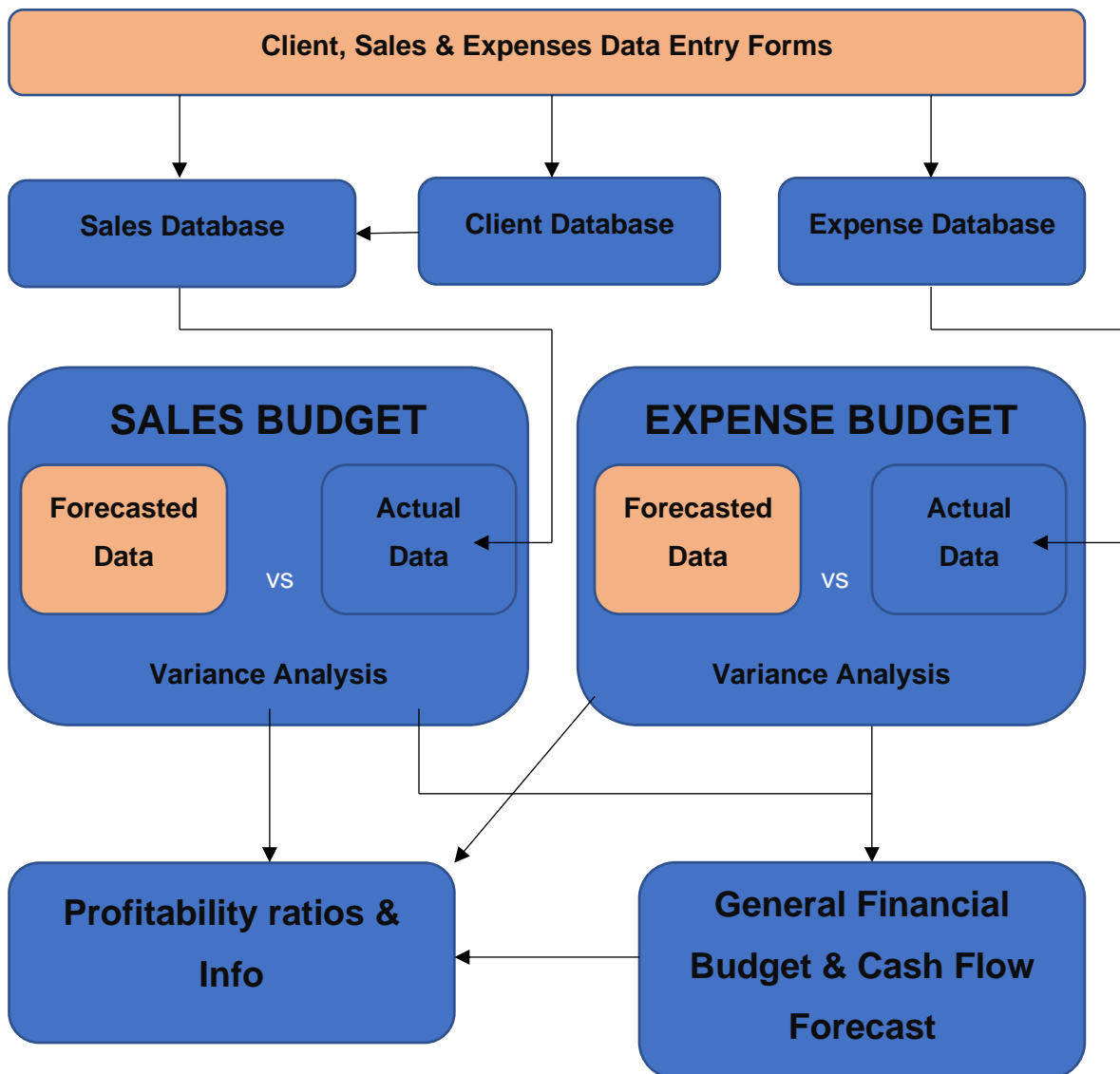
The figure above gives a picture on how the data is structured on the tool. Shapes filled on **light orange means the data is entered manually by the user** of the tool and is automatically transferred to the respective database or budget.

4.1 Spreadsheet 1 – Data Entry Forms

Spreadsheet 1 consists in three different Data Entry Forms, the Client data entry form, the Sales Billing data entry form, and the Expenses Billing data entry form.
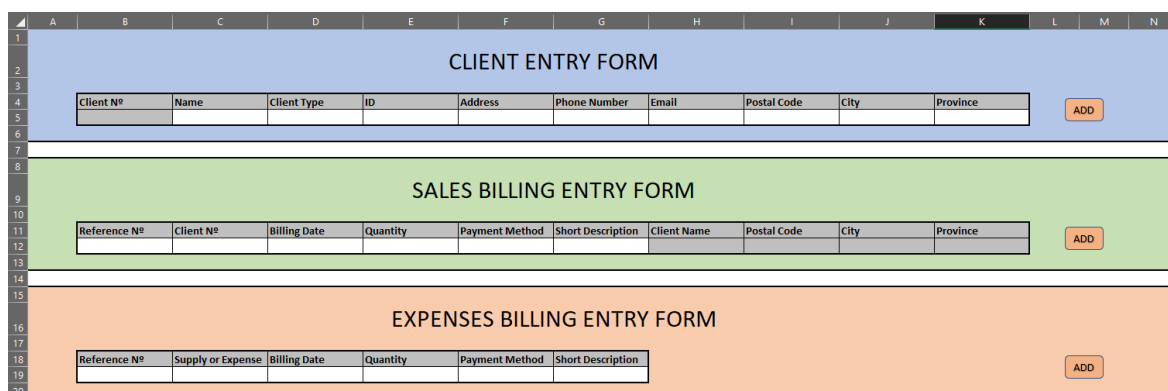
Image 1. Spreadsheet 1 – Data Entry Forms empty.

Image 1 shows what the user sees on its first interaction with the tool, spreadsheet 1 has three different Data Entry Forms. They are integrated by empty cells that need to be filled by the user to be able to continue. Empty cells which background is grey have a formula on it and can't be edited by the user. They are automatically completed once the user fills other specific cells, this is further explained below.

After the user has completed filling the empty cells of a Data Entry Form, the next step is to click on its respective button on the right that indicates "Add". This button is coded so it will move all information filled from the Data Entry Form to its respective Database.

This code is programmed on Virtual Basics for Applications (VBA) and does as following:
- **Data is copied from the Entry Form.**
- **A new row is created on the respective Database.**
- **Data is pasted on the empty row created in step 2.**
- **Data from the Entry Form is erased to be able to create another Data Form.**
- **Document is refreshed so every connected Spreadsheet is updated with new information.**

4.1.1 Client Data Entry Form

This Data Entry Form contains the following categories in empty cells:
- **Client Nº**
- **Name**
- **Client Type**
- **ID**
- **Address**
- **Phone Number**
- **Email**
- **Postal Code**
- **City**
- **Province**

From these cells, all of them except two can be filled by the user by writing the respective information on the blank cell below.

Client Nº has grey background, which means it has a formula in it, the formula itself automates the number shown on the cell. Every time the user uses the "Add" Button on the Client Data Entry Form, this number is updated or added 1 to it. This means that the code behind the "Add" button on this form has an additional step:

- **Data on Cell "Client Nº" is NOT erased and it sums +1 to it.**

Client type can't be completed by writing but choosing from a drop-down list that contains the type of clients the company has: Individual, School, Public Institution, Other.
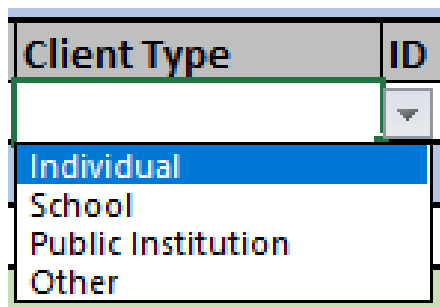

Image 2. Drop-down list on Client Data Entry Form

4.1.2   Sales Billing Data Entry Form

Sales Billing Entry Form contains the following categories in empty cells:
- **Reference Nº**
- **Client Nº**
- **Billing Date**
- **Quantity**
- **Payment Method**
- **Short Description**
- **Client Name**
- **Postal Code**
- **City**
- **Province**

From these cells, there are 4 categories which contain a formula in it. It is indicated by their grey background. **Client Name, Postal Code, City and Province** share the same formula. When the user completes the second category "Client Nº", these cells are automatically completed with the respective information. They do so by looking up the information on the Client Database. This has been made to automate the process and make the process quicker for the user.

4.1.3 Expenses Billing Data Entry

Expenses Billing Entry Form contains the following categories in empty cells:

- **Reference Nº**
- **Client Nº**
- **Billing Date**
- **Quantity**
- **Payment Method**
- **Short Description**
- **Client Name**

The only category that can't be completed manually is "Client Name", which follows the same procedure as the cells mentioned on 4.1.2. It is automatically completed once the user completes the cell "Supplier Nº".

4.2 Spreadsheet 2 – Client Database

The Client Database Spreadsheet is created and updated by the Client Data Entry Form, and it has the same categories as the entry form each in different column. User's input is stored in an Excel Table that can be modified and edited with filters, and a slicer that can be found on the top left of the spreadsheet. Enabling the manager to display which types of customers appear on the table.

Client Nº	Name	Client Type	ID	Address	Phone Number	Email	Postal Code	City	Province
000	Guillem	Individual	1112223H	Home	123456	user@mail.com	03802	Alcoi	Alicante
001	School	School	1112223H	Home	123456	user@mail.com	03802	Alcoi	Alicante
002	Alcoi City Hall	Public Institution	1112223H	Home	123456	user@mail.com	03802	Alcoi	Alicante
003	[Redacted]	Other	1112223H	Home	123456	user@mail.com	03802	Alcoi	Alicante
004	[Redacted]	Individual	1112223H	Home	123456	user@mail.com	03802	Alcoi	Alicante
005	[Redacted]	Individual	1112223H	Home	123456	user@mail.com	03802	Alcoi	Alicante
006	[Redacted]	Individual	1112223H	Home	123456	user@mail.com	03802	Alcoi	Alicante
007	[Redacted]	Individual	1112223H	Home	123456	user@mail.com	03802	Alcoi	Alicante
008	[Redacted]	Individual	1112223H	Home	123456	user@mail.com	03802	Alcoi	Alicante
009	[Redacted]	Individual	1112223H	Home	123456	user@mail.com	03802	Alcoi	Alicante

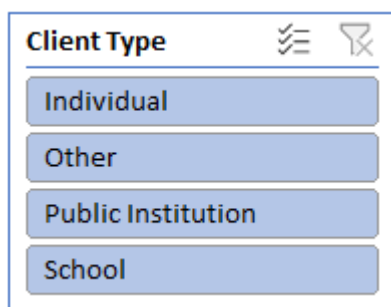Image 3. Client Database with Redacted Information.

Image 4. Client Database Slicer.

4.3 Spreadsheet 3 – Sales Database

The Sales Database Spreadsheet is updated by the Sales Data Entry Form, as the Client Database, it has the same categories as its own Data Entry Form on Spreadsheet 1. User's input is stored on the Excel Table and can be modified and edited with filters.

Reference Nº	Client Name	Client Nº	Billing Date	Quantity	Payment Method	Short Description
0	Guillem	1	31/08/2021	- €	Bank	September Service
1	School	2	31/08/2021	200,00 €	Bank	September Service
2	Alcoi City Hall	3	31/08/2021	250,00 €	Bank	September Service
3	[Redacted]	4	31/08/2021	40,00 €	Cash	September Service
4	[Redacted]	5	31/08/2021	60,00 €	Cash	September Service
5	[Redacted]	6	31/08/2021	40,00 €	Cash	September Service
6	[Redacted]	7	31/08/2021	40,00 €	Cash	September Service
7	[Redacted]	8	31/08/2021	40,00 €	Cash	September Service
8	[Redacted]	9	31/08/2021	40,00 €	Cash	September Service
9	[Redacted]	10	31/08/2021	40,00 €	Cash	September Service
10	[Redacted]	11	31/08/2021	40,00 €	Cash	September Service
11	[Redacted]	12	31/08/2021	60,00 €	Cash	September Service
12	[Redacted]	13	31/08/2021	40,00 €	Cash	September Service
13	[Redacted]	14	31/08/2021	60,00 €	Cash	September Service
14	[Redacted]	15	31/08/2021	40,00 €	Cash	September Service
15	[Redacted]	16	31/08/2021	40,00 €	Bank	September Service
16	[Redacted]	17	31/08/2021	40,00 €	Cash	September Service
17	[Redacted]	18	31/08/2021	40,00 €	Cash	September Service

Image 5. Sales Database with Redacted Information.

This Database is used by the user to keep up on bills sent to customers. Issued bills must be added on the Entry Form, after it, the manager will need to check manually which bills have been paid and keep track of the bills that are still not paid.

This Database has an additional secondary feature. The user can print in pdf any bill registered on the database. This action is programmed with VBA inside the Excel interface.

There is a small interface at the top right of the Spreadsheet with the title "Bill Printer". It first has two empty blank cells that can be filled. "Reference Nº" is used to select the bill that wants to be printed. If the user wants to print bill number 1, it must be written on this specific cell. Second blank cell is "Bill Description", this cell gives additional information to the bill saved in pdf. For example, if the bill is for a service provided in August, this cell should contain the text "August Service".

After these two cells there are 7 more cells, but they have grey background. This means they have a formula on them and are automatically filled as it explicitly says on top of them. These cells depend on the input on the cell "Reference Nº", they automatically look up the respective information on the Client Database Spreadsheet.

Image 6. Bill Printer with Example Contact Information of Bill Nº1.

Once everything is filled and checked, the user presses the button below that states "Print". This action will create a bill in pdf format on a specific folder created specifically for the bills. This is done by taking a sample bill in pdf and filling it with the information provided on the "Bill Printer" box. The name on the document created is "Bill + Respective Reference Number" .pdf. The code steps do as follow:

- **Data is copied from the "Bill Printer" respective cells.**
- **Bill Sample document is opened.**
- **Data is pasted on its respective designated cells for each category of data.**
- **Bill Sample with the specific data is saved as a new document with the Reference Number as name in pdf format.**

4.4 Spreadsheet 4 – Expenses Database

The Expense Database Spreadsheet is updated by the Expenses Data Entry Form, it follows the same procedure as prior Databases. It is the manager's responsibility to add her expense bills on time to the tool for it to be 100% representative. Since Cash Flows are calculated monthly, the manager can, but it's not recommended, wait to add all expense bills until the end of each period and update it all at once.

Reference Nº	Supply or Expense	Billing Date	Quantity	Payment Method	Short Description
I202106	Insurance	01/07/2021	330,00 €	Bank	Second Semester Insurance
P04489	Electricity	04/07/2021	556,24 €	Bank	June's Electricity
202108H	Maintenance	04/07/2021	30,00 €	Bank	July's Inspection
33335P	Phone	04/07/2021	15,00 €	Bank	June's Phone Bill
W23359	Water	04/07/2021	43,57 €	Bank	June's Water
202109H	Maintenance	04/08/2021	30,00 €	Bank	August's Inspection
33336P	Phone	04/08/2021	15,00 €	Bank	July's Phone Bill
P04490	Electricity	05/08/2021	512,39 €	Bank	July's Electricity
W23360	Water	05/08/2021	38,75 €	Bank	July's Water
P04491	Electricity	04/09/2021	535,45 €	Bank	August's Electricity
202110H	Maintenance	04/09/2021	30,00 €	Bank	September's Inspection
33337P	Phone	04/09/2021	15,00 €	Bank	August's Phone Bill
W23361	Water	04/09/2021	40,12 €	Bank	August's Water

Image 7. Expense Database with Redacted Information.

This database contains a slicer as a feature that allows the user to search specific types of supply or Expenses like Water or Electricity.
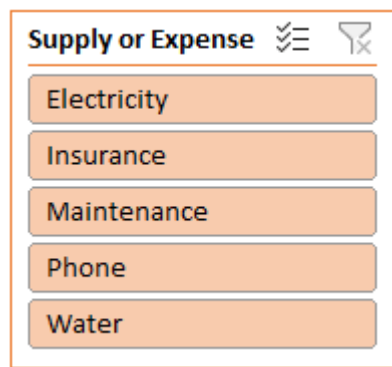

Image 8. Expense Database Slicer.

4.5 Spreadsheet 5 – Sales & Expenses Budgets

Spreadsheet 5 is shared by both Sales & Expenses Budgets with Cash Flow Statements because they mainly work with the same data, and they are all relevant to each other.

On the top left of the spreadsheet a big box can be found with the title "Forecasted Data".

Image 9. Forecasted Data in Spreadsheet 5.

This box allows the user to forecast monthly sales & Expenses for the whole year. This data is later translated to the budgets and Cash Flow Statements for variation calculation.

Next there are Sales Budget and Expenses budget, one below other. Data from each month is shown on each column. Actual Sales data and Expenses data is retrieved from their respective Databases. Beneath actual data, forecasted data from prior box is shown for each month, and below there is a short variation calculation that retrieves the differences between Actual Data and Forecasted Data. The formula goes as:

$$Budget\ Variance = \frac{Actual}{Forecast} - 1$$

Data is shown in different formats for each budget.

On the Sales Budget, a positive variance means the actual sales are higher than the forecasted sales, since that's a positive fact, there is a conditional formatting on variance data. If positive, data will display on green font & background, if negative it displays on red font & background.

On the Expenses Budget it is the opposite. A positive variance means the actual expenses are higher than the forecasted sales and that is a negative point on the company. There is a conditional formatting on the variance data, if negative, data will display on green font & background, if positive it displays on red font & background.

	January	February	March	April	May	June	July	August	September	October	November	December
Sales Budget												
Actual	3.900,00 €	2.000,00 €	2.000,00 €	2.000,00 €	3.000,00 €	3.500,00 €	4.900,00 €	4.790,00 €	5.000,00 €			
Forecast	4.000,00 €	2.000,00 €	2.100,00 €	3.000,00 €	3.500,00 €	4.000,00 €	4.000,00 €	4.500,00 €	4.500,00 €	4.500,00 €	4.500,00 €	5.000,00 €
Variance	-3%	0%	-5%	-33%	-14%	-13%	23%	6%	11%	-100%	-100%	-100%

	January	February	March	April	May	June	July	August	September	October	November	December
Expenses Budget												
Actual	1.677,08 €	1.667,08 €	1.627,08 €	1.577,08 €	1.577,08 €	1.677,08 €	1.851,89 €	1.473,22 €	1.497,65 €			
Forecast	1.600,00 €	1.570,00 €	1.520,00 €	1.520,00 €	1.480,00 €	1.430,00 €	1.430,00 €	1.500,00 €	1.575,00 €	1.560,00 €	1.630,00 €	1.630,00 €
Variance	5%	6%	7%	4%	7%	17%	30%	-2%	-5%	-100%	-100%	-100%

Image 10. Sales & Expenses Budgets on Spreadsheet 5.

4.6 Spreadsheet 5 – Cash Flow Statements & Forecast

Cash Flow Forecast is created using data from the "Forecasted Data" box, comparing it to actuals and giving the variance between actuals and forecasted. The result are three different rows for each month.

 The actual Cash Flow shows the actual data from taking Actual Monthly Sales and subtracting Actual Monthly Expenses. Below it, Forecasted Cash Flow monthly data is taken from the "Forecasted Data" box. A variance between Actual and forecasted data can be found underneath it. The formatting of the variance data follows the same rules as the Sales Budget Variance.

	January	February	March	April	May	June	July	August	September	October	November	December
Cash Flow Statements												
Actual	2.222,92 €	332,92 €	372,92 €	422,92 €	1.422,92 €	1.822,92 €	3.048,11 €	3.316,78 €	3.502,35 €			
Forecast	2.400,00 €	430,00 €	580,00 €	1.480,00 €	2.020,00 €	2.570,00 €	2.570,00 €	3.000,00 €	2.925,00 €	2.940,00 €	2.870,00 €	3.370,00 €
Variance	-7%	-23%	-36%	-71%	-30%	-29%	19%	11%	20%	-100%	-100%	-100%

Image 11. Cash Flow Statements on Spreadsheet 5.

4.7 Spreadsheet 6 – Profitability ratios & Info

Spreadsheet 6 is formed by three different elements.
The first one shows financial information relevant for the company.

Capital Invested on the Company	25.000 €

LOAN PAYMENTS AS 09/2021	
Payment Every Month	877,08 €
Total Due	26.312,44 €
Total Interests Due	1.312,44 €

Current Assets as 09/2021	16.464,76 €

Current Liabilities as 09/20	10.524,96 €

Image 12. Financial Information on Spreadsheet 6.

As mentioned earlier, the manager bought what is now, her most important part of business. In all aspects, size, clients, revenue, and time spent on (Between different parts of her company). The acquisition was done thanks to a loan that is still being paid. Her monthly payments are of 877,08€.

To calculate the company's current Assets, we will go back into the Current Ratio definition, which states that current Assets are cash & equivalents and marketable securities. In our case, the manager only has the cash generated from the business itself.

Stated this, the Current Asset calculation is extracted by adding every Cash Flow since the purchase of the business.

Her current Liabilities are the short-term obligations. The loan has a 3-year time period so we will only consider next 12-month payments as short-term obligations. 10.524,96€ is the result of multiplying the Monthly payment by 12.

Financial Metrics	
Current Ratio	1,564353689
Actual ROI	65,86%

Image 13. Financial Metrics.

Current Ratio of the company is 1,56 meaning the company is more than able to afford its short-term obligations with its cash & equivalents. This states the company is in a great financial situation and it doesn't forecast any liquidity problems or any trouble to pay back its debts.

In terms of profitability, the initial capital investment of 25.000€ has returned a total of 16.464,76€ meaning it has a Return on Investment of 65,86%, this confirms that the initial purchase it's been a great decision for the manager and a profitable investment.

The company's net profit margin has been shifting on a range of 17%-70%. The main reason for the low profit margin was due to lockdowns being placed during Sprint months, shutting down most of the businesses. Keeping positive Profit Margin during those months states how profitable this business can be for the manager. Most profitable months have been July, August, and September with 62%, 69% and 70% of Net Profit. The total Net Profit Margin for 2021 has been 53%.

Net Profit Margin										
2021	January	February	March	April	May	June	July	August	September
53%	57%	17%	19%	21%	47%	52%	62%	69%	70%

Image 14. Net Profit Margin 2021.

4.8 Initial Feedback & Adjustments

The idea behind this tool is to save time while keeping track of my sales and expenses in a structured and well-organized way. I still need to accommodate to Excel but the tool has 100% met my expectations. (Nadal, 26.09.2021.)

Some feedback has been received to improve the tool and make it better for personal preferences of the manager.

The service at the swimming pool is given to children, but the client who pays is their parent. In this situation, the manager remembers each client by their children's names. To make it easier for the manager, another column at the Client Database & Client Data Entry Form has been added. A new category named "Childs Name" can be used as reference to remember specific clients by the manager.

CLIENT ENTRY FORM										
Client Nº	Parents Name	Childs Name	Client Type	ID	Address	Phone Number	Email	Postal Code	City	Province
										ADD

Image 14. New Client Entry Form.

Client Nº	Name	Child Name	Client Type	ID	Address	Phone Number	Email	Postal Code	City	Province
000	Guillem		Individual	1112223H	Home	123456	user@mail.com	03802	Alcoi	Alicante
001	School		School	1112223H	Home	123456	user@mail.com	03802	Alcoi	Alicante
002	Alcoi City Hall		Public Institution	1112223H	Home	123456	user@mail.com	03802	Alcoi	Alicante
003	[Redacted]		Other	1112223H	Home	123456	user@mail.com	03802	Alcoi	Alicante
004	[Redacted]		Individual	1112223H	Home	123456	user@mail.com	03802	Alcoi	Alicante
005	[Redacted]		Individual	1112223H	Home	123456	user@mail.com	03802	Alcoi	Alicante
006	[Redacted]		Individual	1112223H	Home	123456	user@mail.com	03802	Alcoi	Alicante

Image 15. New Client Database.

The manager would also like to be able to print invoices at the same time as they register them at the Database, that is why a new "Bill Printer" box, identical as the one at the Sales Database has been added to Spreadsheet 1. Next to the Sales Billing Entry Form so the manager has quicker access to save the bills in pdf while registering them on the Sales Database.

Image 16. New "Bill Printer" Feature on Spreadsheet 1.

5. Conclusions & Self-assessment

After a couple months of tool usage by the Sole Trader, some conclusions can be made.

Prior to the usage of this toolkit, the manager spent 3 to 5 minutes creating a single bill for an individual client. With her current number of clients, this would mean spending 5 to 8 hours/ month on creating her invoicing bills. By using the Data Entry Forms, Silvia spends 30 seconds on average on each bill, the current total time spent per month on bill creations is 50 minutes on average.

 A reduction on time spent creating bill of around 85% has allowed the entrepreneur to open more service sessions which have been filled very fast.

The entrepreneur has now clear, well-structured information about their suppliers or clients, allowing her to easily find their specific paid or due bills when asked in-situ. Before using the tool, bills were printed and physically stored with no organization whatsoever.

The idea behind this project always was to help Silvia keep up with her daily workload, reducing her time spent on tasks such as billing clients or forecasting her financial situation on the next months.

The objective of the project has been achieved, Silvia has reduced her time on easily automated tasks, but also has gained meaningful insight of her company. This new (or better structured) information allows her to make better decisions for her and her company.

This Managerial Accounting Toolkit project doesn't end here, more features are going to be added in the future in case of need. I will solve or find solutions for any problem she has with the tool, but also with any accounting or finance problem that may appear in the future.

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