

Master Thesis

Meeting (latent) desires within the organization known as MeMon B.V.

May, 2014



About the report

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About the company

MeMon BV is a trading organization focused on organic and organo-mineral fertilizers. Products are being offered on both the professional market (farmers) as well as on the non-professional market (the regular consumer).

On a national scale, the company primarily sells its wares to wholesalers, which in turn distribute the goods to garden centres and do-it-yourself-stores. Internationally, the organization uses agents and importers, resulting in a business that stretches into over 50 different countries worldwide.

The multitude of different products offered by MeMon, together with the things mentioned above, make it one of the largest and most successful companies in its branch.



Preface

X.T. Liu
Arnhem/Enschede, May 2014

Presented before you is the final product of my Master Thesis. This report is the conclusion of my two-year master “Industrial Engineering & Management”, of which I have chosen the finance track. The content of this thesis describes my own research regarding a problem and/or problems that is/are faced in practice by the organization known as *MeMon BV*, located at Arnhem, Netherlands, and supervised by Ir. H. Kroon.

The essence of this report shows the things I have experienced during my time at the company, what I have learned and how all of this is used in order to find a fitting solution to a specific problem/problems within the organization.

I would like to thank everyone at MeMon BV for all of their time and effort they have dedicated to me, and of course for offering me this very interesting, fun and educative opportunity to be part of the company.

Special thanks go to:

- ❖ Dr. P.C. Schuur, second supervisor University of Twente

Management Summary

Purpose of this report

MeMon BV is a trading organization focused on organic and organo-mineral fertilizers. It is a growing organization and by the looks of it, it will continue this trend in the foreseeable future.

In its current situation, a variety of problems can be named; employees can perform tasks from their co-workers, but they do it in their own (slightly different) way, which may lead to confusion when others review their results. Furthermore, their (latent) desires are not met. In essence, this refers to personnel wanting answers to specific questions, yet they are not able to satisfy these needs. In order to accommodate for this, years ago, an Enterprise Resource Planning (ERP) system known as Exact Globe was purchased and implemented throughout the organization. However, its full potential remains unutilized; either because people lack certain knowledge, or due to Exact's own shortcomings and/or database limitations. In turn, the answers people are looking for remain absent and in fact, the issue at heart impacts the company as a whole, resulting in (potential) consequences that range from an incorrect view on performance, all the way to customer dissatisfaction.

The purpose of this report is to derive a solution to the main problem at hand:

Main problem

"How can (latent) desires be met, upon which not only the employees themselves benefit, but MeMon as a whole as well?"

Answering the above question is done in parts, the integration of individual findings then serving as the final solution. It comes in the form of:

Final Solution

A system developed within Microsoft Access, presented as a user-form from which personnel can specify exactly what results they want to see, the latter of which is tied to numerous different queries and databases that serve as its foundation. Its main goal is to be both aimed at end-users (i.e. ease of use), as well as being able to generate results that can be relied on (i.e. accurate and trustworthy).

With the post-calculation system in place, answers to questions such as the following can be generated:

Desires

- What are the net earnings made on client X during period Y?
- What are the net earnings made during period Y that include supplier Z?
- What are the net earnings made during period Y?
- What is the contribution margin on sales product A made on client X during period Y?

Essentially, the wishes of employees relate to being able to derive the true profit margin for a given situation or scenario, also known as a project. In order to accomplish this, all relevant data related to the project are gathered through the use of underlying queries present in the post-calculation system, which, in turn, utilize the databases of the Enterprise Resource Planning software as their source material.

Afterwards, meeting the desires is done by performing a step-by-step process, the latter of which is tied to the user interface of the post-calculation system itself.

User Interface

First, users can specify which contribution margins they want to analyze. One can directly search for a project, or view results by inputting search criteria; view projects that have been completed within a specific time frame, that contain a particular client or supplier, or that include an explicit article.

Having then entered the information and upon performing the automated search, the projects that meet the criteria are shown. From this, a user can simply select the project he/she wants to analyze using a variety of different options:

- “Marge Analyse”: shows the total profit per ton for the selected project.
- “Details”: shows exactly which expenses, earnings, etc. are taken into account for the derivation of the contribution margin.
- “Zoomen”: enables users to further delve into the project itself, allowing one to apply the contribution margin analysis on an even deeper level, i.e. per product (only relevant if a project consists of multiple goods).

Looking back at the desires themselves, it can be seen that they all relate strongly to financial aspects of the company. From this, it should be noted that the post-calculation system is not constructed to simply enable the derivation of a certain figure (e.g. a contribution margin of a product) but instead, one has to interpret the true meaning of generated results. In essence, the desires to be met only act as an intermediate tool to address the core business processes of the company: post-calculation results should be analyzed with respect to their managerial implications such as knowing which products to push, what clients to prioritize and more, lest overall (financial) performance is jeopardized in future years to come.

In MeMon’s own words regarding the subject matter:

“As of now, it remains unclear how specific types of costs are allocated and how they should be recorded in the financial reports. Consequently, cost prices can be incorrect, further resulting in wrong margins and/or profits. Customer- and supplier contracts are also of great importance to us; being able to supply the right amounts when necessary, timely delivery, buy-in prices combined with potential discounts etc. Overall, what would be really helpful with respect to our accounting system is cost price calculation, both initial/forecasted and actual/realized”.

-MeMon BV

The above is exactly what is achieved throughout the master thesis research, the results of which are presented in this report.

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CHAPTER 1: Introduction

This opening chapter focuses on the framework surrounding my research. First off, a short introduction is given about the organization, MeMon BV. Afterwards, an analysis is made regarding the current situation and the problem(s) that is/are faced. Next, this section continues by deriving the relevant research questions that will be answered throughout this report, together with a more in-depth analysis of the existing state of affairs and is concluded with the formulation of the research goal(s).

1.1 Introduction to MeMon BV

MeMon BV is a trading organization focused on organic and organo-mineral fertilizers. Products are being offered both for the professional market (i.e. fruit and vegetable cultivation, wineries, tree nurseries, flower cultivation, ecological agriculture and horticulture) as well as the non-professional market (i.e. hobbyists, sports turf and amenities). On a national scale, the company primarily sells its wares to wholesalers, which in turn distribute the goods to garden centres and do-it-yourself-stores. Internationally, the organization uses agents and importers, resulting in a business that stretches into over fifty different countries worldwide.

The organization is solely focused on maximizing sales volume; the total amount of production costs are small, which is primarily due to the relatively low price that is paid for resources within the Netherlands. Taking this into account, MeMon BV tries to sell as many of their products as possible by incorporating these cost advantages into their sales prices (i.e. a low profit margin is used). The multitude of different goods offered by MeMon, together with the things already mentioned above, make it one of the largest and most successful companies in its branch.

"MeMon blossoms thanks to our wide range of fertilizers, intensive customer relations and a real passion for our business. We invest in people, resources and potential because ultimately, these are the ingredients for a successful partnership and mutual growth".

-MeMon BV

Consequently, the company keeps on growing at a rapid pace, even after their initial establishment in the market over fifteen years ago. With it, MeMon BV strives to develop itself into a larger, more advanced organization and in order to successfully accomplish this, an optimal functioning of internal systems is crucial.

1.2 Research design

This section of the report is dedicated to the actual approach taken throughout the research. First off, an abstract analysis of the current situation is made, leading up to the problem recognition. Next, appropriate research questions will be formulated and the overall structure of the thesis is shown. Finally, using the above, the current situation will be analyzed in detail with respect to what is relevant for the research.

1.2.1 Current situation (abstract)

MeMon is a growing organization and by the looks of it, it will continue this trend in the foreseeable future. However, with it, complications arise; orders become more complex, the increase in customers leads to a larger diversity in demand, there needs to be more attention to detail in order to guarantee correct completion and overall, there are just more things that need to be done right.

MeMon has a flat organizational structure, counting just ten different employees at their main office. Because not everyone is present at the same exact time, a variety of different tasks are interchangeable between the workers. Although this ensures a high rate of flexibility, it can also create inefficiency, seeing as employees tend to use their own methods of achieving the same end result (for instance, the steps taken to complete a new customer order). What works for some, may not be the case for others and hence, confusion may arise, possibly leading up to minor and/or even major errors. To counter this, MeMon implemented an administrative system back when it first started to experience rapid growth. In 2007, the Enterprise Resource Planning (ERP) software “Exact Globe” was purchased and introduced within the company with the intention to streamline the different activities of the employees; even if workers do things their own way, they still need to record their actions in Exact and the results (using the software) should be understandable for everyone. Although this idea sounded good in theory, in practice, there are still a number of flaws; for one, MeMon has grown. With it, the need for information has grown as well. Where Exact used to handle the “simple” things perfectly all those years ago, the more complex data as of now (for instance, larger and more diverse orders) are just not implemented well enough into the system, resulting in extra and unnecessary work. This is precisely what causes flaw number two; Exact is not used to its full extent. Employees do their jobs, and they want to do their jobs well and fast. If they can get things done right without the (full) use of Exact, they will, simply because it eliminates all the needlessly added work.

In essence, Exact has the potential to make things a lot easier for everyone at MeMon. Currently, however, employees tend to have specific desires (even if they themselves cannot specify exactly what they are) and utilization of Exact Globe does not always result in a satisfaction of these needs. Consequently, it leads to added disadvantages rather than pure benefits when using the software.

1.2.2 Problem recognition

By analyzing the current situation, a variety of problems can be named; employees can perform tasks from their co-workers, but they do it in their own (slightly different) way, which may lead to confusion when others review their results. Furthermore, the ERP software known as Exact is implemented within MeMon, but in its current state, it fails to live up to its full potential, causing extra disadvantages and complications when it is used, rather than making things easier. These issues can eventually create minor and/or major errors within the company, resulting in negative effects ranging from customer dissatisfaction to an incorrect view on the company’s overall performance. Graphically, these causal links between problems can be depicted as follows (refer to figure 1)¹.

The core problem

From figure 1, it can be seen that there are two potential core problems that can be addressed; either the (latent) desires of employees, with respect to Exact Globe’s inability to meet them, or the fact that employees complete interchangeable tasks in their own way. However, as stated before, even though the methods of workers may be different, the outcome is still the same (for instance, they successfully processed a new customer order). The difference is solely related to the method that is used to achieve this result, more specifically the steps taken for this accomplishment (i.e. how and/or where does employee X store data relevant for the task etc.).

¹ It should be noted that in general, the flow of the figure is not set (i.e. it can go from top-down or the other way around, bottom-up). In this case, the latter format is chosen, as is illustrated by the arrangement of the arrows.

Taking this into account, it follows that the focus of this research lies on meeting employees' desires regarding the use of Exact; the software was initially purchased and introduced within the company to streamline and facilitate activities, regardless of how employees choose to perform their duties.

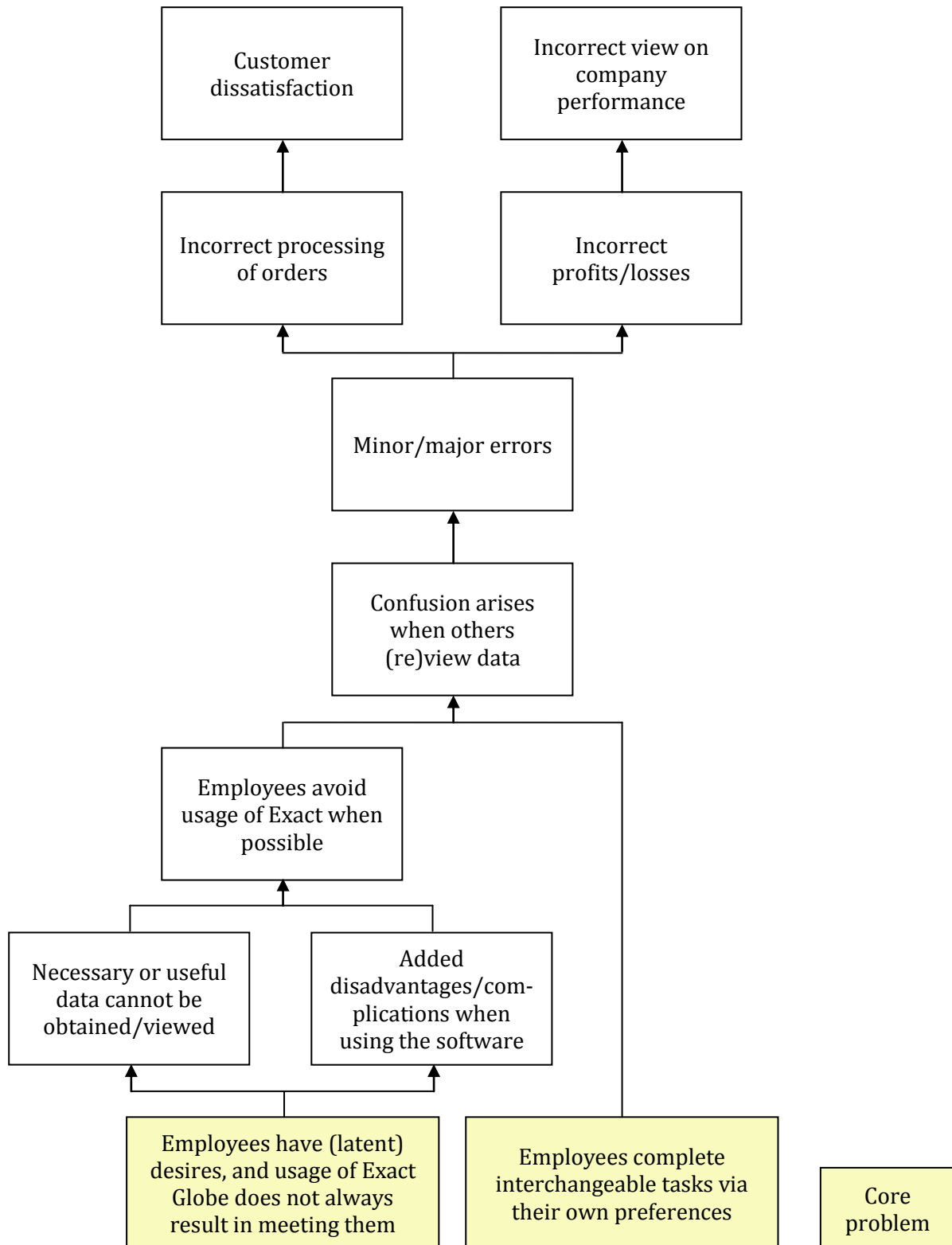


Figure 1: Causal chain of problems

Furthermore, even if a strict policy would be laid out on how everyone should do their work, it would still not solve the fact that Exact, in its current state, cannot correctly handle the increasingly complex data and if nothing else changes, its full potential would remain untouched. Hence, the core problem that will be addressed throughout the research will be meeting the (latent) desires of employees through the aid of Exact (when/where possible). Doing so will be of great help to the organization, as can be seen from the causal chain of problems; if usage of Exact makes things easier for everyone (i.e. it satisfies needs), it will no longer be avoided. Consequently, activities will be more streamlined (everyone uses the same software), thus countering confusion and minimizing errors, eventually benefiting MeMon as a whole through better customer satisfaction/relationships and a correct view on its own company (financial) performance.

1.2.3 Research questions and overall structure

From the previous sections, it has been derived that the main focus throughout the research will lie on meeting employees' desires, when/where possible through the aid of MeMon's ERP software Exact Globe. Because of my own, personal, educational expertise (Bachelor of Science; "Technische Bedrijfskunde", master Financial Engineering & Management) and based on agreed upon terms with MeMon BV to utilize my strengths, financial aspects are added in the form of development of the company's current accounting system as well. In fact, this is precisely one of the things that Exact is not yet capable of handling in its current state; the progress of contract completion cannot be viewed (i.e. how many products remain to be delivered to customer X), neither does an overview detailing the actual profits that are realized on a specific contract (differences between forecasted- and actual profits may be the result of fluctuating prices, for instance).

"As of now, it remains unclear how specific types of costs are allocated and how they should be recorded in the financial reports. Consequently, cost prices can be incorrect, further resulting in wrong margins and/or profits. Customer- and supplier contracts are also of great importance to us; being able to supply the right amounts when necessary, timely delivery, buy-in prices combined with potential discounts etc. Overall, what would be really helpful with respect to our accounting system is cost price calculation, both initial/forecasted and actual/realized".

-MeMon BV

Although improving the accounting system of the organization certainly widens the scope of the research, it is still very closely related to the core problem that is defined in the previous section: "Meeting (latent) desires of employees". The two are connected because in essence, most wishes are specifically tied to the accounting system itself (such as the need to view profit margins, as briefly mentioned above).

Research questions

Now that the research has been given some focus, it is necessary to further emphasize this by formulating appropriate research questions. First off, a detailed analysis of the current situation with respect to both Exact and the accounting system needs to be made:

Analysis

"What is Exact Globe?"

"How is Exact Globe currently implemented/used in MeMon?"

"Which activities are related to the accounting system?"

Next, the complications regarding the current situation need to be analyzed. Hence:

Complications

“What kind of problems are related to the usage of Exact Globe in its current state?”

“What kind of problems are related to the current state of the accounting system?”

When all of these questions have been answered, the analysis of the current situation and all of the problems (relevant for this research) is complete. Afterwards, the core problem needs to be tackled. From figure 1, it is defined to be “Employees’ (latent) desires are not met” and from this same causal chain of problems, it can be seen that it leads to a number of different issues that affect the company (and its clients) as a whole. In essence, the needs of MeMon should be satisfied, if one were indeed to successfully counter the complications that are currently present. Hence, derived from the core problem that needs to be solved, the following main problem is formulated:

Main problem

“How can (latent) desires be met, upon which not only the employees themselves benefit, but MeMon as a whole as well?”

Answering the above question will be done in parts; afterwards, all of the individual solutions will be integrated into one final resolution. Also, although satisfying the needs of employees will primarily happen through the improvement of the accounting system, the aid of the ERP software Exact Globe is taken into account as well when/where possible. Consequently, the following sub-problems will be addressed:

Sub-problems

“How can the accounting system be improved?”

“How can the improvements of the accounting system be successfully implemented?”

“What general adjustments need to be made to Exact Globe?”

1.3 Current situation (detailed): Exact Globe & the accounting system

Following the research questions that have been formulated in the previous section, a detailed analysis of the current situation will be used as a starting point. For this, information about both Exact Globe and MeMon’s current accounting system are relevant. Although the focus lies on the latter, it is necessary to first create a general understanding of the ERP system that is used throughout the organization.

1.3.1 “What is Exact Globe?”

Exact Globe is a product developed by Exact Software, a company founded in 1984 and specializes itself in providing business software for small, medium and large organizations worldwide. Along with traditional, integrated solutions for Enterprise Resource Planning, Exact Software also develops related products that are in line with Human Resource Management (HRM), Customer Relationship Management (CRM), project management and electronic workflow.

Exact Globe functions as an administrative basis for nearly every business process; it is an integrated information system for financial-, logistic- and production administration, along with every process that is directly connected to them. The use of Exact Globe will result in an integration between the different administrations, allowing important connections to be made across departments and even establishments. Information is stored, linked and managed in a single, organization-wide, central database. All transactions – financial, logistics, HRM, CRM, projects and production – are stored here as well. Using Exact Globe, up-to-date records are available at any given time, allowing for a real-time overview of company performance.

1.3.2 “How is Exact Globe currently implemented/used in MeMon?”

As stated earlier, Exact Globe has been purchased and introduced within MeMon back in 2007. Currently, every department of the organization has access to the ERP software and utilizes it to a certain degree (some more than others). The overall structure of the company can be depicted as follows (refer to figure 2):

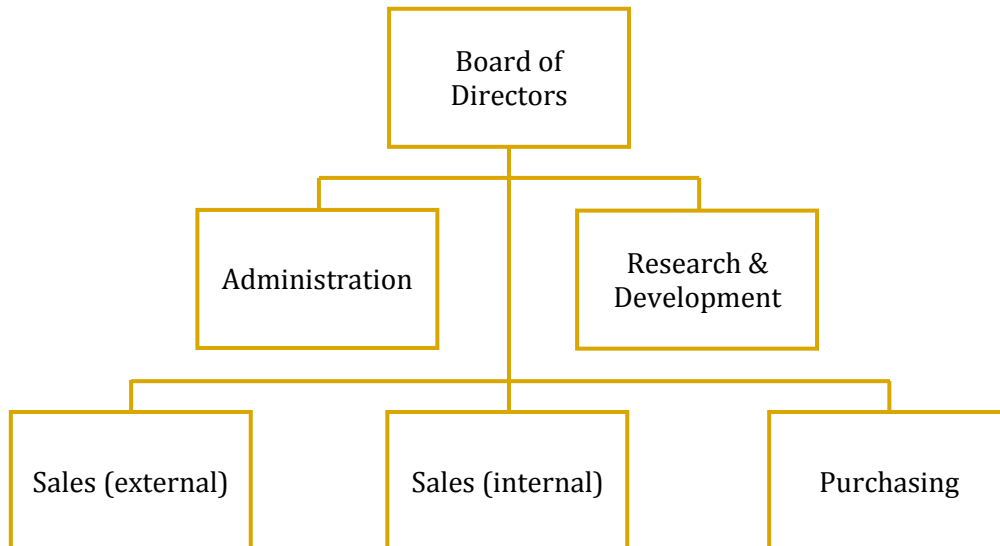


Figure 2: MeMon organizational structure

As can be seen, the organization has a very flat structure, which is fitting due to the small amount of employees available at the main office (a maximum of ten). The Board of Directors acts as head of sales and purchases, as well as overseeing products that are developed by MeMon's own facilities. The department dedicated to the latter, Research & Development², actively stays in touch with customers, performs market analyses and more, all to ensure the production of goods that are either in high demand, or custom fitted for clients. Administration primarily handles all financial aspects of the company, including bank mutations, payments made and/or received etc. Then there is the sales department, divided in both an external and an internal division. Whereas the former focuses on maintaining existing customer relationships and creating new ones (visiting fairs, meetings or even regular phone conversations), the latter processes all of the (new) customer orders. Finally, the purchasing department is responsible for buying the goods that are to be traded, as well as fitting package material(s) and takes care of all transportation that is needed.

Having discussed the organizational structure of MeMon, it is now time to analyze precisely how Exact is being used and currently implemented into the departments that are relevant for this research: Sales, Purchasing and Administration.

Sales & Purchasing

The main activity that takes place within these departments is the processing of (new) offers made to customers. From beginning to end, it all starts with a request for quotation, (hopefully) leading all the way up to actually selling and delivering the goods to the client. This entire trajectory is processed either within Exact Globe or at least with use of the software. When an offer is made, there are two possible outcomes; either the client accepts it, or he/she does not. In

² Note: the focus of this research lies on the trading activities of MeMon BV. That is; products that are being purchased and in essence, resold in the exact same condition to other parties. For this reason, the R&D department is somewhat irrelevant, but will nevertheless be included/mentioned when necessary.

case of no response, the customer is re-contacted (via phone or mail), usually after three days. Again, the offer can be declined or accepted (possibly after some changes are made to the original quotation). After an agreement has been reached, a new sales order is created and processed, which is the starting point of using Exact. (note: the actual process of constructing an offer does not take place in Exact). First, the order is checked for errors and afterwards, it is entered into the ERP software. If the client is new to MeMon, the customer database (also within Exact) needs to be consulted; information is needed regarding the name of the person placing the order, his/her reference, order number, description of the product(s) and finally, delivery- and billing address. Existing customers do not need to go through this entire process; their data are readily available for future use. After all client information is processed, Exact is utilized to purchase the required goods, package materials and even transport if necessary. Also, it is possible that the time limit of an offer expires. If that is the case, new agreements need to be made with the customer regarding price, which are then processed in price lists within Exact. Another scenario that is not uncommon for MeMon is having to update the product database of Exact Globe as well; this happens when an offer contains goods that have not been sold before (for instance, custom goods, specifically tailored to the client's demand via use of the company's own production facilities). These new products (including their recipes, required transport etc.) are all entered in Exact. After the sales order has been successfully inputted, everything is checked one last time before the final authorization is given, also with use of Exact Globe. If needed, Administration is contacted to handle any anomalies. When the supplier delivers the goods and MeMon has transported it to the customer, one last entry is made in the ERP software, which states delivery details such as a confirmation of it being sent, actual weight of the transport etc.

Administration

The activities related to this department are largely connected to the full quotation process that is handled by Sales and Purchasing. The only difference here is that with Administration, things are viewed from a more financial perspective. When a new customer goes into business with MeMon, his/her information is obtained (either directly via the client, internet or other means) and stored in the Exact database. After completion, the Sales and Purchasing departments are notified, seeing as they require these records for further processing of the customer order. When the latter is in the stage of verification and authorization, there is a possibility that the customer has exceeded his or her credit limit. If this is indeed the case, Administration consults with Sales and/or the Board of Directors and then there are two possible outcomes: either permission is granted to increase the credit of the client in question in Exact's customer database and the order can continue its processing, or the order is temporarily put on hold until the customer has paid any existing, outstanding invoices. Next, goods required for the order need to be purchased. While Sales and Purchasing handle this, Administration is responsible for any subsequent payments resulting from this activity. When the invoice for acquisition is received, it is checked and data are stored in Exact, afterwards of which a list detailing all payments that need to be made currently are represented (a settlement only takes place after the Board of Directors has signed off on it). Upon completion of an order on behalf of the Sales and Purchasing departments, Administration handles the final and probably most important phase for the company; the customer billing process. First, documents detailing the order (i.e. the original offer/order, order confirmation and transport papers) are verified, as well as the shipping- and billing address of the client. Corrections are made where necessary and thereafter, everything is entered into Exact Globe in order to create and process the invoice. However, even here, complications may arise, primarily due to customers that do not make their payment in time. When this happens, Administration sends out a reminder to clients whose invoices are overdue, the latter of which can be verified using Exact.

The final use of the ERP software within this department does not necessarily relate to customer orders specifically, but more to MeMon's accounting system as a whole. Every day, a print out is made of all account mutations and is then manually inputted into Exact's banking book. As a result, an up-to-date overview of the company's financial performance is present at all times.

The different activities of the departments, along with their respective usage of Exact Globe, is graphically depicted in a flowchart (refer to figure 3). Here, a somewhat simplified impression is given that details the entire process when a new customer order is received (simplified in the sense that there are no anomalies such as bad credit or the client refusing the initial offer that is made). Also, connectors to the Exact Globe database are left out in order to maintain a clean overview.

1.3.3 “Which activities are related to the accounting system?”

As should have become apparent after the description in the previous section, the activities related to the accounting system are performed by the Administration department. Most of these are connected to the practice of handling a customer order and the inputting and processing of data with Exact Globe. However, the one that is related closest to pure accounting practices is of course the overall processing of mutations in MeMon’s bank accounts, resulting in a variety of different financial overviews of the company. A partial print of the Balance Sheet for 31 May, 2013 is given (refer to figure 4), as well as the Income Statement for the same date (refer to figure 5)³. From this, a number of different indicators of financial health can be derived. Listed below are those that in general, are most common to describe an organization’s overall performance in terms of finance. It should be noted however, that figures shown serve an illustrative purpose only; they are here to provide a quick glance at some of MeMon’s own business operations and/or activities. Consequently, the ratios themselves are not further utilized outside of this introductory chapter (the same applies to figures 4 and 5, the Balance Sheet and the Income Statement, respectively).

Debt/Equity Ratio

The debt/equity ratio compares a company’s total liabilities to its total shareholders’ equity. As a result, it serves as a measurement of how much suppliers, creditors, lenders etc. have committed to the organization versus what the shareholders have committed. A lower percentage means that a company is using less leverage and hence, has a stronger equity position (which is of course favorable).

From MeMon’s balance sheet, this ratio is:

$$\text{Debt/Equity Ratio} = \frac{\text{Total Liabilities}}{\text{Shareholders' Equity}} = \frac{1.862.396}{3.003.312} = 62,01\%$$

This percentage provides a general indication of a company’s equity-liability relationship and is especially helpful for (potential) investors that are looking to take a quick glance at the organization’s overall leverage. Generally speaking, large, well-established companies can push the liability component of their balance sheet structure to very high figures (audited fiscal year company data for 2012 even puts Jet Airways (India) at an astonishing ratio of 8426%). However, smaller organizations such as MeMon BV cannot command these levels of leverage. Still, there is no ideal figure as to what this ratio should be (and if the calculated 62,01% is considered to be good or bad); the industry as a whole needs to be assessed, as well as comparable businesses and even the strategy of the organization itself. Nevertheless, investors will prefer companies with a lower debt to equity ratio rather than their counterparts that have a higher figure, primarily because the latter can be interpreted as dealing with more risk.

³ For the full overview, refer to Appendix Attachment I.

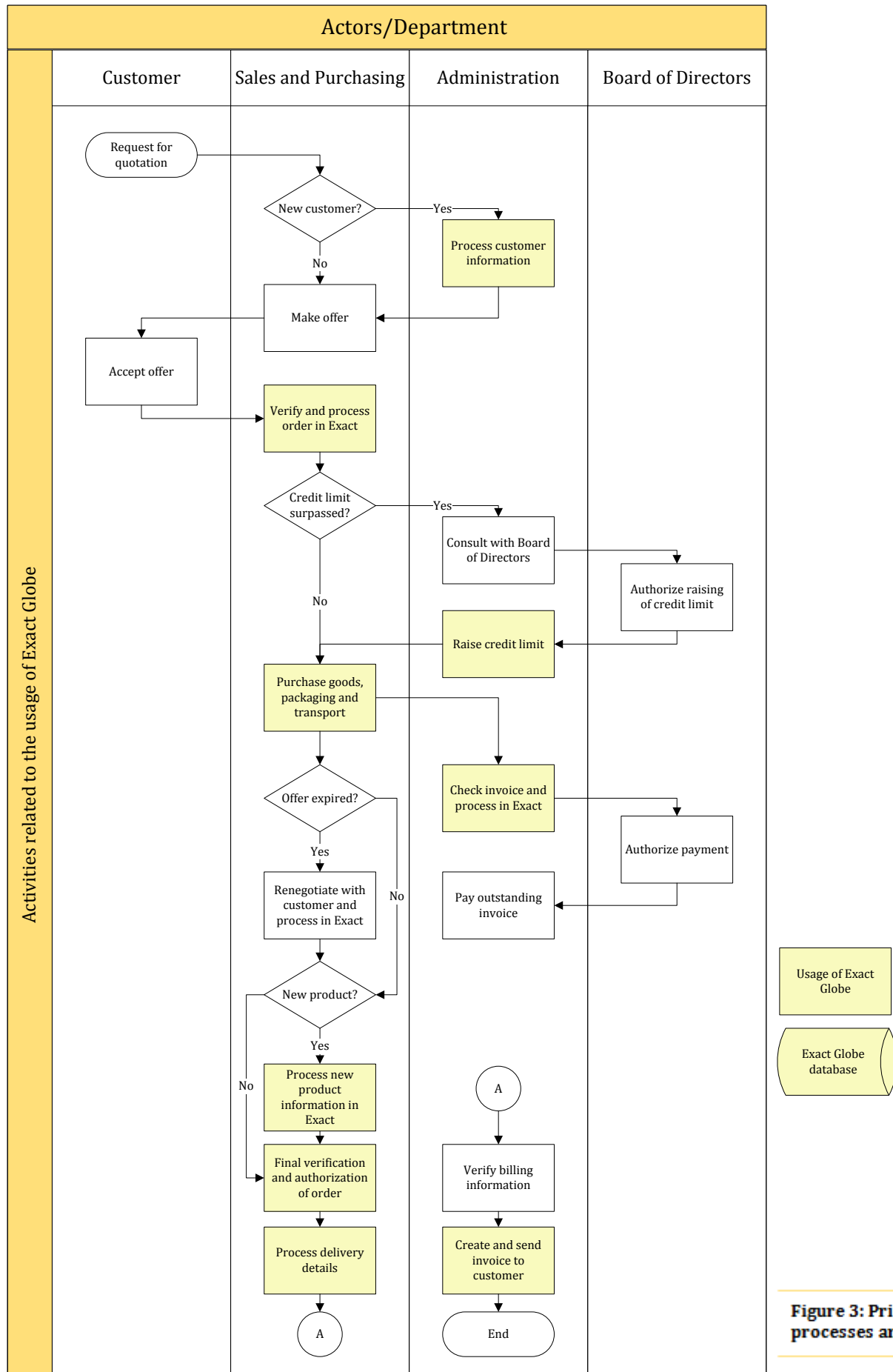


Figure 3: Primary business processes and activities

		Saldo 31 mei 2013	
		Debet	Credit
Activa-Balans			
Vaste Activa			
Financiële Vaste Activa			
0010 Deelneming Humiemo B.V.	341.963		
Totaal Financiële Vaste Activa	341.963		
Voorraden			
0400 Tussenrekening: Logistiek (SS	0		
0401 Productie: OHW	35.574		
3000 Voorraad handelsgoederen	261.903		
3100 Voorraad diensten derden			1.321
3900 Diverse voorraad incourant			3.928
Totaal Voorraden	292.229		
Totaal Vlottende Activa	6.129.322		
Totaal Activa-Balans	6.503.764		
Passiva-Balans			
Eigen vermogen			
Aandelenkapitaal			
0700 Aandelenkapitaal			1.418.063
0701 Aandelen in portefueille	1.077.728		
0702 Ingekochte aandelen	56.269		
Totaal Aandelenkapitaal			284.066
Reserves			
0710 Agio			1.388.631
0740 Wettelijke reserve			341.963
0830 Resultaat voorgaande jaren			988.652
Totaal Reserves			2.719.245
Totaal Eigen vermogen			3.003.312
Kort Vreemd Vermogen			
Crediteuren			
1600 Crediteuren			1.869.872
1601 Vooruitbetaling crediteuren	7.476		
Totaal Crediteuren			1.862.396
Totaal Kort Vreemd Vermogen			1.862.396
Totaal Passiva-Balans			4.865.708
Vorig jaar Onverwerkt Winst/verlies			981.092
Winstsaldo			656.963
Totaal Balans	6.503.764	6.503.764	

Figure 4: Partial Balance Sheet MeMon on 31 May 2013

Current Ratio

The current ratio is a popular indicator for a company's liquidity. It is calculated by dividing the current assets that are available by the current liabilities. The idea behind this ratio is to establish whether an organization's short-term assets (such as cash, cash equivalents, inventory, receivables, government bonds) are readily available to pay off its short-term liabilities (notes payable, accrued expenses, taxes etc.); the higher the ratio, the better (at least in theory).

From MeMon's balance sheet, this ratio is:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} = \frac{6.129.322}{1.862.396} = 329,11\%$$

As can be seen, this figure is quite high and indicates that MeMon has over three times as much assets available to pay off any current debts. However, as stated above, this is only theoretical; one should be wary of the misleading nature of the ratio. Even though the current ratio is a popular figure and extensively used in financial reporting, it is also flawed due to the fact that it is conceptually based on the liquidation of all of a company's current assets to meet all of its current liabilities. In reality, this is unlikely to occur, primarily because of the going concern principle⁴ that is generally used. In essence, it is about the time it actually takes a company to convert its working capital assets into cash to pay its current obligations that is the key to its liquidity and hence, the current ratio can be somewhat misleading.

Quick Ratio

The quick ratio is another liquidity indicator that actually further refines the aforementioned current ratio; it only takes into account the most liquid current assets a company has available to cover current liabilities. Hence, inventories (and if applicable, other current assets) which are more difficult to turn into cash are left out of the equation. Overall, a higher ratio means a more liquid current position.

From MeMon's balance sheet, this ratio is:

$$\text{Quick Ratio} = \frac{\text{Current Assets} - \text{Inventories}^5}{\text{Current Liabilities}} = \frac{6.129.322 - 292.299}{1.862.396} = 313,41\%$$

As stated, by putting an emphasis on the more-liquid assets of a company, the quick ratio is a more conservative measure of liquidity when compared to the current ratio. Also, putting the outcomes of the two side-by-side, it can be seen that the difference is minimal (the current ratio only being 15.7% higher). Now, what this means is that MeMon does not rely strongly on inventories as its main source of (current) assets. In fact, the company actually strives to keep inventories as low as possible, the idea behind it resulting from its main activities as a trading organization and hence, trying to only purchase goods and immediately selling and shipping them to customers when an order is placed, rather than buying and storing products in advance (with obvious advantages of course being savings on holding costs, storage space etc.). While considered to be more strict than the current ratio, the quick ratio still suffers from the same

⁴ Under this accounting principle, it is assumed that an enterprise is a going concern and will continue in operation for the foreseeable future. Hence, it is assumed that the enterprise has neither the intention nor the need to liquidate or curtail materially the scale of its operations (Sutton, 2004).

⁵ The numerator can also be written as Cash & Equivalents + Short-term Investments + Accounts Receivables. The simplification used here, however, is still a good representation of the ratio due to the elements of the more sophisticated formula having a minimal impact on the resulting outcome (also refer to Appendix Attachment I).

deficiencies as its narrow counterpart, albeit to a lesser extent. Hence, investors in particular need to be very careful with regard to the misleading aspects of both the current- and quick ratio.

Return on Equity

The Return on Equity indicates a company's profitability by comparing its net profit to its shareholders' equity. Hence, this ratio measures exactly how much the shareholders earned for their investment. Generally speaking, the higher the figure, the more efficient management is in utilizing its equity base and the better the return for the company's investors.

From MeMon's balance sheet and income statement, this ratio is:

$$\text{Return on Equity} = \frac{\text{Net Profit}}{\text{Shareholders' Equity}} = \frac{656.963}{3.003.312} = 21,87\%$$

Commonly used by investors, the return on equity ratio is an important measure of a company's earnings performance. As stated above, in a way, it tells them how effectively their money is being used. Even though there are variations as to what ratio is considered good (strongly dependent on the type of industry/sector the company operates), usually, a return on equity between the range of 15 to 20 percent is characterized by financial analyst as being an attractive investment opportunity. However, as is the case with the ratios discussed earlier, investors need to retain themselves from focusing on return on equity in isolation and instead, interpret the ratio in the context of a company's debt/equity relationship.

Net Profit Margin

The Net Profit Margin is basically the amount of profit (on a net income level) generated by the company as a percentage of the earnings that it has made from sales. Results can be used in conjunction with profit margin analyses (possible on other levels as well, such as gross profit, operating profit, pretax profit) in order to provide a comprehensive measure of a company's profitability for a set period of time (for instance, 3 to 5 years). Also, outcomes can then be compared to similar organizations and industry benchmarks. In essence, margin analyses are performed in order to detect any types of consistency and/or trends (be it positive or negative) in a company's earnings. To a large degree, it is both the quality and positive growth of the latter that is unmistakably tied to a financially healthy organization.

From MeMon's balance sheet and income statement, this ratio is:

$$\text{Net Profit Margin} = \frac{\text{Net Profit}}{\text{Net Sales (Revenue)}} = \frac{656.963}{9.806.715} = 6,70\%$$

When wanting to review a company's financial performance over a specific accounting period, income statements are readily available. However, what is important here is that investors need to understand that the numbers shown in this statement (i.e. revenues and expenses through both operating- and non-operating activities and the resulting profit/loss) are actually not as detailed and representative as one might expect. This is precisely why margin analyses have been developed; it can be used to discern a company's true profitability.

The net profit margin, combined with the profit margins on alternative levels, is key to achieving this.

		Saldo 31 mei 2013	
		Debet	Credit
Resultaten Rekening			
Baten			
Bijzondere baten			
9000 Buitengewone baten			12.683
9130 Rentebaten			2.704
9300 Valutaverschillen	5.734		
Totaal Bijzondere baten			9.653
Omzet regulier			
8000 Opbrengst verkopen			9.806.709
9420 Betalingsverschillen bij verkoop			7
Totaal Omzet regulier			9.806.715
Omzet overig			
8900 Overige opbrengsten (MSD)			20.874
Totaal Omzet overig			20.874
Totaal Baten			9.837.242
Directe kosten			
Kostprijs verkopen			
7000 Kostprijs verkopen	8.922.923		
7200 Prijsverschillen voorraad	155.802		
7210 Prijsverschillen diensten derden			224.083
9004 Productie: resultaten			5.970
9200 Rekenverschillen	800		
9410 Kortingen bij inkoop			2.750
Totaal Kostprijs verkopen	8.846.722		
Totaal Rentekosten	19		
Totaal Resultaten Rekening			656.963
Winstsaldo	656.963		
Totaal Winst & Verlies	656.963		656.963
Totaal Balans + Winst & Verlies	7.160.727		7.160.727

Figure 5: Partial Income Statement MeMon on 31 May 2013

Finally, having calculated all of the different financial ratios for MeMon, a comparison is made regarding overall figures that are present in the company's sector of operation (Agricultural Chemicals). Listed below (refer to table 1) are data that represent the sector's lowest, highest and average figures of the debt/equity ratio, current ratio, quick ratio, return on equity and net profit margin, respectively.

(numbers are in %)

Ratio	Rank	Lowest	Highest	Average	MeMon
Debt/Equity Ratio⁶		0,02	2858,55	89,88	62,01
Current Ratio⁷		110	350	217,50	329,11
Quick Ratio		80	240	150	313,41
Return on Equity		-236,56	214,39	21,90	21,87
Net Profit Margin		-262,49	41766,70	18,20	6,70

Table 1: Agricultural Chemicals Benchmark Figures

As can be seen, there are some figures that deviate tremendously from the mean and take on extreme values (like the highest net profit margin). However, the industry sector as a whole can be reliably measured by viewing the data present under the Average column. From this, it shows that on almost every aspect discussed in this section, MeMon performs better than a typical company in the agricultural chemicals sector; better values for debt/equity-, current- and quick ratio, return on equity is nearly identical to the mean and only the net profit margin is somewhat below average.

Overall, as stated before, although one should not solely focus blindly on the above figures to assess a company's financial performance, they can still be used as good indicators when taking into account relevant factors. Furthermore, they represent some of the tools that can be generated as a result from MeMon's current activities that are related to the accounting system.

1.4 Complications of the current situation

Now that the current situation has been analyzed in detail (with respect to both the overall usage of Exact Globe and the activities related to the accounting system of MeMon), the complications that are present in the existing methods and/or structure of working within the company need to be revealed. In order to accomplish this, detailed questionnaires have been formulated and are filled out by all of MeMon's employees in order to truly capture the problems that are currently present and that need to be addressed. Also, using this method of data gathering ensures a wider and more relevant scope of information that is obtained, seeing as interviewing only a select few (key) personnel may create a tunnel vision (for instance, the Sales department may be facing issues that are irrelevant for Administration and vice versa). Other advantages include the ease of comparing results and analysis of the data, its practical use and of course, it can all be done relatively fast (Ackroyd & Hugher, 1981).

⁶ Figures are obtained via Yahoo! Finance tool as of 18 July, 2013. The same applies to the Return on Equity and Net Profit Margin data.

⁷ Figures are based on mean data from four competitors over a period of four years (2009 – 2012) in the agricultural chemicals space: CF Industries Holdings, Potash Corporation of Saskatchewan, Agrium and The Mosaic Company. The same applies to the data for the Quick Ratio.

1.4.1 “What kind of problems are related to the usage of Exact Globe in its current state?”

Utilizing a questionnaire⁸ specifically tailored to current complications surrounding the use of Exact, the following results have been obtained by integrating the various answers that were given:

QUESTIONS

1. What are your primary activities that require the use and/or help of Exact? (short description of applications that are being utilized, specific tasks/functions, what kind of data or forms Exact provides etc.).

The main activities in need of Exact are related to the processing of a customer order. From beginning to end, usage ranges from inputting orders, purchasing and/or producing goods to be delivered, updating and consulting databases such as price, articles, all the way up to mandatory after-sales processing like the verification of delivery, customer payment and keeping a record regarding sales volume.

Data that are being output by Exact are related to forms that are required to continue the processing of a customer order; article information (price, quantity, composition etc.), transport information (price, route, delivery times, boarding- and shipping dates etc.), customer information (order history, billing details, creditworthiness etc.) and furthermore, its database can be searched for additional details when and where it is needed.

2. What are the complications that you run into when using Exact in its current state for daily activities and what are the possible causes? (are certain things missing, do certain things not function properly or perhaps not function at all etc.).

Complications are mostly related to Exact not doing what it is supposed to do; data are not being output correctly or are only displayed partially. Also, there are still a lot of necessary things that are simply missing; missing articles, missing prices, no automatic overview regarding up-to-date sales volume (in fact, there is no contract administration present at all, at least not to the extent that is desired within the company).

The primary cause is mentioned to be an incomplete implementation of Exact; a lot of the current issues can in fact be addressed by the ERP software itself, but it is simply not done yet. The latter is blamed on the fact that employees just do not know how it can be achieved (i.e. lack of knowledge regarding Exact Globe).

3. How are those complications currently being countered by you? (for instance, with the use of alternative applications such as Word, Excel or perhaps even by avoiding the use of Exact altogether when possible).

Whenever Exact does not function as it should, employees tend to find workarounds by utilizing alternative applications, the most popular ones being Microsoft Word and Microsoft Excel; in case data are missing (like the aforementioned prices or articles) and an order can no longer be processed using Exact, activities such as order verification and the purchase of transport is done without the use of the ERP software. Taking it one step further; there are even instances that information needs to be added manually by hand (i.e. written down by employees themselves) in order to achieve results that, in theory, should be easily obtainable via Exact.

⁸ The original, Dutch questionnaire, along with all of the filled out results can be found in Appendix Attachment II.

4. What would you like to see changed regarding Exact? (extra functionality that would facilitate your work-related activities, more information/data available after performing specific tasks such as the purchase of goods etc.).

Overall, employees of MeMon want Exact to run smoother; using it should be easy and nearly effortless, instead of having to put up with a lot of frustration and in the end, still not achieving the results that were needed.

Concrete changes that are desirable: being able to generate periodic overviews (performance/financial) easily, the addition of contract administration within Exact (i.e. if a customer has a contract with the company for X goods, the software should be able to display the Y amount that is delivered currently, the X-Y amount of the contract remaining etc., at any given time).

Furthermore, the following scores were obtained that portray the overall happiness of the employees regarding the current state of Exact Globe:

SCORES

1. To what extent do you utilize Exact for your daily activities? Give a score on a scale of (very low extent) 1 – 5 (very high extent).
2. How would you rate the difficulty surrounding the use of Exact to support your daily activities? Give a score on a scale of (very easy) 1 – 5 (very difficult).
3. To what extent is the use of Exact required and/or unavoidable for your daily activities? Give a score on a scale of (very low extent) 1 – 5 (very high extent).
4. On a scale of (very unsatisfied) 1 – 5 (very satisfied), how satisfied are you regarding the current state of Exact that is related to your own activities?

Results can be viewed below (refer to table 2):

Question	Score	Mean	Standard deviation
1.		3.50	1.41
2.		3.38	0.92
3.		3.50	1.41
4.		2.63	0.52

Table 2: Questionnaire scores

It should be noted that due to the relatively small number of participants (8 in total⁹), results are not deemed to be statistically significant. Still, the outcomes serve as a good indicator of the image that is present amongst the employees regarding Exact Globe. In table 2, both the mean and the standard deviation per question are displayed, the latter of which is a measurement of spread (generally speaking, the lower this particular value, the more reliable the data are). Now, the mean of question 4 is especially interesting, seeing as this value lies under 3 (= the “neutral” option). From this, it can be deducted that on average, employees are less than satisfied with the current state of the ERP system, which is in line with the results of the first part of the survey.

Finally, the questionnaire offered participants the opportunity to make any suggestions or comments/remarks that may have been overlooked:

COMMENTS/REMARKS

Do you have any extra suggestions and/or remarks that were not addressed in this questionnaire? Please feel free to leave them behind here.

“I think Exact has a lot of potential that is currently not being exploited by our organization. Personally, I believe that this is due to a lack of knowledge regarding the possibilities it offers”.

-E. Rijnsent, MeMon BV

“There is need for a more unambiguous way of working with regard to Exact”.

-R. van Noort, MeMon BV

Overall, the problems related to the usage of Exact Globe in its current state, together with their respective causes, can be summarized as follows (refer to table 3):

Problem	Details	Cause
Exact does not function properly	Partial and/or incorrect output of data	Lack of knowledge, incomplete implementation of Exact
Incomplete databases	Important information is missing or unobtainable	Incomplete implementation of Exact
Using Exact is counterproductive	Wasted time, added frustrations	Lack of knowledge regarding Exact’s possibilities

Table 3: Complications with Exact’s current state of implementation

1.4.2 “What kind of problems are related to the current state of the accounting system?”

From the previous section; utilizing the results of the questionnaire (both questions and scores), together with close collaboration with the Administration department, the following problems have been identified that are currently present in the accounting system and that need to be addressed:

⁹ Refer to Appendix Attachment II.

“Contract administration within Exact Globe is missing”
“Calculation of cost prices is performed inaccurately”

As mentioned briefly, in Exact’s existing state, there is no option to track the progress of specific customer contracts (even though it is part of the ERP software’s capabilities). From an accounting perspective, this is especially undesirable. To illustrate this, a simple example can be used: let us assume a customer places an order for 1.000 tons (a ton being the standard measuring size) of product X for a price Y per unit. As agreed upon in the contract, the total volume of goods will have to be bought and paid for by the client before the expiration date (for instance, if the duration of the contract specifies a time period of Jan – June, 2014, then the total amount of 1.000 tons needs to be completed before 1 July 2014). With no way of knowing the up-to-date status of the contract in question, a number of complications may be the result. Regarding accounting activities, there is the possibility of contract breach and the associated lack of payments made by the customer; if by May 2014 only 10 percent of the contract has been completed, it is very unlikely that the client has an honest intention of honoring the terms and purchasing the remaining 900 tons (especially if he/she is experiencing financial difficulties). If contract administration was present in Exact, scenarios like these could be easily prevented by, for instance, viewing the customer’s contract history, immediately notifying MeMon if the client is showing signs of abnormal behavior compared to past events and consequently, taking appropriate actions (for some customers, it may be normal to complete the majority of the contract near expiration while for others, it is a clear indicator of complications). All in all, the lack of contract administration in Exact and the potential issues that it gives rise to have a large impact on accounting activities; resources that need to be purchased, payment of invoices, the billing process of the customer and more are all jeopardized and needlessly complicated. Of course, this does not benefit the organization at all. Furthermore, with no possibility of checking the progress of running contracts, a lot of crucial data are missing. Simply put, a good oversight regarding contracts is just not present, the most relevant (from an accounting perspective) being unknown profit margins per transport, per customer etc. Currently, one has to manually create and update an overview, use third-party information (for instance, remaining contract volume as stated on invoices) instead of Exact and estimate profit margins. Of course, all of this (especially the latter) only increases the risk of errors and hence, compromising not only the accounting system, but the company as a whole.

The other complication, the inaccurate calculation of cost prices, is closely related to financial aspects such as the aforementioned profit margins. Currently, the company itself states that it does not know how to allocate specific costs to products. In essence, MeMon is a trading company. However, the total cost price of a product consists of a lot more than just the purchasing price of resources; transportation, packaging, production (i.e. customization that is performed in order to fit a product to a client’s preferences) are all taken into account as well. Now, a lot of these costs can fluctuate dramatically over time; transportation abroad can become more expensive due to new legislation, goods purchased internationally are influenced by currencies etc. In the existing state of the accounting system, although these types of scenarios are included and processed in the financial reports, MeMon itself is wary of the accuracy of what is done and the justification behind it. Overall, one should know what costs are taken into account for a specific product, why this is done and how the calculated cost price (should) react(s) to fluctuations of factors such as currency or transportation and consequently, the effect it has on resulting outcomes such as profit margin per product.

All of the above can be summarized as follows (refer to table 4):

Problem	Details	Cause
Contract administration within Exact Globe is missing	Wasted time, increased risk of errors from using estimates and third-party data	Lack of knowledge, incomplete implementation of Exact
Calculation of cost prices is performed inaccurately	Unreliable or unknown data regarding profit margins	Incomplete implementation of Exact, relying on estimates/no justification of calculations

Table 4: Complications with the current state of the accounting system

1.5 Research goals (sub-problems addressed)

Now that the complications that are present in the existing methods and/or structure of working within the company have been revealed (regarding both the overall usage of Exact Globe and the activities related to the accounting system of MeMon), the changes that need to be made have to be formulated. Again, the results from the questionnaire will be utilized in order to accomplish this. At the same time, a glimpse as to how to solve the core issue will be given by addressing the sub-problems that have been formulated earlier in this chapter (to the extent that is currently possible).

1.5.1 Improvements to the accounting system

Utilizing both the filled-out questionnaires and in close collaboration with the Administration department, the following changes/improvements need to be made (or at least, are very desirable according to the employees) regarding the overall activities related to the accounting system of the company (refer to table 5). Also, the results act as a preliminary answer to the first sub-problem (repeated below for convenience).

“How can the accounting system be improved?”

Problem	Improvement (goal)
Contract administration within Exact Globe is missing	Implement contract administration within Exact (“Raamcontracten”), re-design where necessary in order to generate overviews (i.e. specific profit margins, contract completion per customer) and no longer rely on estimates and/or third-party data
Calculation of cost prices is performed inaccurately	Justification behind cost price- and relevant calculations (profit margins), increase reliability

Table 5: Improvements regarding Exact’s current accounting system

In summary; the risk of errors and the unavailability of crucial data is relatively high due to the lack of contract administration within Exact. Also, important financial information such as profit margin per transport, profit margin per customer, etc. is currently being estimated, rather than being based on solid, accurate data. All of this can be improved by utilizing Exact’s ability to view the progress of running contracts via “Raamcontracten” and hence, the implementation of it is one of the primary goals regarding the transformation of the current accounting system of the

company. Furthermore, taking cost prices into account, MeMon wants to be able to calculate them accurately; the influence of price fluctuations of transportation costs, revaluing resources due to currency changes and more need to be truthfully portrayed in the cost price of a product, consequently resulting in profit margins that are a good representation of the company's financial performance.

1.5.2 Improvements to Exact Globe

From the filled-out questionnaires, the following changes/improvements need to be made (or at least, are very desirable according to the employees) regarding the general use and implementation of Exact Globe within the company (refer to table 6). Also, the results act as a preliminary answer to the third sub-problem (repeated below for convenience).

“What general adjustments need to be made to Exact Globe?”

Problem	Improvement (goal)
Exact does not function properly	Re-structuring Exact in a way that benefits employees and facilitates their daily activities, creating a more unambiguous way of working regarding the software
Incomplete databases	Implementing Exact throughout the entire company, making the use of alternative applications unnecessary or minimal
Using Exact is counterproductive	Re-structuring Exact in a way that benefits employees and facilitates their daily activities, creating a more unambiguous way of working regarding the software

Table 6: Improvements regarding Exact's current complications

In summary; people want Exact to do what it was intended to do. A lot of the current problems are related to the software not facilitating tasks, but rather complicating them due to either missing data or a lack of functionality. The main goal regarding transforming the current state of Exact Globe is a true and more helpful implementation of the ERP software throughout the entire company; a lot of the issues that need to be solved (such as missing information regarding prices, articles) are well within the capabilities of Exact, but it just is not done yet. Simply put; Exact is not being utilized to its full extent, leaving behind a multitude of improvements that are possible. As a starting point, the software needs to be re-designed where necessary and afterwards, re-implemented within the company. Furthermore, employees need to learn to take full advantage of it, rather than avoiding it due to a lack of knowledge and/or added drawbacks when using Exact inefficiently.

CHAPTER SUMMARY

Back in 2007, MeMon BV purchased the Enterprise Resource Planning (ERP) software “Exact Globe”. It was then introduced within the company with the intention to facilitate the daily tasks of employees. Currently, however, it is not entirely implemented successfully into the organization, resulting in added disadvantages rather than pure benefits when using the software. The main focus throughout the research will be improving the existing state of Exact Globe, together with the development of the company’s current accounting system in light of both contract administration and cost price calculations (and the resulting outcomes such as profit margins).

Regarding the accounting system; the complications related to its present state, as well as the desired improvements, can be described as follows (refer to table 5):

Problem	Improvement (goal)
Contract administration within Exact Globe is missing	Implement contract administration within Exact (“Raamcontracten”), re-design where necessary in order to generate overviews (i.e. specific profit margins, contract completion per customer) and no longer rely on estimates and/or third-party data
Calculation of cost prices is performed inaccurately	Justification behind cost price- and relevant calculations (profit margins), increase reliability

Table 5 (copied from p. 19): Improvements regarding Exact’s current accounting system

The lack of contract administration in Exact leads to wasted time and an increased risk of errors from having to use estimates and third-party data, rather than being able to rely on the ERP software itself. Also, current cost price calculations are of questionable quality. Consequently, resulting data such as profit margins are not entirely reliable either.

Regarding the ERP software; the complications related to its present state, as well as the desired improvements, can be described as follows (refer to table 6):

Problem	Improvement (goal)
Exact does not function properly	Re-structuring Exact in a way that benefits employees and facilitates their daily activities, creating a more unambiguous way of working regarding the software
Incomplete databases	Implementing Exact throughout the entire company, making the use of alternative applications unnecessary or minimal
Using Exact is counterproductive	Re-structuring Exact in a way that benefits employees and facilitates their daily activities, creating a more unambiguous way of working regarding the software

Table 6 (copied from p. 20): Improvements regarding Exact’s current complications

Complications are mostly related to Exact not doing what it is supposed to do; data are not being output correctly or are only displayed partially. Also, there are still a lot of necessary things that are simply missing, consequently hindering employees from completing their duties.

CHAPTER 2: Literature Overview

This chapter details the literature that will be used throughout this research. To start off, a review of relevant theory is given related to ways of successful implementing Enterprise Resource Planning software and the accounting practices surrounding cost price calculations. Afterwards, a comparison is made between similar organizations in order to see their practices regarding the aforementioned subjects, which will then serve as case studies.

2.1 Review of relevant theory

This section is dedicated to the discussion of theory that is related to the research performed at MeMon. A further distinction is made for relevance regarding the ERP- and the accounting system of the company.

2.1.1 Literature surrounding ERP software implementation

It should come as no surprise that Enterprise Resource Planning systems are highly complex. Consequently, its implementation is difficult, costly and it places a heavy burden on corporate time and/or resources. However, even when one is aware of all of this, to this day, many ERP implementations have failed (or are failing) due to not accomplishing (pre-determined) company goals. This sub-section is related to discussing on how to prevent a scenario such as the latter; relevant factors, the overall procedure during (and after) implementation etc. all play a key-role in achieving a successful and lasting implementation that truly benefits an organization. Of course, for MeMon, it is not the case that an entirely new ERP system will be implemented. Rather, its existing one will be improved throughout this research. Hence, the literature discussed will act as a means to ensure that the advancements made will be successful and also lasting for future years to come. Consequently, a preliminary answer to the second sub-problem (repeated below for convenience) will be addressed implicitly.

“How can the improvements of the accounting system be successfully implemented?”

Importance of ERP

The business environment is constantly changing. Nowadays, companies face the challenge of increasing competition, expanding markets, rising customer expectations and more. Of course, all of this puts extra pressure on a company; in order to keep up, one has to lower total costs in the entire supply chain, shorten throughput times, minimize inventories, expand product assortment, provide top-of-the-line customer services, improve quality, and efficiently coordinate global demand, supply and production. In essence, in order to remain competitive, an organization must improve their own business practices and/or activities; functions within the company must upgrade their capabilities of timely and accurate information generation- and communication. Furthermore, companies need to increasingly share their once aggressively protected in-house-information with third parties such as suppliers, distributors and customers (Loizos, 1998). In order to accomplish these objectives, organizations are increasingly turning to Enterprise Resource Planning software packages. Compared to a company without an integrated departmental system, ERP provides both a unified view of the business that encompasses all functions and departments and an enterprise database where all of the business transactions are input, recorded, processed, monitored and reported (Dillon, 1999). This unified view however, does increase the requirement for –and the extent of– interdepartmental cooperation and coordination; a thing that is not always taken into account by companies, resulting in the aforementioned failure of successfully implementing an ERP system.

ERP functionality

An Enterprise Resource Planning system can be used in any company that wants to enhance its competitiveness through effective utilization of all available assets, including information (Ptak & Schragenheim, 2000). Because of this, it appears to be a dream come true, especially for managers who have struggled with incompatible information systems and inconsistent operating practices. The many functions supported by ERP, categorized by department, are listed below (refer to table 7):

Department	Functionality	
Financials	Accounts receivable Asset accounting Cash management and forecasting Executive information system Financial consolidation Profit-center accounting Standard costing	Accounts payable Cost-element accounting Cost-cent accounting General ledger Product-cost accounting Profitability analysis Period-related costing
Human Resources	Human-resource time accounting Travel expenses	Payroll Personnel planning
Operations & Logistics	Inventory management Materials management Plant maintenance Shipping Vendor evaluation	Production planning Project management Purchasing Quality management Routing management
Marketing & Sales	Order management Pricing	Sales management Sales planning

Table 7: The scope of an ERP system (Dillon, 1999)

A successful ERP system can cut operating costs, generate more accurate demand forecasts, speed production cycles and enhance customer services; all of which benefit a company greatly and save a lot of money and/or resources over the long run. Other advantages include improved cash management, reduction in personnel requirements and a reduction in overall information technology costs by eliminating redundant information- and computer systems (Loizos, 1998; Stein, 1999). Taking all of this into account, it comes as no surprise that business organizations are purchasing and implementing ERP software packages into their companies at an increasing rate.

ERP implementation: critical factors

The implementation of an Enterprise Resource Planning system is not without risk or expenses. In fact, studies have shown that up to 65 percent of company executives actually believe that there might even be a moderate chance of an ERP system hurting their businesses, instead of helping and/or benefiting the organization as a whole (Cliffe, 1999). This kind of thinking is caused by the potential for implementation problems and hence, it is of great importance to examine the factors that determine whether or not an implementation will be successful. Throughout the literature, numerous authors have identified a variety of factors that can be considered to be critical to the success of the latter, the most prominent of which are mentioned and discussed here:

Clear understanding of strategic goals

The implementation of an ERP system requires that key personnel throughout the organization create both a clear and compelling vision of how the company should operate in order to accomplish various goals; customer satisfaction, the empowerment of its own employees and supplier facilitation over the short-run (i.e. the next 3-5 years), to name a few. Furthermore, clear definitions need to be present, not only regarding the aforementioned goals, but also for expectations and deliverables. Finally, the organization needs to carefully formulate exactly why the Enterprise Resource Planning system is being implemented in the first place and what critical business needs it will address (Krupp, 1998; Latamore, 1999; Schragenheim, 2000; Travis, 1999).

Commitment by top management

In order to achieve successful implementations, strong leadership is required, as well as commitment and participation by the top management of a company (Davis & Wilder, 1998; Sherrard, 1998). Also, seeing as executive level input is critical when analyzing and rethinking existing business processes, a team should be created (i.e. a management planning committee) specifically dedicated to enterprise integration, that understands the ERP, fully supports the costs and overall, guides the entire organization throughout the implementation project.

Excellent project management

Excellent project management refers to the organization engaging in a variety of crucial tasks; a clear definition of the ERP implementation objectives, the development of both a work- and resource plan and also, precise tracking of the current status/progress of the project in its entirety. Furthermore, a sense of urgency must be created through the establishment of aggressive, yet achievable schedules (Laughlin, 1999).

Both a clear definition of project objectives and a well-formulated plan of action will help an organization avoid scope creep¹⁰, in turn countering issues such as strain on the ERP budget, jeopardy of project progress and complications of the implementation in general (Davis & Wilder, 1998; Laughlin, 1999). Finally, the project scope must be clearly defined at the outset and should include identification of the modules selected for implementation, as well as the affected business processes.

Organizational change management

More often than not, both the existing organizational structure and processes present in most companies are incompatible with the structure, tools and types of information provided by Enterprise Resource Planning systems; even the most advanced and updated version of the latter usually imposes its own logic on a company's strategy, organization and culture. As a result, implementing an ERP system may require reengineering of key business processes and/or the development of new ones in order to support the organization's goals (Minahan, 1998). In turn, redesigned/new processes require corresponding realignment in organizational control in order to truly sustain the effectiveness of the reengineering efforts that were made in the first place. Although this realignment typically impacts most functional areas and even many social systems within a company (i.e. organizational structure, policies, processes, employees), unfortunately, many chief executives still see ERP as being a software system and consequently, only view its implementation from a pure technological-challenging perspective. Now, the danger that lies with doing so is that the possibility of ERP fundamentally changing the way in which the organization operates is completely being overlooked, which is exactly one of the problematic issues that current Enterprise Resource Planning systems are facing. In essence, the ultimate goal is not to implement the software itself, but to improve the business as a whole (Minahan, 1998).

¹⁰ Scope creep (also known as requirement creep and feature creep) in project management refers to uncontrolled changes or continuous growth in a project's scope. This phenomenon can occur when the scope of a project is not properly defined, documented, or controlled and generally, it is considered to be harmful.

It should be clear that ERP implementations may affect corporate culture drastically. If personnel are not properly prepared for these imminent modifications, chaos, denial and an overall resistance to change may be the result. However, if proper, organizational change management techniques are applied, a company and its employees should be prepared to embrace the new opportunities and possibilities offered by the system, rather than fighting it (Sherrard, 1998).

A great implementation team

An implementation team is crucial for performing a number of different tasks; it is responsible for creating the initial, detailed project plan/overall schedule, assigning responsibilities for various activities and determining due dates. Also, the team ensures that any necessary resources are available whenever they are needed. Furthermore, the ERP implementation team itself should be composed of people who are selected based on their skills, past accomplishments, reputation and flexibility, in order to guarantee the best panel possible. Of course, constant communication between the team and management is of great importance, as well as the latter enabling empowered, rapid decision making (Davis & Wilder, 1998; Laughlin, 1999; Minahan, 1998; Sherrard, 1998).

Data accuracy

Data accuracy is an absolute necessity in order for an ERP system to function properly. Due to the integrated nature of Enterprise Resource Planning, wrong input of data may cause a negative domino effect throughout the entire organization. Hence, educating users on both the importance of data accuracy and its correct entry procedures should be top priorities in ERP implementation (Stedman, 1999; Stein, 1999).

Furthermore, an ERP system requires that the entire company must work within the system, not around it. In order to accomplish this, employees need to be convinced that the organization is truly committed to utilizing the new system, that it will adopt to the new system entirely and more importantly, that the use of the old system is discontinued. To reinforce this commitment, all old and informal systems need to be eliminated. The reasoning behind this is because if the organization continues to run multiple systems in parallel, it will only encourage employees to continue using the old systems, rather than fully transitioning to the new ones (Hutchkins, 1998).

Extensive education and training

Because user understanding and buy-in is essential, education and/or training is probably the most widely recognized critical success factor. The implementation of an Enterprise Resource Planning system requires an extensive amount of knowledge to enable people to solve problems within its framework. If such an understanding is lacking, they will invent their own processes utilizing those parts of the system they are able to manipulate (Hutchkins, 1998; Laughlin, 1999; Ptak & Schragenheim, 2000; Sherrard, 1998).

Until end-users are utilizing the new system properly, the full benefits of ERP cannot be realized. To ensure the success of training, it should start as early as before the actual implementation of the new Enterprise Resource Planning system. Executives often underestimate, even to a dramatic extent, both the level of education and training necessary to implement an ERP, as well as the associated costs. Top management must be fully committed to creating an adequate budget in which costs of education and end-user training are both incorporated. In fact, it has been suggested that reserving an amount of 10-15 percent of the total ERP implementation budget for training and educational purposes results in an 80 percent chance of implementation success (McCaskey & Okrent, 1999; Volwer, 1999).

All too often, employees are expected to be able to effectively utilize a new system based solely on education and training. However, one should take into account that much of the learning process actually comes from hands-on use under normal operating conditions. Hence, it is required to have a designated individual, preferably the project leader, who maintains ongoing

contact with all of the system users. Doing so enables not only the monitoring of the use of the new system, but it also brings any complications that people are facing to attention. Furthermore, post-implementation is needed; periodic meetings can help identify problems with the ERP and encourage the exchange of information gained through experience and increasing familiarity with the system (Krupp, 1998).

Focused performance measures

Performance measures that assess the impact of the new system must be carefully constructed. Of course, these measures should indicate how the system is performing but at the same time, they also need to be designed in such a way as to encourage the desired behaviors by all functions and individuals. Examples include on-time deliveries, inventory turns, gross-profit margin, vendor performance etc.

It is important that project evaluation measures are included from the very beginning. If system implementation is not tied to compensation, it will not be successful; if managers still get their bonuses next year, even if implementation of the system did not occur, its success is also less likely. Management, vendors, the implementation team and users must all share a clear understanding of the goal. If someone is unable to accomplish agreed-upon objectives, they should either receive the needed assistance or be replaced. When teams reach their assigned goals, rewards should be presented in a very visible way. The project must be closely monitored until the implementation is complete. Afterwards, the system itself must then be forever measured and monitored as well (Hutchkins, 1998).

Management and other employees of a company often assume that performance will begin to improve the moment the ERP system becomes operational. In reality, however, due to the complexity and difficulty of mastering the new system, organizations should in fact be prepared for the possibility of an initial decline in overall performance. As familiarity with the new Enterprise Resource Planning system increases, so will productivity. From this, it follows that realistic expectations regarding company performance and time frames must be clearly communicated (Langenwalter, 2000; Oden, Langenwalter & Lucier, 1993).

Multi-site issues

Multi-site implementations present special concerns and the manner in which these are addressed may play a large role in the ultimate success or failure of the Enterprise Resource Planning implementation. The desired degree of individual site autonomy may be a critical issue, dependant on two factors: on one hand, there is the degree of process and product consistency across the remote sites while on the other, the need and/or desire for centralized control over information, system setup and usage is taken into account. An increase regarding the degree of central control may be one of the objectives of an ERP implementation, which can be achieved through introducing standardized processes. Alternatively, a different aim can lie in the implementation of the new system to provide the remote sites with capabilities that allow them to fine tune their processes to their unique situations.

The degree to which the organizational culture differs between sites is another complexity in dealing with multi-site implementations, the fundamental issue being the conflict between corporate standardization and local optimization. While the former brings simplified interfaces amongst diverse parts of the organization, the ability to move people and products between sites with minimal disruption and a relative ease of data consolidation across the entire organization, the latter may result in more effective and efficient operation and hence, might reduce costs.

The question of cutover strategy is perhaps the most difficult decision that needs to be made when dealing with a multi-site implementation. The organization must make a choice between either an approach where implementation takes place simultaneously in all facilities, or a phased approach (for instance by module, product line or by plant) combined with a pilot implementation starting at one site. Although a simultaneous implementation has the advantage of quickly recouping initial investments (i.e. the cash outlay for software, hardware, the project team etc.), the phased approach is generally considered to be preferable. This is primarily due to the fact that the success or failure experienced in the first attempt at implementation often

decides the fate of the entire project. Hence, the management team can gain momentum by selecting a pilot facility that has a high probability of success. Furthermore, when installing ERP via a phased approach, be it module by module, department by department or plant by plant, the lessons learned at early sites can make the implementations at later ones go smoother (Allen, 1997).

In summary, the factors critical to the success of an Enterprise Resource Planning system implementation are (refer to table 8):

Factor	Description
Clear understanding of strategic goals	Key personnel throughout the organization need to create both a clear and compelling vision of how the company should operate in order to accomplish various goals.
Commitment by top management	Strong leadership is required, as well as the full support and participation by the top management of a company.
Excellent project management	Clear definition of the ERP implementation objectives, the development of both a work- and resource plan and also, precise tracking of the current status/progress of the project in its entirety.
Organizational change management	Reengineering of key business processes and/or the development of new ones in order to support the organization's goals.
A great implementation team	A team responsible for creating the initial, detailed project plan/overall schedule, assigning responsibilities for various activities and determining due dates.
Data accuracy	Educate users on both the importance of data accuracy and its correct entry procedures.
Extensive education and training	Until end-users are utilizing the new system properly, the full benefits of ERP cannot be realized. An extensive amount of knowledge is required in order to enable people to solve problems within its framework.
Focused performance measures	Measures should indicate how the system is performing but at the same time, they also need to be designed in such a way as to encourage the desired behaviors by all functions and individuals.
Multi-site issues	Careful selection of approach: either an approach where implementation takes place simultaneously in all facilities, or a phased approach.

Table 8: Critical factors for a successful ERP implementation

Implementation steps

Even though ERP systems can be very complex and difficult to implement, it can be greatly facilitated through the use of a disciplined, structured approach. The following is a list of recommended steps to achieve successful implementation and is the result of integration between several works (Langenwalter, 2000; Oden & Langenwalter, 1993; Ptak, 1999; Ptak & Schragenheim, 2000). However, as stated at the beginning of this chapter, for MeMon, it is not the case that an entirely new ERP system will be implemented. Rather, its existing one will be improved throughout this research. Consequently, the first few steps (1 – 3) are not applicable, since these relate solely to the initial activities of selecting and introducing a new Enterprise Resource Planning software. For completion purposes however, they are included nonetheless.

STEPS (1 – 11)

(1). *(Review the pre-implementation process to date).*

The system selection process (i.e. “which ERP system do we want to implement in our organization”) needs to be completed satisfactorily. Furthermore, all factors critical to implementation success should be in place.

(2). *(Install and test any new hardware).*

It is essential that the hardware is both reliable and running as expected, before attempting to install any software.

(3). *(Install the software and perform the computer room pilot).*

Install the software and run a few tests in order to ensure that everything runs correctly. Often performed by a third party (i.e. the technical support from the software supplier).

4. Attend system training.

Users need to familiarize themselves with the keystrokes and transactions required to operate the system. Can be taught through extensive software training.

5. Train on the conference room pilot.

Through the use of a test environment, the business processes are taken from the very beginning (the receipt of a customer order) to the very end (the shipping of a customer order). This conference room pilot both exercises the systems and tests the users’ understanding of the new ERP software.

6. Establish security and necessary permissions.

During the conference room pilot but after the initial training phase has finished, security- and permission settings need to be put in place in order to ensure that each individual has access to the information he/she requires.

7. Ensure that all data bridges are sufficiently robust and the data are sufficiently accurate.

In order for people to start trusting the new system, data from the old system need to be brought across sufficiently accurate.

8. Document policies and procedures.

The policy statement is a statement that details what is intended to be accomplished. The procedures are the actual steps performed in order to do so (and may be represented in flowchart-format).

9. Bring the entire organization online, either in a total cutover or in a phased approach.

In a total cutover approach, the whole company is eventually brought onto the new system. With a phased approach, however, modules/plants/products are brought online in sequence. This approach may allow for improvements to be made during the implementation (i.e. after the first module/plant/product is live, procedures may be refined and/or adjusted before the remaining modules/plants/products are implemented).

10. Celebrate.

Actually a very important step. The company has just completed a major project and celebration serves as a recognition of it. Also, it demonstrates the importance of the project to the organization.

11. Improve continually.

Given a finite time period, an organization can only absorb a limited amount of change. Successful companies realize that change, however, is an ongoing process and hence, they need to encourage their employees to utilize the system to continue to improve.

Why implementations fail

Despite everything that has been covered up until this point, there are still plenty of scenarios where the implementation of a new ERP fails. The top three reasons for this, as stated by managers themselves¹¹, are poor planning and/or poor management, change in business goals during the project and a lack of business management support, respectively. Moreover, in many instances where an implementation project is completed, the technology is still deployed in a vacuum and consequently, users resist it (Davis & Wilder, 1998).

Based on the concepts described in this section, the reasons for failure can be categorized as not meeting one (or more) of the critical factors mentioned earlier, or due to technical difficulties such as software bugs, hardware complications, problems interfacing with existing systems etc.

2.1.2 Literature surrounding accounting practices (cost prices)

To fully understand the meaning of “cost price”, an analysis is needed regarding the components and/or different elements it is comprised of. This section is dedicated to doing precisely that; utilizing findings from literature in order to deduce the “proper” method of calculating the cost price of a product in an organizational environment such as MeMon.

The model shown is constructed by using the results from theory (refer to figure 6), followed by a detailed description of each individual part (Sandretto, 1986).

¹¹ Results are gathered through a survey performed by Information Week 30 (November), 1998. Questions were asked directly to IT managers in charge.

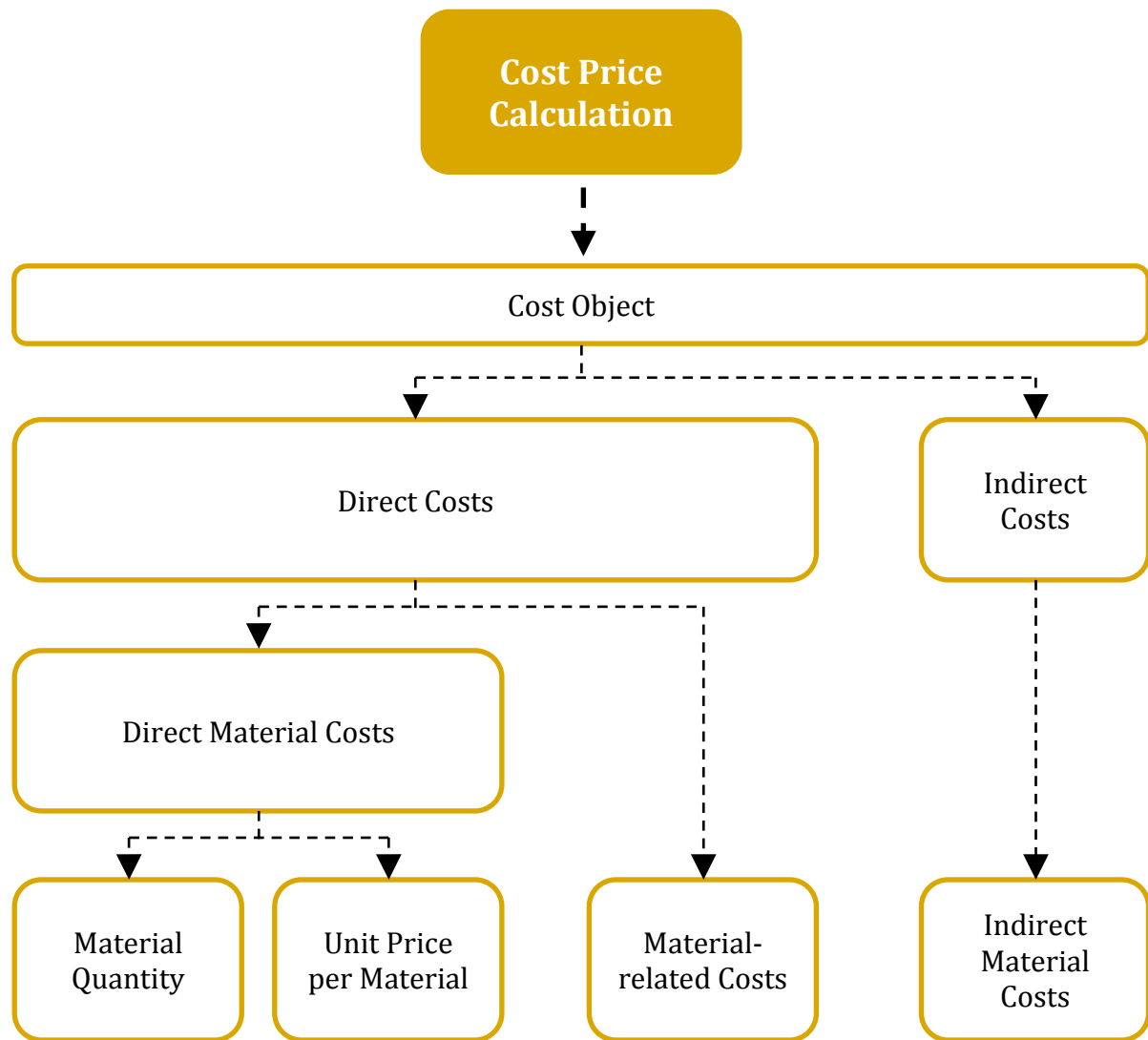


Figure 6: Framework of cost price calculation

Cost Object

To start off, a cost object is viewed; by definition, this is a product, contract, project, organizational subdivision, function or other unit for which costs are measured or estimated.

Next, this object is further divided into two sections: direct- and indirect costs.

Cost Object: Direct Costs

Any cost that can be specifically attributed to the creation of a final product (i.e. the cost object). It is further split into the following elements:

Direct Costs: Direct Material Costs

Direct material costs is a term that in practice, literature and litigation, has a wide variety of meanings. Unless the intended meaning in a given context is very clear, it is not uncommon to result in either confusion or misunderstandings. For this framework, a conceptual definition of direct material cost is provided that, in the absence of a specified alternative, should be taken as the meaning of the aforementioned term. To make the conceptual definition more concrete, a description is given regarding how direct material costs should be measured.

The following two aspects should be taken into account, which will be discussed in more detail next (Sandretto, 1986):

- The quantity of material that is to be included as direct material; that is, the inputs that are to be counted.
- The unit price by which each of these quantities is multiplied to arrive at a monetary cost.

Direct Material Costs: Material Quantity

For the definition of material quantity; it is formulated as the physical amount needed of specific materials, such as a pound of copper, a batch of 100 conductors, a 50-gallon drum of a chemical and so on.

Direct Material Costs: Unit Price per Material

Regarding the unit price of direct material; it includes the invoice price and acquisition-related cost items that can be specifically identified with direct material quantities in an economically feasible manner and that can be measured with reasonable accuracy. For a comprehensive overview, the following costs are included when one wants to depict the unit price of direct material:

- Invoice price for direct material quantity
- Invoice price for outside processing
- Shipping costs (inward freight) paid or owed to outside vendors
- Sales tax
- Duty
- Cost of delivery containers and pallets, net of return refunds

Also, when applicable, trade discounts, refunds and rebates should be deducted in calculating the unit price of direct material.

Direct Costs: Material-related Costs

Material-related Costs is the other part that, together with Direct Material Costs, comprise the overlapping element of Direct Costs. Other than direct material costs, material-related costs are expenses incurred as a result of the acquisition, inspection, storage or movement of direct material quantities. In essence, material-related costs are defined as being closely related to the quantity of materials acquired or used, but they cannot be specifically identified with a cost object in an economically feasible manner. Usually, the costs of the following functions are considered to be good examples¹²:

- Purchasing
- Receiving
- Receiving inspection
- Material storage costs prior to purchased material entering production
- Issuing costs for material initially entering the production process

¹² It should be noted that the original literature reference used views the material-related costs from a pure resource procurement perspective (i.e. extra expenses incurred by the company when completing the products to be delivered to the client). For this research however, these costs are more closely related to activities further along the order process; that is, after the goods have been finished and are ready to be transported to the respective customer (in MeMon's terminology, examples include legal documentation, required stamps and the likes).

Cost Object: Indirect Costs

The other side of a cost object consists of Indirect Costs. By definition, the latter is regarded as any cost that cannot be traced directly to the making of the final product, but is still necessary for the company to run. In turn, it is further refined into the following:

Indirect Costs: Indirect Material Costs

Often consumables such as cleaning chemicals, disposable tools, protective devices, indirect materials are not utilized as raw materials (i.e. they are not part of the finished product), but they make the production of the cost object (be it a good or service) either possible, more efficient, or safer. Consequently, the costs related to them are not readily identifiable with a specific product or job. In turn, these expenses are termed indirect costs and are charged to overhead accounts, the latter of which includes fixed costs such as rent, gas, electricity etc. (all of them which are deemed indirect material costs as well, respectively).

Finally, although not explicitly present in the framework of cost price calculation depicted in figure 6, another important consideration is the use of estimates; estimates of direct material quantities and/or unit prices may be utilized if they are sufficiently accurate to be considered “specifically identified” with a cost object. To illustrate whether or not the aforementioned condition is met, the following situations are stated in which estimates are in fact deemed sufficiently truthful to be considered direct material costs in most instances:

- A scenario in which a manufacturing firm establishes standard material quantities for its products, but its system does not trace variances to these goods. Nevertheless, there is a reasonable expectation that variances are proportional to the standard quantities and thus that the actual material quantities are proportional to these standard quantities.
- A scenario in which inward freight costs are added to direct material cost by a rate that approximates the actual cost, such as a percentage of price paid to the vendor or a percentage of the weight per unit of cost.
- A scenario in which a manufacturing firm uses standard purchase prices for its materials. Although standard purchase prices are not necessarily the same as actual purchase prices, the firm is able to associate major deviations from the former with specific products or product lines.

2.2 Case study

Having discussed the literature relevant for both successful ERP implementations and practices surrounding cost price calculation, a case study will be addressed that serves as an exemplary model as to how the theory regarding the former can be applied in practice. Due to the nature of the literature surrounding cost prices (i.e. the framework given in the previous section) and due to the fact that detailed product information (e.g. costs, profit margin) are strict company secrets, no case study could be obtained regarding cost price calculation. Nevertheless, the framework itself has already been tailored to fit MeMon’s specific organizational environment (where applicable) and its use is discussed in detail in the upcoming chapter: Operationalization.

ERP implementation at Huck International, Inc

Huck International, Inc. successfully implemented an ERP system during 1998 and 1999. This case study is a description of their implementation, including an indication of the degree to which they adhered to the critical success factors and implementation procedures described in the previous section (Umble et al, 2003).

About Huck International, Inc

Huck International, Inc. designs, manufactures and distributes a wide range of proprietary commercial-, industrial- and aerospace fastening systems. At the start of the ERP implementation, Huck was comprised of three aerospace fastener plants, two industrial fastener plants, one installation tool manufacturing plant, corporate headquarters and lastly, five international sales- and distribution sites. Regarding the latter, one of the sites also manufactured aerospace fasteners, while another produced industrial fasteners. During the implementation, acquisitions and consolidations significantly changed the company structure; the original twelve sites were consolidated to ten, and an additional ten were added through acquisition.

The legacy system at all of Huck's North American and European sites was CA/ManMan, a classic mini-computer based MRP II system¹³. Although the latter was ancient by IT standards, Huck had implemented an extensive local area network. Most users accessed the main computer through the network and were familiar with windows-based applications. Also, network-based information sharing was widely used by most key personnel.

Critical ERP implementation factors: Huck International, Inc

As stated, throughout literature, a variety of factors have been identified that are deemed crucial to the success of an ERP implementation. Here, it is discussed whether or not Huck has adhered to these criteria and if so, to what extent. Results are shown in table 9. For a complete breakdown of the case study, refer to Appendix Attachment III.

Summary & Post-implementation

From table 9, it can be seen that Huck International did take every factor relevant for a successful ERP implementation into account (albeit some to a more satisfactory level than others).

Now, it is important to examine whether or not doing what Huck has done has yielded positive results, the primary goal of course being the accomplishment of a successful implementation of the new ERP system. From literature, an ERP implementation is considered to be a success if it either achieves a substantial proportion of its potential benefits such as decreased cost of information technology, personnel reductions, better inventory control (Davenport, 1998; Oden et al, 1993), or, if the system achieves the level of Return on Investment (ROI) identified in the project approval phase (Ptak & Schragenheim, 2000). For Huck, the former applies; there is evidence that labor savings and increased profitability have been accomplished subsequent to the implementation. Also, a significant and somewhat unexpected enhancement was in the area of inventory control. However, the non-financial improvements are probably the most noteworthy; the company is now positioned to continue to grow and to pursue new partnership opportunities that would not have been possible using the old information system technology. Despite all the benefits that have already been accomplished, it is important to also look at the effects that the employees themselves are experiencing. Using a post-implementation audit, conducted ten months after the "go-live" date, the following key results have been obtained. First, the majority of the people felt that the implementation process was not over. The general belief was that there was still much to be learned about how to use the new system. Furthermore, effective communication was a major issue throughout the plant. Most employees felt that the new ERP had great potential, but many also found it either necessary or convenient

¹³ Manufacturing Resource Planning (MRP II) is defined as a method for the effective planning of all resources of a manufacturing company. Ideally, it addresses operational planning in units, financial planning and even has a simulation capability to answer "what-if" questions and extensions of closed-loop Materials Requirements Planning (MRP). Furthermore, this is not exclusively a software function. Instead, it focuses on managing people skills, dedication to database accuracy and computer resources. Overall, it is a total company management concept for using human resources more productively.

to go around the system. Doing so caused a domino effect of poor information flows throughout the entire company.

As a result, a number of employees recommended stricter controls and discipline for personnel that do not use the system properly. Finally, despite the fact that the majority of the employees stated that they were comfortable with their knowledge of the new system, the most frequent suggestion for improvement within their functional area was still additional training, again also tailored to countering the phenomenon of people developing numerous effective, yet inefficient “workarounds” for problems they ran into utilizing the new ERP.

Factor	Huck's Implementation
Clear understanding of strategic goals	With Y2K compatibility being a key issues, Huck knew that multiple upgrades and recreation of site-specific modifications would have been required to overcome the former, the total costs and business disruption of which would have been dramatic. Hence, a clear choice was made to switch to ERP instead.
Commitment by top management	Huck's CEO issued a directive that the company would move toward a single information system for all current and future sites. However, a realignment of the executive staff somewhat affected the continuity of executive support.
Excellent project management	The implementation strategy was to develop model processes at the primary site and rollout to subsequent establishments in order to create a framework on which to build.
Organizational change management	Huck had developed a company culture that was receptive to change. For several years, the company had embraced a program of monthly “kaizen ¹⁴ breakthrough events” in the pursuit of lean manufacturing.
A great implementation team	Twelve of the most capable and knowledgeable people were chosen. However, for some members, a full-time commitment was added to their continuing daily duties and responsibilities.
Data accuracy	Huck's conversion strategy included numerous checks for line counts of sales orders, purchase orders, work orders and other assorted categories of dynamic data.
Extensive education and training	Step-by-step preparations were created during the pilot. Also, training materials were available in hard copy for classroom and individual guidance and could also be accessed on the project website.
Focused performance measures	Huck utilizes a number of highly focused performance- and incentive-based measures, including a profit sharing program.
Multi-site issues	Not applicable.

Table 9: Huck's adherence to the critical factors for a successful ERP implementation

Overall, even when the implementation of a new ERP is deemed successful, a continuous interaction with both the system itself and the employees is required in order to ensure future benefits and improvements within the organization.

¹⁴ Kaizen, also known as continuous improvement, is a long-term approach to work that systematically seeks to achieve small, incremental changes in processes in order to improve efficiency and quality. Kaizen can be applied to any kind of work, but it is perhaps best known for being used in lean manufacturing and lean programming. If a work environment practices kaizen, continuous improvement is the responsibility of every worker, not just a selected few.

CHAPTER SUMMARY

Relevant theory is given related to ways of successful implementing Enterprise Resource Planning software:

Factor	Description
Clear understanding of strategic goals	Key personnel throughout the organization need to create both a clear and compelling vision of how the company should operate in order to accomplish various goals.
Commitment by top management	Strong leadership is required, as well as the full support and participation by the top management of a company.
Excellent project management	Clear definition of the ERP implementation objectives, the development of both a work- and resource plan and also, precise tracking of the current status/progress of the project in its entirety.
Organizational change management	Reengineering of key business processes and/or the development of new ones in order to support the organization's goals.
A great implementation team	A team responsible for creating the initial, detailed project plan/overall schedule, assigning responsibilities for various activities and determining due dates.
Data accuracy	Educate users on both the importance of data accuracy and its correct entry procedures.
Extensive education and training	Until end-users are utilizing the new system properly, the full benefits of ERP cannot be realized. An extensive amount of knowledge is required in order to enable people to solve problems within its framework.
Focused performance measures	Measures should indicate how the system is performing but at the same time, they also need to be designed in such a way as to encourage the desired behaviors by all functions and individuals.
Multi-site issues	Careful selection of approach: either an approach where implementation takes place simultaneously in all facilities, or a phased approach.

Table 8 (copied from p. 27) : Critical factors for a successful ERP implementation

As well as literature that focuses on the accounting practices surrounding cost price calculations:

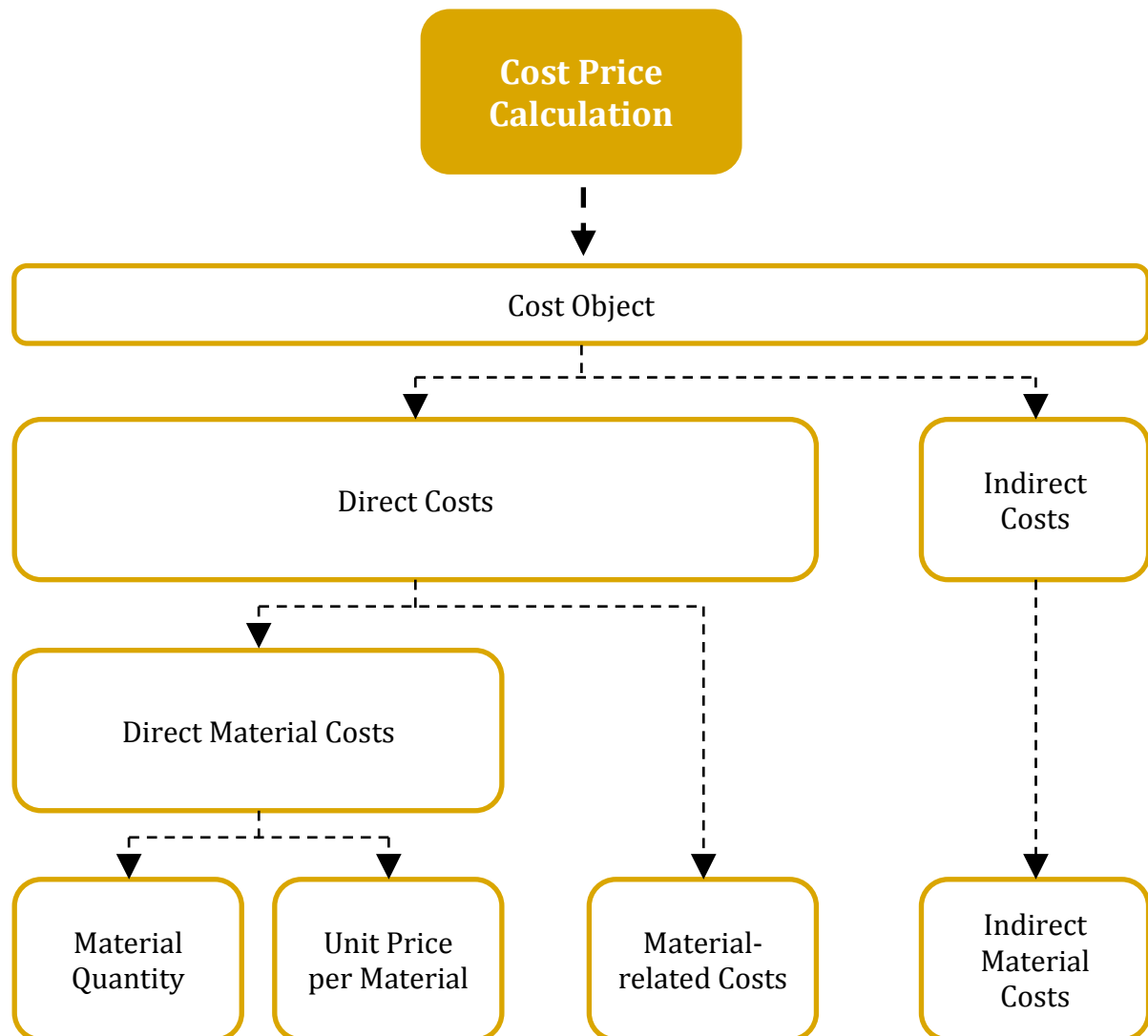


Figure 6 (copied from p. 30): Framework of cost price calculation

Cost object: a product, contract, project, organizational subdivision, function or other unit for which costs are measured or estimated.

Direct costs: any cost that can be specifically attributed to the creation of a final product (i.e. the cost object).

Direct material costs: quantity of material and unit price.

Material quantity: the physical amount needed of specific materials.

Unit price: includes the invoice price and acquisition-related cost items that can be specifically identified with direct material quantities.

Material-related costs: expenses incurred as a result of the acquisition, inspection, storage or movement of direct material quantities.

Indirect Costs: any cost that cannot be traced directly to the making of the final product, but is still necessary for the company to run.

Indirect materials: are not utilized as raw materials, but they make the production of the cost object (be it a good or service) either possible, more efficient, or safer.

CHAPTER 3: Operationalization

The literature described in the previous sections is a good representation of what can be generally applied in situations related to both ERP implementations and accounting practices within a company. Now, in this chapter, this theory is made ready for use for the scenario specific to MeMon. For this research, the core problem is the “unsuccessful implementation of Exact Globe”, or rather, not being able to use the ERP software to its full extent. To counter this, sub-problems have been formulated that need to be addressed which, in turn, have the main focus of improving the accounting system, or, to be more precise, the calculation of cost prices and the resulting information that can be derived (primarily profit margins). The changes made will be strongly related to utilizing the organization’s ERP system, Exact Globe, which, of course, are in line with the literature surrounding both successfully using and implementing such a system.

3.1 Operationalizing accounting practice literature (cost prices)

For this research, enhancements made to MeMon’s accounting system are primarily focused on cost price calculation. While the framework discussed in the previous chapter describes exactly how such a concept can be constructed properly (i.e. how to calculate an object’s expenses), the actual value of it lies in the applications that become available when one has obtained and/or derived the right figures and information. For MeMon, this comes in the form of profit margins. Currently, the company does not yet have a clear depiction of the latter, whether it be on profit margin per product, order, customer or any other specification. As a starting point, the formula to calculate the profit per product (also known as the contribution margin) is as follows:

$$\text{Contribution Margin (per product)} = \text{Salesprice per unit} - \text{Cost per unit}$$

Now, from the above, it follows that the sales price of a product equals its cost plus profit margin. In practice, MeMon sets a fixed contribution that it wants to earn per sale of a specific product. As an example: let us assume that the company wants to earn a profit of 50 euro per unit sold of product X. If expenses are estimated to be 300 euro/unit, then logically, the sales price would be set at 350 euro per product. Because MeMon is a trading company and primarily sells goods in large quantities to its customers, sales prices do not fluctuate regularly but instead, are fixed for a set period of time. As mentioned in the opening chapter of this report, the process starts with an offer made to a (potential) client. Upon agreement, a contract is formed, specifying the goods to be sold/delivered by MeMon to the client, detailing (amongst more) the total volume and of course, the sales price. From this scenario, the importance of a proper cost price calculation becomes immediately apparent; if expenses per unit are derived incorrectly (and by Murphy’s law¹⁵, they will always be higher than initially forecasted), the sales price will be set incorrectly and from the contribution margin formula, it follows that it has a direct impact on profits earned. Obviously, continuing to earn less profit than initially set (or in extreme instances even a loss, if the contribution margin was already low to begin with) per unit sold is far from desirable and the only way to counter this, is via a proper cost price calculation, in turn ensuring that expenses to be made are clear and the sales price can be set accordingly. To achieve the latter, the framework of cost price calculation depicted earlier in figure 6 will be tailored to fit MeMon’s specific organizational characteristics.

¹⁵ "If anything can go wrong, it will."

From the initial framework, it can be seen that a Cost Object is split into two parts: Direct Costs and Indirect Costs. For MeMon, the latter is actually irrelevant. This is due to the fact that fixed costs, the handling and/or allocating of which is the essence that comprises Indirect Costs, only have a small contribution to total costs. To further specify, the ratio of indirect (fixed)- to direct cost is over 1:30 for the period of January 01, 2013 – May 31, 2013¹⁶. Also, these costs are mainly comprised of rent and personnel wages, both of which are not uncertain (i.e. heavily fluctuating) in the future. Furthermore, an important goal of MeMon is to achieve more clarity within the organization; not only regarding profit margins, but also the way in which people perform their daily tasks. In order for this to become a reality, it is crucial that unnecessary adjustments and/or complications be avoided. Regarding cost price calculation; if the full framework were to be applied, different cost centres, apportionment rates etc. would all have to be specified. Seeing as the required work would not be justified due to the relatively small amount of fixed costs, the inclusion of indirect costs would only add complexity within the organization, thus conflicting MeMon's goal. For this reason, fixed costs are categorized as period expenses; plain and simple. Consequently, the framework of cost price calculation is now reduced to the following (refer to figure 7):

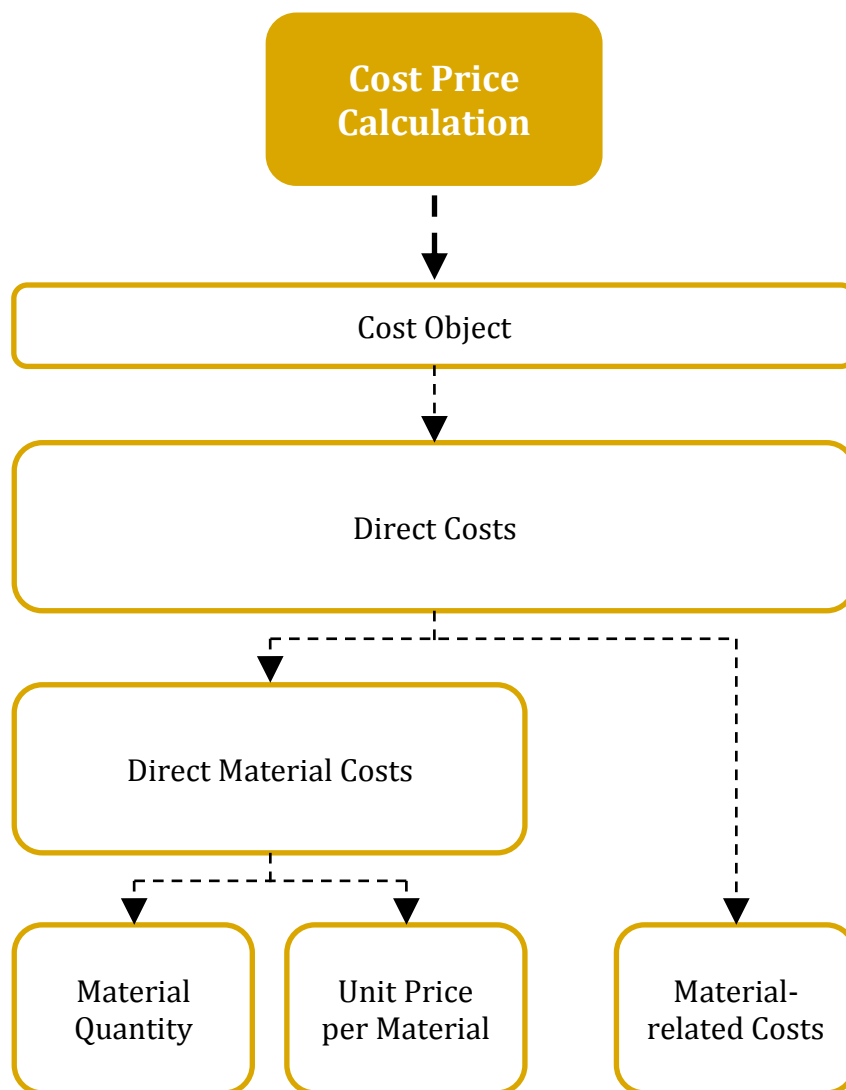


Figure 7: Framework of cost price calculation, tailored to MeMon

¹⁶ Refer to Appendix Attachment I, "Winst & Verlies".

On another note, at the start of this section, it has been briefly mentioned that the profit margin is applicable on different levels within the organization; per product, order or customer are just a few of the possibilities. Now, the contribution margin method specifies the margin per product. From a simplistic perspective, in a way, this is the “deepest level” possible; an order level, using the same point of view, is comprised of n products, whereas m orders together construct the customer level and so on. However, the reality is a little more complex, since even these different levels have multiple dimensions to which they relate (i.e. time, actors). For MeMon, a framework can be given that details the complexity of the different profit margins throughout the accounting system (refer to table 10). It serves as a helpful tool not only to illustrate current strengths of the system, but also (and perhaps more importantly) the levels and/or dimensions in which information is either lacking or incomplete. Also, it should be noted that terminology is used that either closely or completely resembles expressions within Exact.

The vertical axis of the table depicts the fixed entities (dimensions) within the company; the relationship to the actor (debit/credit), the type of article that is being processed (sales/production/purchase) and finally, the time period to which activities relate (week/month/year/season/contract period).

Now, what is important to note are the different types of levels that are present within the framework and the underlying hierarchy, which is where complexity comes into play (horizontal axis). First off, the lowest or deepest level is comprised of “Order lines”. Here, individual properties are identified (e.g. price, quantity). Moving up, “Order” is the next level. As can be seen, this level is further divided into three parts; “Sales”, “Production” and “Purchase”. In essence, these sub-processes are handled in sequence. First, a “Sales Order” is created, detailing the exact goods a customer is willing to buy. Next, these products are created using a “Production Order”, upon which the necessary resources are purchased at the right supplier(s) via a “Purchase Order”. These three activities together construct a “Project”. Whereas the levels mentioned up until now all follow terminology used within Exact, “Transaction” is an exception. Whenever MeMon takes on a new project, it is not uncommon for extra costs to be present outside of those initially specified at the project level. Usually, these costs are comprised of legal documents required for further processing of the project and/or the final delivery of the goods to the customer. Currently, although these costs are directly expensed at first (i.e. attributed to a project) and taken into account when the customer is billed, afterwards, they tend to wind up as indirect costs¹⁷ due to the lack of consistency in the accounting system (e.g. the respective invoices are paid and ties to the original project have long been severed at this point). This is a prime example of the current shortcomings within the organization; with no proper cost price calculation in place, costs tend to either “disappear” or end up in one big pile, hence severely limiting the accurate depiction of true profit margins on one or more levels. The final level, “Contract”, can contain any number of transactions. Usually, the latter is distributed over a set time frame.

To put things into perspective, “Verenmeel” will be analyzed with regard to the constructed framework of profit margins. The reason why this particular product is chosen is because it is actually the first of many goods that are now being updated and processed in Exact using “Raamcontracten” (i.e. it is MeMon’s first step in tackling the missing Contract Administration within its accounting system).

First, a “Sales Order” is created¹⁸:

Begindatum	Einddatum	Naam debiteur	Omschrijving	Contract aantal	Vrijgegeven	Vrij te geven	Geleverd	Bedrag
1-8-2013	30-11-2013	W. Neudorff GmbH KG	50272 Federmehl - Lose Ware	400,000	26,000	374,000	0,000	36000,00
1-12-2013	1-3-2014	W. Neudorff GmbH KG	50272 Federmehl - Lose Ware	600,000	0,000	600,000	0,000	14000,00

¹⁷ Not to be confused with the “Indirect Costs” that have been eliminated from the initial framework of cost price calculation altogether.

¹⁸ Images represent actual screen captures from Exact Globe.

Note: despite the detailed description given on the previous pages regarding this framework, it may still remain somewhat incomprehensible (especially in its current, empty state). If necessary, for extra clarity, please skip ahead to table 12 on p. 46: it shows a reduced version of the framework, with the different cells filled out with respect to MeMon.

Dimension		Order line	Sales		Project	Transaction	Contract
			Production	Order			
			Purchase	Order			
RELATION	Debit						
	Credit						
ARTICLE	Sales						
	Production						
	Purchase						
PERIOD	Week						
	Month						
	Year						
	Season						
	Contract period						

Table 10: Framework of profit margin levels & dimensions

At the “Order line” level of this, details such as the name of the client, product description, price, quantity and more are all depicted. As can be seen, this particular sales order denotes a purchase made by W. Neudorff for a total of $400 + 600 = 1.000$ ton¹⁹ (processed via a “Raamcontract”). For the elaboration of this example, let us say that a “Project” is taken on by MeMon for 1 ton “Federmehl”.

Having received the sales order, the “Production Order” is created next:

	Artikel	Versie	Omschrijving	gepland	Gerealiseerd	Te realiseren	Eenheid
1	102030	4	50272 Federmehl - Lose Ware 25000 kg	1,00000000	0,00000000	1,00000000	Ton

Again, the order line clearly defines what is being produced²⁰ and how much should be made; 1 ton of Federmehl, in this case.

In order for MeMon to actually produce the aforementioned, resources need to be purchased via a “Purchase Order”:

Vrijgeefdatum	Crediteur	Artikel	Contract aantal	Vrijgegeven	Vrij te geven	Ontvangen
1-8-2013	Agro Bodemvoeding B.V.	101197	400,000	26,000	374,000	0,000

For “Verenmeel”, contracts are already being used for purchasing as well. In this case, 1 ton is bought from Agro Bodemvoeding in order to enable the production for the customer.

Now, all three of these activities together form the “Project”, which, in this particular example, is the sale of 1 ton Federmehl to W. Neudorff. Furthermore, the “Transaction” level is identical due to no other costs being added outside of the three prime processes. In summary, the following activities have been performed (refer to figure 8):

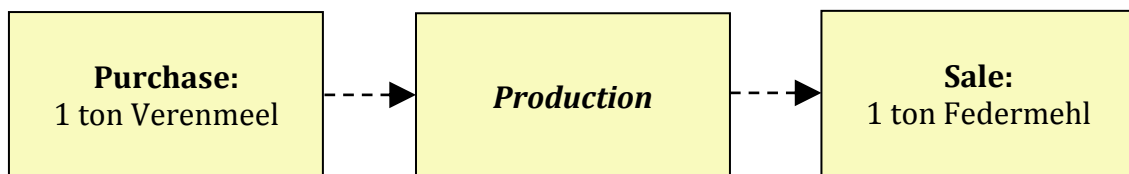


Figure 8: From purchase to sale (Verenmeel example)

Depicted next (refer to figure 9) is a graphical illustration of the example described in this section and how it fits inside the framework of profit margins (i.e. the hierarchical structure of the different levels).

Now that the framework itself has been discussed in detail, it will be operationalized in order to fit MeMon’s specific needs and wishes. Similar to the framework of cost price calculation, this means that the full scope depicted in table 10 is reduced (where possible) in order to exclude unnecessary aspects, hence ensuring a focus on the things that really matter (or at least, that matter for this particular thesis).

In order to achieve the above, it is necessary to know exactly which parts of the framework are most relevant for the organization as a whole. To deduce this, extensive interviews will be held with each individual employee of MeMon.

The highlights that have been the result of these conversations are as follows²¹.

¹⁹ A “ton” is the standard unit of sale.

²⁰ For this particular example, the production process is merely aesthetic: the only thing that “changes” is the name of the product, not its physical structure and/or appearance.

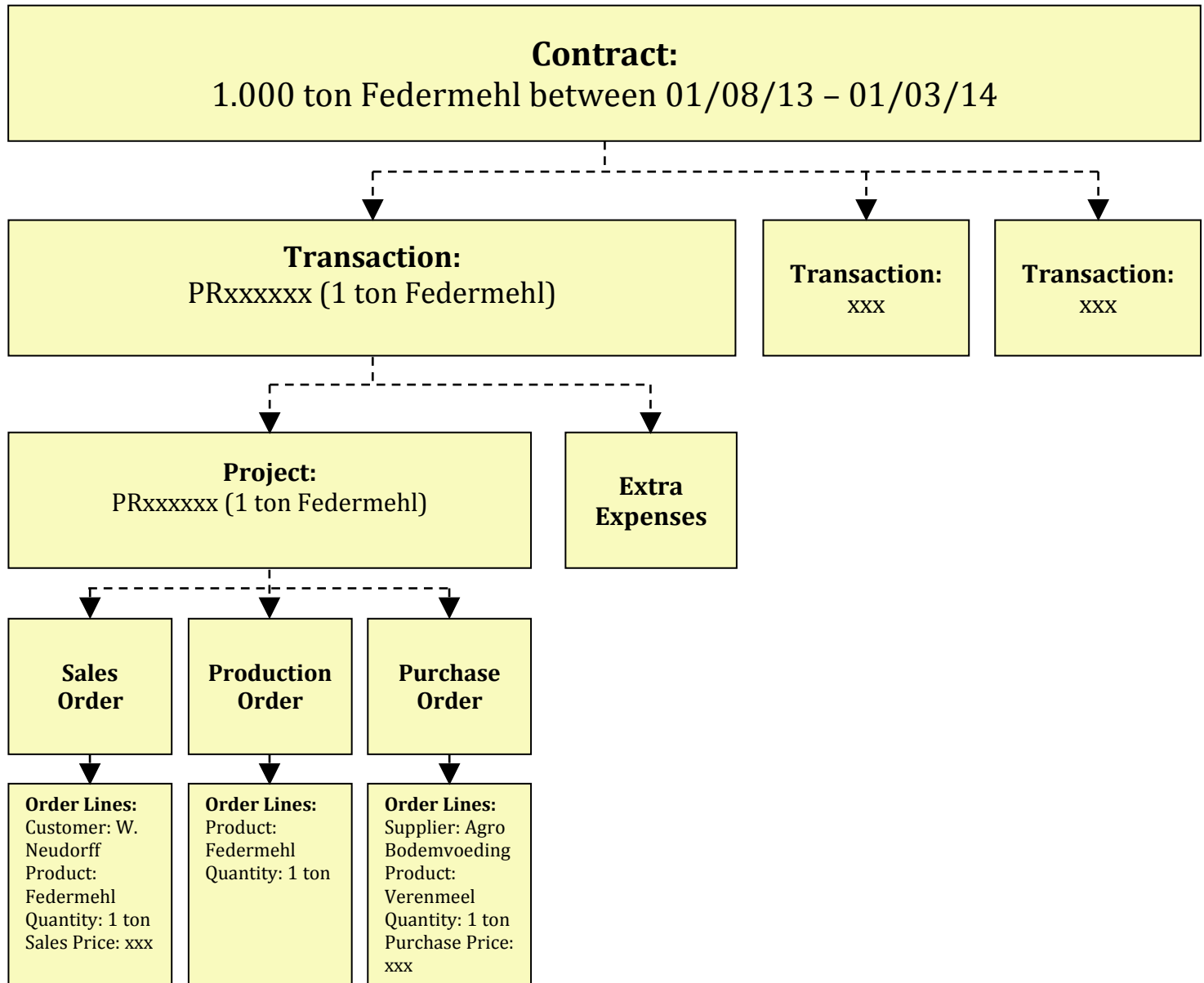


Figure 9: Levels of hierarchy (Verenmeel example)

Interview highlights

The interview can be roughly divided into two parts. First, there is a part that is used in order to determine which combinations of level/dimension of the framework are important. Information that is obtained here is used in order to gain insight as to what improvements personnel want regarding the current state of Exact Globe. Furthermore, these data put an emphasis on accounting activities, seeing as the different levels and dimensions are primarily developed with the purpose of being able to pinpoint precisely where information is lacking in the first place; information that is crucial to the proper processing of customer orders and the general decision making of MeMon, both of which require cost analyses.

The second part is related to elements similar to successful ERP implementation. While it is not the case that MeMon is introducing an entirely new system into the organization, the changes

²¹ The overall structure of these meetings, together with a complete overview of the generated results/responses, can be found in Appendix Attachment IV.

made to the existing one are significant and henceforth, it is necessary to ensure that they are both implemented successfully and that they stay intact. This part will be discussed in section 3.2: *Operationalizing successful implementations*.

Regarding the parts of the framework that are important; an emphasis is put on the higher levels within the organization, these being Project, Transaction and Contract. Also, for projects and transactions, a lot of similarities are present due to the way they are defined, respectively (i.e. a transaction is a project with extra, added costs taken into account). The following is a brief overview as to why each of these levels are crucial for MeMon's daily operations, as derived from the individual interviews and the associated responses that were given.

Project- and Transaction level

At the project level, answering questions such as "What did we earn on that shipment of containers?", "How much profit did we make from that particular customer?", "What are the earnings during this month?" can only be done if exact details (costs) of the respective projects are known. If such information is not present, more often than not it results in errors being made, the consequences of which are usually only noticed at later stages of order processing. For accounting activities, normally, this translates to entries being made on "Prijsverschillen" (price mutations). Of course, this happening is not desirable; if everything were to be simply booked onto this post, it would only create "one big pile of costs", the individual entries' ties to projects long being gone. Currently, complications at this level due to insufficient data come in the form of incorrect input into Exact, eventually resulting in scenarios where supposedly, a project generates an X amount of profit, while there are absolutely no (or very little) costs associated with it. The system may think that everything is fine and that things are just as they should be, but in reality, it is obvious that (more) costs have most definitely been made. Consequently, manually correcting data that should have been input properly in the first place becomes inevitable. Another, less extreme possibility is when costs are made and the system indeed recognizes them, but the amount is incorrect. In this case, even though things still need to be adjusted afterwards, the real problem is the "surprise" of finding out things were not a truthful depiction of the events that have taken place. All in all, situations such as these only lead to extra work that could (and should) have been prevented, as well as increase the risk of more errors (confusion, surprises).

At the level of transactions, the emphasis lies on taking into account extra costs that are added to projects. Examples of the latter include invoices paid for legal documentation, certificates, courier expenses and the like. Now, what is important here is obtaining the information that is required in order to properly calculate "true" sales prices (costs) of products. Currently, however, this is not yet feasible, which is the result of no adaptation between the major differences that set the project- and transaction level apart; the added costs, i.e. the ones mentioned previously, are processed directly at first (project level), but end up in the indirect category afterwards (transaction level). In practice, expenses for both a Letter of Credit (LC) and deep sea transport are estimated, rather than taken into account precisely. Now, regarding the former, this is done via utilizing averages and/or historical figures. For deep sea transport, not knowing the precise costs is related to the fact that payments are made in dollars, rather than Euros. Because of this, due to fluctuations that can occur between the moment of transport purchase (i.e. when taking the expenses into account and calculating the total price for the customer) and the actual time of payment (i.e. when the goods are shipped to the client), an estimated currency is utilized. Of course, the actual rate may differ (usually slightly, but huge differences are theoretically possible), hence causing differences in pre- and post-calculations that may already have an impact on managerial decisions. Overall, not having such expenses processed correctly into the system may result in scenarios where the reality differs tremendously from one's expectations at the pre-calculation phase. As might already be the case, this will lead to an incorrect focus on customers, specific products and the like, thinking that they yield high margins of profit while in reality, they are simply not worth the effort. The latter

danger is further amplified when scenarios occur where things deviate from the usual. Delays, for instance, are a good example to illustrate this; for international shipments, it is not uncommon for one or more containers to be held up at customs. Whenever this happens, it always results in added costs due to inspection, processing and possibly even leading to a fine that needs to be paid. Other times, for non-overseas shipments, delays can cause the driver to be put on hold or detours that inevitably have to be taken, resulting in more money being spent on the actual transport than initially calculated. Either way, whether unforeseen expenses are small or large, they still impact the true cost (and thus profit margin²²) of an individual product, a project, a shipment etc. This fact, coupled with standard added costs for documentation, couriers and the like already not being processed properly via a post-calculation (more often than not, it is unclear exactly which of these expenses are related to which project) will without doubt result in severe discrepancies between expected- and actual benefits of certain clients, goods etc. Overall, in order for MeMon to be able to make proper managerial decisions, improvements at this level are crucial.

Contract level

At this particular level, contracts themselves will be of great help because they display crucial information that is currently lacking. The core of the company's sales activities are comprised of both calculating the prices for products offered to customers and forecasting the volume that will be sold during a specific timeframe (per product per customer). For this, it is essential to know the exact status of running agreements. Let us assume that for the year 2013, customer X has agreed to buy 1000 ton product Y from MeMon. With the way things are currently handled, it is unclear as to how much this accord has been settled already. More precisely, it is not uncommon for certain employees having to estimate the current status of a specific agreement based purely on their own beliefs and experiences. However, due to the fact that not every single person can be involved extensively with every single project, errors are very plausible. Referring back to the example addressed above; if 400 ton of the agreement would still remain unpurchased by the end of the year, it is very unlikely that the respective client will honor the terms. For MeMon, this will have a multitude of negative consequences; resources may have been bought in advance in order to produce the final product (and are now wasted/unnecessary costs), the organization is seemingly losing a client or his/her interest in the product is fading (and more importantly, why?) and of course, profit is being forfeited. If more information were available on a contract level, scenarios such as these may very well be prevented due to a constant up-to-date status of running agreements; by viewing it, appropriate actions can be taken. Also, situations in which the opposite happens may occur; clients who purchase too many products. Usually, this would not be a problem (the more sales, the better). However, in case of scarcity (either resources needed to produce the final product or the latter itself) it is crucial that MeMon knows exactly what it has promised to sell, and whether or not this amount has been surpassed.

As of now, contracts are already being introduced and implemented within the organization's system. Still, there are a lot of things that need further improvement, even regarding the latter. Currently, Exact is not reacting to the changes as was initially expected. To illustrate this with a practical example; right now, there are instances when a contract is not available for selection, even though it should be. To satisfy customer demand (i.e. a sales order), a production order is created. Often, the latter requires the purchase of resources via a purchase order. With contracts in place, changes are made not only regarding sales, but purchases as well; both should now have the option to perform the respective activities via an agreement specifying price, buyer/supplier identification, total- and remaining quantity and the overall time span the aforementioned applies to. However, at the moment, it just does not work as intended. Regarding the purchase order contracts; there is the possibility of the contract not showing up at all. Now, what this means is that when the resources are purchased outside of the agreement,

²² Again taking into account that a sales price is fixed for a set period of time.

the remaining contract quantity agreed upon does not decrease. Obviously, this is counterproductive and may even result in higher costs, as contracts could have been formed specifying a discounted price. In other instances, it may be the case that multiple contracts are available for selection when making resource purchases; if a scenario such as this were to take place, it is crucial that whoever is taking care of it, chooses the right contract. Currently though, it is hard to know exactly which is the right choice to make. Other complications related to purchase contracts are the incorrect processing of prices (i.e. contracts and/or prices getting mixed up by the system itself). Overall, much change is needed if one wants the implementation of contracts within Exact to be actually successful and of use to the organization; benefits can be achieved in the form of reduced errors (e.g. no more choosing the wrong contract) and in short, the tasks of the employees need to be facilitated. In essence, information at this level is required and should be used as guiding elements; which customers need extra attention and what actions should be taken. Currently, such data are simply not present.

With the information obtained from the interviews, the framework of profit margins defined earlier (refer to table 10) can now be filled out. Given next is the result of this, where only the relevant levels discussed in this section have been taken into account, together with their respective dimensions (refer to table 12).

In summary, the operationalization of MeMon's current accounting system using literature (that is, determining the existing complications and how to properly address them) is depicted below (refer to table 11):

Complication	Resolution
No proper calculation of cost prices	Framework of cost price calculation, tailored to MeMon (figure 7)
No proper processing of added and/or extra expenses that are tied to a project	Record and connect the added and/or extra expenses made to their original project, combined with proper cost price calculations in order to determine true earnings (contribution margins)
(Alternatively; no proper post-calculation is in place)	+ (Reduced) framework of profit margin levels & dimensions (tables 10, 12)
No knowledge regarding the status of running agreements	Implement contract administration using Exact Globe
	(Alternatively; improve and enhance the current efforts to implement contract administration, make adjustments based on the organization's needs)

Table 11: MeMon's accounting system complications and resolutions (literature operationalization)

Also, finding these results serves as the next step in answering two of the sub-problems formulated back in the first chapter (repeated below for convenience).

"How can the accounting system be improved?"

and

"What general adjustments need to be made to Exact Globe?"

Level		Project	Transaction	Contract
Dimension				
RELATION	Debit	Cost of goods sold Earnings/profit margin (pre-calculation)	Total extra costs made True earnings/profit margin (post-calculation)	Current status of agreement: remaining- and total quantity, start/due date, price
	Credit	Cost of resources	Cost of resources	
ARTICLE	Sales	Specifications Price Quantity Costs	Added costs; e.g. expenses for legal documentation, certificates	Current status of agreement: remaining- and total quantity, start/due date, price
	Production	Specifications Price Quantity Costs	Extra costs made; things gone wrong, actual costs higher than estimated	Available contracts for selection (which one to choose)
	Purchase	Price Quantity Costs	Tie all added & extra costs to their respective projects	Current status of agreement: remaining- and total quantity, start/due date, price
PERIOD	Week	Cost of project Earnings/profit margin (pre-calculation)	Cost of project with added & extra expenses True earnings/profit margin (post-calculation)	Current status of agreement: remaining- and total quantity, start/due date, price
	Month			
	Year			
	Season			
	Contract period			

Table 12: Reduced framework of profit margin levels & dimensions

3.2 Operationalizing successful implementations

From the previous section; it has been concluded that enhancements that need to be made to MeMon's accounting system are focused on profit margins and primarily, establishing a way to both properly calculate cost prices and taking into account added and/or extra costs that are tied to a project. Also, contract administration should be in place in order to view the up-to-date status of all running agreements during any given time. As mentioned before, while it is not the case that MeMon is introducing an entirely new system into the organization, the changes made to the existing one can be significant and henceforth, it is necessary to ensure that they are both implemented successfully and that they stay intact. How this can be achieved, i.e. the operationalization of it, will be described here.

First, recall that the critical factors of a successful ERP system implementation are:

Factor	Description
Clear understanding of strategic goals	Key personnel throughout the organization need to create both a clear and compelling vision of how the company should operate in order to accomplish various goals.
Commitment by top management	Strong leadership is required, as well as the full support and participation by the top management of a company.
Excellent project management	Clear definition of the ERP implementation objectives, the development of both a work- and resource plan and also, precise tracking of the current status/progress of the project in its entirety.
Organizational change management	Reengineering of key business processes and/or the development of new ones in order to support the organization's goals.
A great implementation team	A team responsible for creating the initial, detailed project plan/overall schedule, assigning responsibilities for various activities and determining due dates.
Data accuracy	Educate users on both the importance of data accuracy and its correct entry procedures.
Extensive education and training	Until end-users are utilizing the new system properly, the full benefits of ERP cannot be realized. An extensive amount of knowledge is required in order to enable people to solve problems within its framework.
Focused performance measures	Measures should indicate how the system is performing but at the same time, they also need to be designed in such a way as to encourage the desired behaviors by all functions and individuals.
Multi-site issues	Careful selection of approach: either an approach where implementation takes place simultaneously in all facilities, or a phased approach.

Table 8 (copied from p. 27) : Critical factors for a successful ERP implementation

Next, each of these factors will be discussed individually with regard to MeMon.

Clear understanding of strategic goals

"Key personnel throughout the organization need to create both a clear and compelling vision of how the company should operate in order to accomplish various goals".

For MeMon, this factor is only partially applicable due to the fact that it primarily relates to the activities that need to be done *before* a new ERP system is implemented (i.e. what do we want to

accomplish by implementing a new system and is the selected candidate able to do so?). Nevertheless, it is still relevant for the organization as MeMon set out clear goals it wanted to achieve when Exact Globe was first purchased. In its old structure, the company did a lot of work (administrative, accounting) by hand. Though this might sound cumbersome, it actually provided a lot of benefits due to the high extent of flexibility (e.g. even if an order was received that was nothing like anything before it, one could simply input and process data specific to the situation and hence, the needed results such as profit margin could still be generated). Later on, however, due to growth of the company, doing everything by hand simply became impossible. For this reason, MeMon set out to find an ERP system that could facilitate such tasks (i.e. the automation of its core processes), yet with the condition (i.e. the goal) that generated results would remain on par with its past counterpart (e.g. clear depiction of contribution margin per product, customer). Currently, these goals are somewhat blurred throughout the organization; although people want to see distinct results (like the aforementioned contribution margin), not a lot of effort is put into actually achieving this. To illustrate: Exact Globe has some integrated functions that calculate profit margin per project. However, if one were to use such an application, resulting outcomes are far from a true depiction of reality (i.e. actual profits are a lot higher or lower). In essence, people want to see specific results, yet in the current state, cannot correctly generate these. Nevertheless, (next to) no action is taken to counter this, thus contradicting the goals that were set out to achieve in the first place. By reminding personnel of the latter, one can enforce people to “do something about the issues”, rather than letting everybody complain (which of course, is of no use to anyone).

Commitment by top management

“Strong leadership is required, as well as the full support and participation by the top management of a company”.

For MeMon, this factor is in line with the previous one; personnel want to see results, but put no actual effort in achieving these. In fact, it goes as far as the Board of Directors themselves barely using the ERP system at all. Of course, it is not to say that the leadership of the company itself is in question. Still, “a good leader always leads by example”, meaning that if the Board of Directors want to see specific results, they should also be the ones who put in the most effort (and then others will follow).

Excellent project management

“Clear definition of the ERP implementation objectives, the development of both a work- and resource plan and also, precise tracking of the current status/progress of the project in its entirety”.

This factor is not applicable to MeMon, as it focuses entirely on the stages of implementing the ERP system. Although it has been mentioned throughout this report that “Exact Globe is not yet fully implemented within the organization”, it refers to the fact that people are not yet able to grasp the full functionality of the system and hence, its true potential remains unrealized.

Organizational change management

“Reengineering of key business processes and/or the development of new ones in order to support the organization’s goals”.

For MeMon, this factor comes down to “making people comfortable with change, rather than having them resist it”. Again, achieving the desired results will require effort from everybody. In practice, this may result in (some) personnel having to perform additional tasks and/or (slightly) modify their way of working. No matter how small the change, the probability of people embracing it will drastically increase if they knew exactly why changes are made in the first place. Consequently, it should be clear for everyone what changes and, more importantly, why (this runs in parallel with a clear understanding of the strategic goals).

A great implementation team

“A team responsible for creating the initial, detailed project plan/overall schedule, assigning responsibilities for various activities and determining due dates”.

This factor is not applicable to MeMon, as it focuses entirely on the stages of implementing the ERP system.

Data accuracy

“Educate users on both the importance of data accuracy and its correct entry procedures”.

For MeMon, this is a crucial factor in order to achieve the results that are desired. As stated, using current Exact functionality, profit margin analyses can be made, yet figures shown are inconsistent with reality. Now, in order to generate outcomes that are a faithful representation, the correct input and subsequent processing of data is a necessity (e.g. current project contribution margins may be depicted too high due to missing costs). Furthermore, this also relates to the extra expenses that can be made during a project and the potential missing ties to the latter, again resulting in incorrect outcomes. Hence, data need to be both complete (e.g. no missing costs) and put in the right place (e.g. extra expenses need to be linked to the project to which they relate).

Extensive education and training

“Until end-users are utilizing the new system properly, the full benefits of ERP cannot be realized. An extensive amount of knowledge is required in order to enable people to solve problems within its framework”.

Although this is indeed a relevant factor for MeMon, it lies outside the scope of this research. As stated, a lot of the current complications related to Exact are the result of personnel not knowing how to properly operate the ERP system. Even though I will familiarize myself with the latter throughout the completion of this thesis, by no means am I (or will I become) an expert regarding the subject matter. Hence, the only way to truly counter the problem of missing knowledge regarding Exact Globe is through extensive education and training; not by me, but by someone who is actually qualified to do so.

Focused performance measures

“Measures should indicate how the system is performing but at the same time, they also need to be designed in such a way as to encourage the desired behaviors by all functions and individuals”.

For MeMon, this factor is only partially applicable; the majority again relates to the stages of implementing the ERP system, yet the other part focuses on the ongoing measurement of Exact Globe itself. In turn, the latter is in line with previous factors; looking at the current state of the ERP, personnel are not fully satisfied due to not being able to generate desired outcomes. Assuming that at some point, this will be resolved, the company still needs to monitor Exact in order to see if it still upholds the strategic goals (which may have altered by then). Hence, by constantly measuring the system, one can verify if (current) desires are met and goals achieved. If not, then there is reason to take action.

Multi-site issues

“Careful selection of approach: either an approach where implementation takes place simultaneously in all facilities, or a phased approach”.

This factor is not applicable to MeMon, as the organization operates from one central location.

All of these factors can be summarized as follows; one table that depicts the steps that MeMon should take to ensure a proper implementation of necessary changes that are the result of this thesis, and one table that depicts the factors that are either not applicable or lie outside the scope of this research (refer to tables 13 and 14, respectively).

Factor	What MeMon should do
Clear understanding of strategic goals	Remind personnel of company goals, hence enforcing people to “do something about current issues” (e.g. incorrect margin analyses).
Commitment by top management	The Board of Directors should lead by example; if they want to achieve certain results, they need to be the ones that also put effort into it.
Organizational change management	It should be clear for everyone what changes and, more importantly, why
Data accuracy	Data need to be both complete (e.g. no missing costs) and put in the right place (e.g. no missing project links).
Focused performance measures	Constantly monitor the ERP system, hence verifying if (current) desires are met and goals achieved.

Table 13: What MeMon should do regarding critical success factors

Factor	Description
Excellent project management	Not applicable to MeMon, as it focuses entirely on the stages of initial implementation of the ERP system.
A great implementation team	Not applicable to MeMon, as it focuses entirely on the stages of initial implementation of the ERP system.
Extensive education and training	Lies outside the scope of this research: as I am no expert regarding Exact Globe, I am certainly not qualified to educate and/or train people to the extent that is needed. My suggestion regarding this subject matter would be to allow personnel to follow courses on how to utilize the ERP system to its “full extent”.
Multi-site issues	Not applicable to MeMon, as the organization operates from one central location.

Table 14: Critical success factors irrelevant for MeMon

Also, deriving these results serves as the next step in answering the remaining sub-problem formulated back in the first chapter (repeated below for convenience).

“How can the improvements of the accounting system be successfully implemented?”

3.3 Overall research design

Having discussed the operationalization of both the improvement of the accounting system (cost price calculation and derived results, e.g. profit margins) and the successful implementation of an ERP system (i.e. how the changes made regarding the former have to be accounted for within the company), an overall research design can be formulated which integrates both parts.

In essence, there are four main phases that will be conducted, eventually resulting in the completion of this research. The graphical depiction is as follows (refer to figure 10):

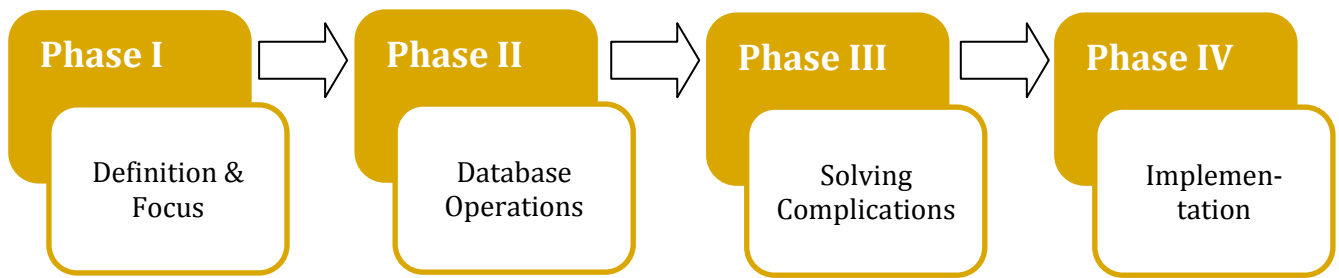


Figure 10: Overall research design

where Phase I, II and III are related to the improvement of the accounting system (Chapter 4) and Phase IV is related to the overall successful implementation (Chapter 5). While at first, it may seem strange that Phase I starts at the halfway-mark of this report (and not sooner), one has to realize that up until this point, the research has been purely about analyzing (i.e. exposing current complications and how to address them, the latter of which is aided through literature). From Chapter 4 and onwards, however, the true practical execution of the thesis takes place: meeting (latent) desires of employees by improving the accounting system (as defined in the main problem back in Chapter 1). The latter is broken up into parts, and it is exactly these parts that comprise the four phases depicted above. From this, it can be concluded that the research itself (and consequently, the report) can be roughly divided into two sections: first a theoretical-, and afterwards a practical one. This distinction also explains the “late” kick-off of the research phases, as they only relate to the practical part.

Regarding Phases I – IV; a detailed description is given next.

Phase I: Definition & Focus

First, a clear formulation of what will be done needs to be made. Basically, it all starts by having a proper focus on the relevant aspects and complications that will be tackled. More importantly, this needs to be in line with what the organization itself wants to see improved.

Deliverables:

- Concrete list with findings based on the personnel interviews (i.e. what are the most important questions people want to see answered?)
- Analysis and reduction of the list to its essence (i.e. the true focus where the improvements lie)
- Theoretical framework of cost price calculation, tailored to MeMon (initially derived from literature [figure 6], then operationalized later on [figure 7])

Phase II: Database operations

After defining exactly what will be tackled, the research continues by performing activities related to the database of the ERP system. During this phase, the latter will be used in order to find information to adequately solve complications formulated earlier, as well as making adjustments to Exact Globe itself where necessary (and if possible).

Deliverables:

- Overview of the different stages that are being completed when processing an order (from offer to payment, which activities take place during each stage etc.)
- Comparison between theoretical framework and reality;
 - └ Based on this comparison: what complications are currently present?
 - └ By utilizing theory: what improvements can be derived? (i.e. what is the best solution, countering the revealed issues?)

- Review of Exact's current database structure;
 - └─ Comparison between desired solution and ERP limitations: what modifications need to be made?
 - └─ Comparison between desired solution and ERP limitations: what trade-offs need to be made?
- Solution to the improvement of MeMon's accounting system (whilst including all of the aforementioned restrictions and/or criteria)

Phase III: Meeting desires

Having successfully derived and constructed the final solution, the desires that were initially formulated back in the first phase (Definition & Focus) and from which a distinct selection has been made, can now be met.

Deliverables:

- Answers to people's wishes (i.e. through utilization of the final solution, the reduced/focused list of desires can now be accounted for)

Phase IV: Implementation

The fourth and final phase of the research design is dedicated to implementation. The previous stages have concluded by first deriving the final solution to improve MeMon's accounting system, then later on actually developing it and putting it to use. Now, to truly reap the benefits of the post-calculation system, guidance and clear communication are essential; not only in knowing what the automated system of profit margin analysis does and *how* to use it, but also to ensure that people will *actually* use it.

Deliverables:

- Helping tools to guide employees;
 - └─ Tutorial: enabling employees to act in the correct manner when facing specific situations and/or scenarios (i.e. understanding the post-calculation system)
 - └─ Limitations: enabling employees to understand the possibilities of the post-calculation system (and consequently, its limitations)
- Communication enhancement throughout the organization (i.e. a solution has been derived and now, personnel need to see/hear its potential, hence ensuring that it will truly be put to good use)

CHAPTER SUMMARY

The relevant theory is made ready for use for the scenario specific to MeMon. First off, the framework of cost price calculations is revised to:

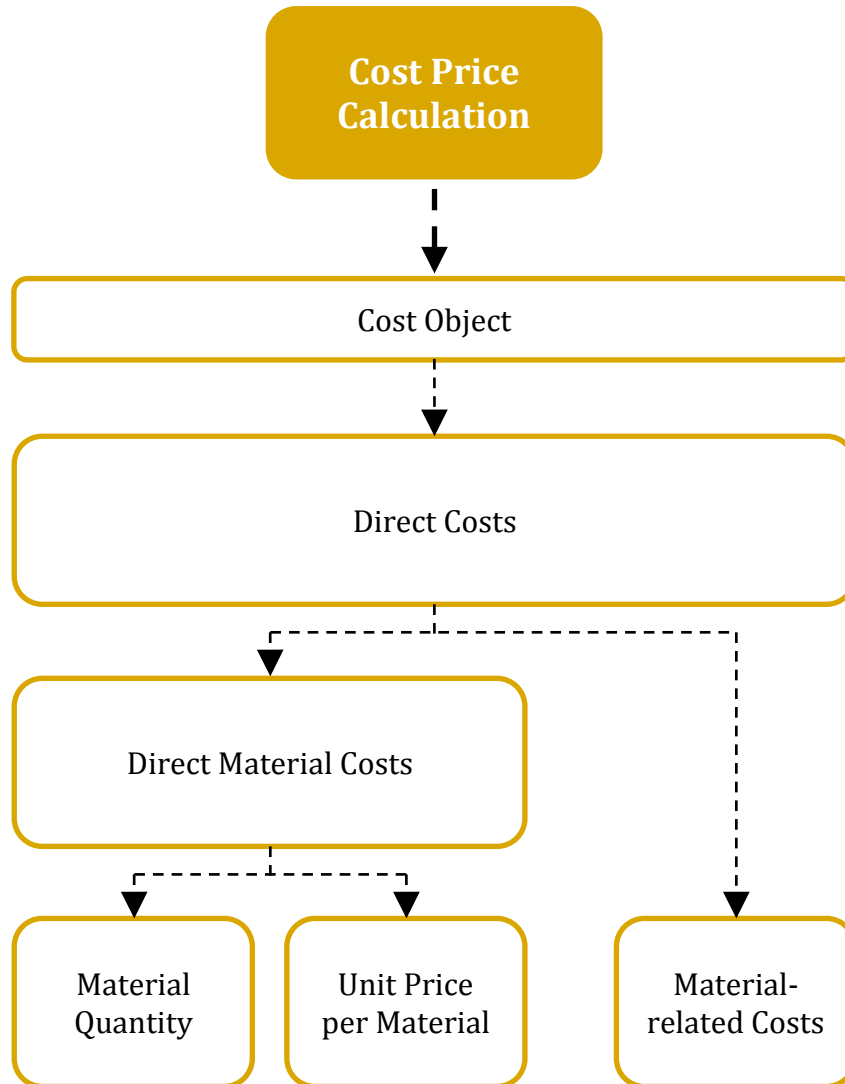


Figure 7 (copied from p. 38): Framework of cost price calculation, tailored to MeMon

Next, the overall operationalization of MeMon's current accounting system is summarized as:

Complication	Resolution
No proper calculation of cost prices	Framework of cost price calculation, tailored to MeMon (figure 7)
No proper processing of added and/or extra expenses that are tied to a project	Record and connect the added and/or extra expenses made to their original project, combined with proper cost price calculations in order to determine true earnings (contribution margins) + (Reduced) framework of profit margin levels & dimensions (tables 10, 12)
(Alternatively; no proper post-calculation is in place)	
No knowledge regarding the status of running agreements	Implement contract administration using Exact Globe (Alternatively; improve and enhance the current efforts to implement contract administration, make adjustments based on the organization's needs)

Table 11 (copied from p. 45):
MeMon's accounting system complications and resolutions (literature operationalization)

Whereas successfully implementing changes (that are the result of this master thesis) relates to:

Factor	What MeMon should do
Clear understanding of strategic goals	Remind personnel of company goals, hence enforcing people to "do something about current issues" (e.g. incorrect margin analyses).
Commitment by top management	The Board of Directors should lead by example; if they want to achieve certain results, they need to be the ones that also put effort into it.
Organizational change management	It should be clear for everyone what changes and, more importantly, why
Data accuracy	Data need to be both complete (e.g. no missing costs) and put in the right place (e.g. no missing project links).
Focused performance measures	Constantly monitor the ERP system, hence verifying if (current) desires are met and goals achieved.

Table 13 (copied from p. 50): What MeMon should do regarding critical success factors

Further research will be conducted throughout four phases:

- Phase I: Definition & Focus (finding the wishes of employees/what desires to meet)
- Phase II: Database Operations (deriving the final solution, whilst taking into account ERP limitations)
- Phase III: Meeting Desires (creating and applying the final solution)
- Phase IV: Implementation (ensuring the proper and/or actual use of the final solution)

CHAPTER 4: Improvement accounting system

This chapter is dedicated to the walkthrough of the first three phases that, together, construct the improvement of MeMon's accounting system. From previous chapters, it is known that enhancing the aforementioned is strongly related to addressing the complication of having no proper post-calculation (including cost price calculation) in place and, to some extent, the lack of knowledge regarding current statuses of running agreements. The focus of this research will lie on countering the former, i.e. both the faithful representation of expenses incurred and the recording and (re-)connection of the added and/or extra costs made to their respective project in order to determine true earnings (contribution margins). While the latter issue (i.e. regarding the contracts) is of course not one to be overlooked, due to the existing efforts already being made to address them (i.e. the introduction of contract administration, "Raamcontracten"), it is less relevant for the scope of this research. Other arguments for its analysis remaining less detailed will be made clear throughout the rest of this chapter.

4.1 Definition & Focus

To start off, as mentioned before, a definitive formulation of what will be done needs to be made. Basically, a proper focus is needed regarding the relevant aspects and complications that will be tackled. More importantly, this needs to be in line with what the organization itself wants to see improved (i.e. ensuring that the "right" desires of employees are met). For this phase of Definition & Focus, in essence, the individual interviews that have been conducted with the personnel can be used as a foundation. Furthermore, the complete overview of deliverables at this phase is as follows (as previously stated):

Deliverables:

- Concrete list with findings based on the personnel interviews (i.e. what are the most important questions people want to see answered?)
- Analysis and reduction of the list to its essence (i.e. the true focus where the improvements lie)
- Theoretical framework of cost price calculation, tailored to MeMon (initially derived from literature [figure 6], then operationalized later on [figure 7])

4.1.1 Concrete list of findings

Beginning at the top; from the given responses, the following has been derived (refer back to p. 42-46 and Appendix Attachment IV).

The levels to focus on are:

- Projects/Transactions, whereas the latter is defined to be similar to the first, the only difference being that extra costs and expenses (e.g. legal documents, certificates) are taken into account.
- Contracts.

Although each conversation has been unique, there were some striking similarities as to what individual employees wanted to see improved regarding the current situation within the company. In its core, these alterations are closely related to gaining a deeper insight as to what is happening in light of the business processes of MeMon. Questions such as "What were the earnings on that client during the season?", "What were the total costs made on that project and what are these expenses comprised of?" are all frequently being asked and yet, currently, cannot

be properly answered. Given next is an overview of desirable improvements, categorized based upon the respective level they are related to (refer to table 15). Again, these results have been derived from the interview sessions, as can be seen in Appendix Attachment IV.

Desire	Category (level)
What are the net earnings made on client X during the dimension? -per week -per month -per year -per season -per contract period	Project/ Transaction
What are the net earnings made during the dimension that include supplier X? -per week -per month -per year -per season -per contract period	Project/ Transaction
What are the net earnings made during the dimension? -per week -per month -per year -per season -per contract period	Project/ Transaction
What is the contribution margin on product X during the dimension/client combination? -sales article -production article -purchase article -per week -per month -per year -per season -per contract period	Project/ Transaction
What is the current status of agreement Y (client perspective, i.e. sales)? -agreed upon price/quantity -volume sold thus far -remaining quantity -historical data (comparison purposes)	Contract
What is the current status of agreement Z (supplier perspective, i.e. purchases)? -agreed upon price/quantity -volume purchased thus far -remaining quantity -historical data (comparison purposes)	Contract
What is the total quantity of product X sold to customer Y? -per week -per month -per year -per season -per contract period	Project/ Transaction & Contract²³
For goods sold directly from a supplier to a client (i.e. with no processing or transformation in between at MeMon); -what is the quantity produced at supplier X and delivered to the customer? -is client Y's order being fulfilled by multiple suppliers and if so, which? -is supplier X's output being directed to multiple clients and if so, which?	Other

Table 15: Overview of desired improvements

²³ Due to the possibility of the same article being sold, yet in a slightly different variety (e.g. packaging, quantity per bag) and because further complexity is added depending on the overall timeframe (the longer it is, the more troublesome), viewing the status of both individual projects and overarching contracts is required in order to deduce the wanted answers to the related questions.

4.1.2 Analysis and reduction

Having properly researched and formulated the wishes of the organization (i.e. the definition part of this phase), the required focus can now be made. As stated, the main desires of MeMon can be categorized by having to improve either the level of projects/transactions or contracts. The focus of this research will lie on the former, i.e. the faithful representation of expenses incurred and the recording and (re-)connection of the added and/or extra costs made to their respective project in order to determine true earnings (contribution margins). Of course, that is not to say that the latter issue should be overlooked. However, the wishes related to contracts are currently already being addressed (albeit that efforts are still in the early stages). Furthermore, it can be argued that the desires at this level are primarily guidelines that act as an extra means of obtaining information. While such data are indeed important (e.g. determining the moment to act whenever a client is seemingly not purchasing enough quantity of a product as per the running agreement), still, it is somewhat secondary when compared to the level of project/transaction. Basically, information at the latter is required before even establishing a contract in the first place (e.g. utilizing true contribution margins in order to determine whether or not an offer is worth the effort put into it) and hence, can be argued to be the more important level to focus on. This argument is also in line with the hierarchical structure of the levels themselves, which, from bottom to top, is order line, order, project, transaction and finally, contract at the top (also refer back to figure 9). From a logical perspective, only by improving the lower levels that are relevant (i.e. projects/transaction) can the resulting top layers (i.e. contracts) be enhanced as well. In contrast, solely focusing on the upper levels will not guarantee a backwards (positive) effect on the lower levels.

Furthermore, looking back at table 15, it can be seen that the last entry of desires are related to an “Other” category. Although these wishes do share some similarities with the category of project/transaction and contract, in essence, the goods that are being processed are of a different type entirely. Due to the fact that the products sold are directly transferred from a supplier to the customer, the foundation of giving answers to the questioned stated are based on the network of relationships between the aforementioned actors. As should be apparent, this is not the focus of this research and hence, it lies outside its relevant scope.

Consequently, based on the aforementioned and coupled with extensive meetings internally with the Board of Directors, the definition and focus of this research lies on the level of projects/transactions. Furthermore, it can be summarized into addressing two key aspects that are both closely related to cost accounting:

Pre-Calculation

On one hand, cost price information itself should be input properly into the system (i.e. utilize the “correct” values, even when multiple suppliers are available that each employ different prices, e.g. alternative transportation rates). This part is primarily focused on the *pre-calculation*; using data to forecast the future as accurately as possible (e.g. what costs will be made, what are the expected profit margins).

Post-Calculation

On the other hand, *post-calculation* is of great importance; structuring the information within the system in such a way as to really be able to chart the true costs made, in comparison with the expected amount calculated beforehand. Based on these data, an element of guidance should be introduced; which products and/or clients are less profitable than initially thought, should the focus be relocated to alternative goods/customers etc.

By having the proper knowledge readily available regarding both pre- and post-calculation, the desires stated in table 15 at the project/transaction level can all be answered; the costs per client per dimension, for instance, can be derived from information at either the pre- or post-calculation (depending on forecasted or true costs, respectively), whereas the true contribution margin per product is the result of applying the latter of the two (i.e. post-calculation results).

To summarize: for the first phase of Definition & Focus, the individual interviews conducted with the personnel serve as the foundation. From the given responses, the desires throughout the company have been revealed and were formally noted (refer back to table 15). Taking the restrictions of this research itself into account (i.e. its limited scope and available time), the wishes regarding projects/transactions were eventually selected as being the true aspects to accomplish within the organization by means of introducing a proper pre- and post-calculation. With it, the following questions will be answered (refer to table 16):

Desire	Category (level)
What are the net earnings made on client X during the dimension? -per week -per month -per year -per season -per contract period	Project/ Transaction
What are the net earnings made during the dimension that include supplier X? -per week -per month -per year -per season -per contract period	Project/ Transaction
What are the net earnings made during the dimension? -per week -per month -per year -per season -per contract period	Project/ Transaction
What is the contribution margin on product X during the dimension/client combination? -sales article -production article -purchase article -per week -per month -per year -per season -per contract period	Project/ Transaction

Table 16: Reduced overview of desired improvements

4.1.3 Theoretical framework

Finally, having the list of improvements (i.e. the most important questions people want to see answered) reduced to its essence, the theoretical framework derived from literature (and tailored specifically to MeMon, refer back to figure 7) can now be applied in order to ensure a structured approach as to how cost price calculation should be utilized within the company's internal environment. The latter will be discussed in detail in the upcoming section; Phase II.

4.2 Database operations (Phase II)

After completing the previous phase and thus having defined exactly what will be tackled, the research continues by performing activities related to the internal structure of the ERP system itself. During the Database Operations, the latter will be used in order to find information to adequately solve complications formulated earlier, as well as making adjustments to Exact Globe where necessary (and if possible). Furthermore, the complete overview of deliverables at this phase is as follows (as previously stated):

Deliverables:

- Overview of the different stages that are being completed when processing an order (from offer to payment, which activities take place during each stage etc.)
- Comparison between theoretical framework and reality;
 - └ Based on this comparison: what complications are currently present?
 - └ By utilizing theory: what improvements can be derived? (i.e. what is the best solution, countering the revealed issues?)
- Review of Exact's current database structure;
 - └ Comparison between desired solution and ERP limitations: what modifications need to be made?
 - └ Comparison between desired solution and ERP limitations: what trade-offs need to be made?
- Solution to the improvement of MeMon's accounting system (whilst including all of the aforementioned restrictions and/or criteria)

4.2.1 Overview of order processing stages

When a new order is received, different processes are completed in sequence upon which the former can be finalized. The graphical depiction of order processing stages is as follows (refer to figure 11):

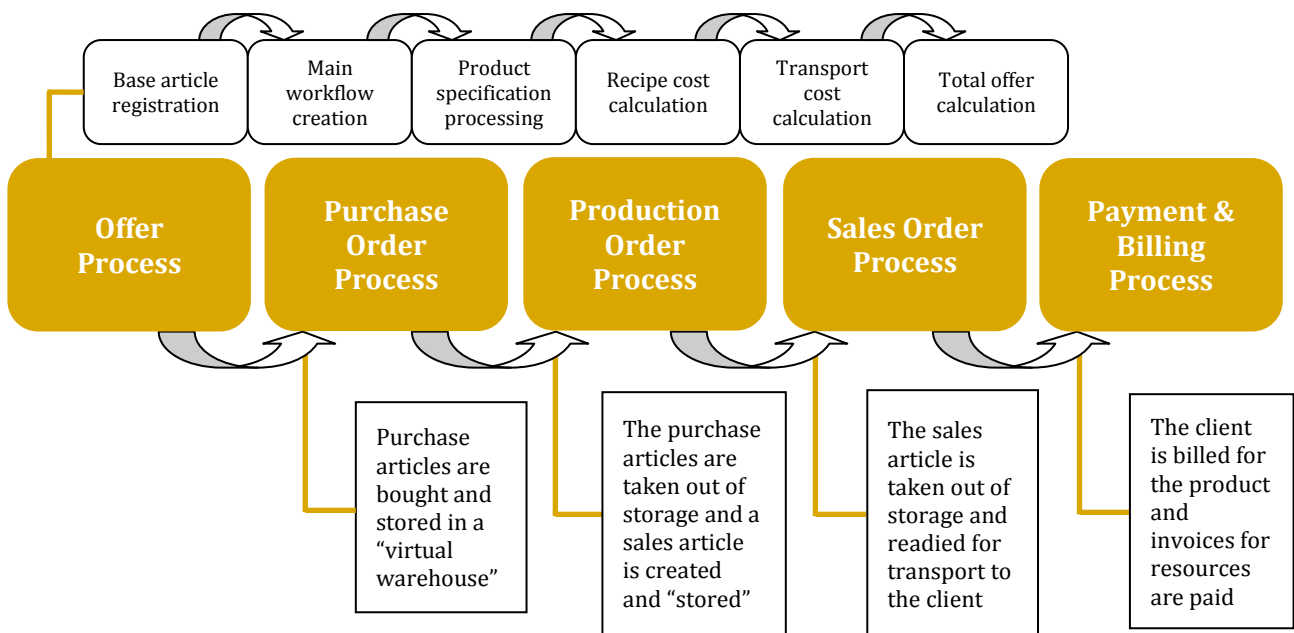


Figure 11: Order processing stages

Regarding the figure; the overall activities per stage are outlined via a step-wise process. The flow is depicted chronologically from left to right, with the primary activities of each individual stage outlined in the corresponding description. It should be noted that the offer process²⁴ differs from all other stages in the way that it is not focused on "one primary activity" but instead, is in itself constructed of sub-processes. The latter is depicted on the top-part of the

²⁴ What is interesting to note is that the sub-process of Recipe Cost Calculation is actually related to one of MeMon's subsidiary companies (Agro Bodemvoeding). Basically, the latter produces a resource (a "base article", to use Exact's terminology) that the company itself then purchases and eventually utilizes in the creation of the final product, as specified by the respective customer.

figure as well. Also, the entire process²⁵ only occurs after a client has accepted an offer in the first place, i.e. wants to make a purchase of a particular product²⁶.

Furthermore, there are a few activities that lie outside of the overview depicted above (i.e. do not follow the same flow pattern). These are:

- The procurement of transport (i.e. delivering the final product to the client)
- Adding “zakgoed” (a specific type of packaging)
- Adding pre-mix (a “helping supplement” in order to meet customer wishes²⁷)
- Processing extra expenses (e.g. stamps, documentation)

For these exceptions, the following figures depict the ties to the overall processing of an order (refer to figure 12.1, 12.2 and 12.3 , respectively).

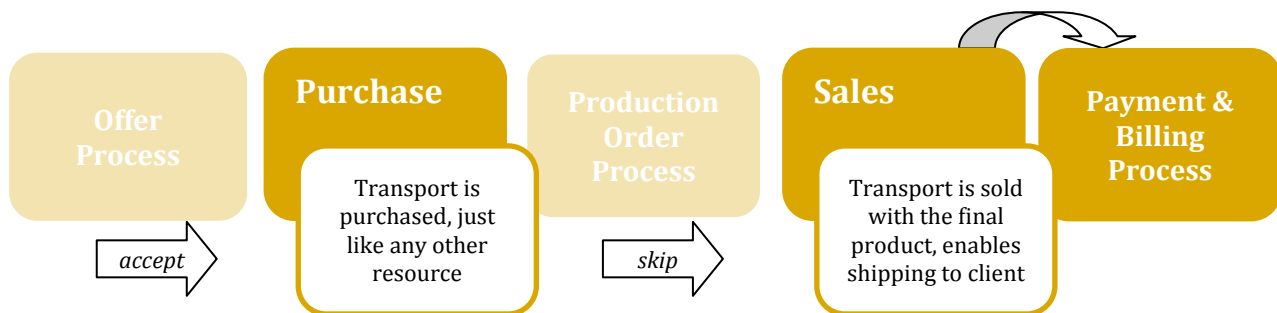


Figure 12.1: Exceptions (transport)

As can be seen, for transport, the stage of Production Order processing is skipped. In practice, what happens is that during the time that the initial resources are purchased, transportation is bought as well. Although it can largely be considered to be similar to any other type of purchase article, the distinction lies in the fact that it is categorized as being a material-related cost, rather than a direct product expense (refer back to figure 6/7). Now, during the Sales Order processing, the procured transport is sold “along with the final product” in order for it to be delivered to the client. Finally, as usual, the customer is billed at the last stage. Currently, there are two ways for this to happen; either transport is denoted separately and the amount to be paid is directly derived from MeMon’s expenses when it was secured in the earlier stage, or, the product is delivered via a “franco delivery”. For the latter, although transportation itself is still separately denoted on the bill to be paid by the client, its value will be zero. Instead, the costs of shipment are added on top of the final product and hence, these expenses are accounted for nonetheless. The true difference between these two methods (i.e. the complications) will be discussed in more detail later on, at the section of *Comparison between theoretical framework and reality*.

Also, it is important to note that in essence, no profit is made on transport; basically, it is a “free” service offered by MeMon (i.e. providing the means necessary to guarantee that the final product reaches its destination properly and in a timely manner) to ensure optimal customer satisfaction.

²⁵ Despite it already being mentioned explicitly throughout earlier sections of this report; again, it should be emphasized that the production process is not an actual physical task but instead, is just an administrative one. This should also be derivable from the fact that virtual storages are utilized, rather than “real” warehouses.

²⁶ Of course, it is also possible for a client to purchase a multitude of different products (the resulting outcome, i.e. the activities per stage for each individual product, would still remain the same). For simplicity and depiction of the overall process however, it is assumed that only 1 type of good is bought.

²⁷ These wishes are primarily related to achieving specific content ratios (i.e. ensuring that the product specifications as defined by the client are met).

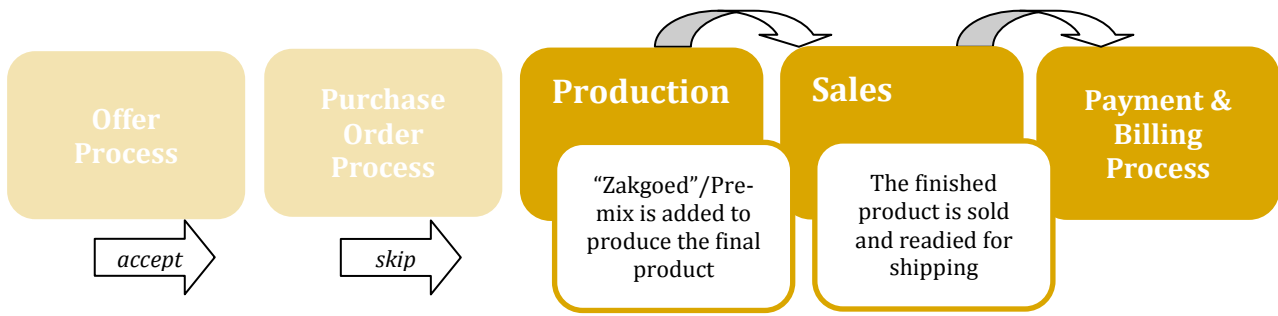


Figure 12.2: Exceptions (zakgoed/pre-mix)

The activities related to either adding “zakgoed” or a pre-mix are basically identical. What happens is this: as can be seen from figure 12.2, the stage of Purchase Order processing is skipped. Now, that does not mean that the resources themselves come out of nowhere or are just “handed to MeMon” with no strings attached. Instead, these specific goods are actually taken out of the company’s own storage and hence, have been purchased (long) in advance of receiving the customer order that is being processed. Because of this, there is no actual purchasing activity as compared to the other elements that comprise the final product. Of course, the further stages remain similar to the overview as depicted in figure 11; that is, “zakgoed”/pre-mix is used at the Production Order in order to create the desired good and afterwards, it is sold, shipped and the respective customer is billed.

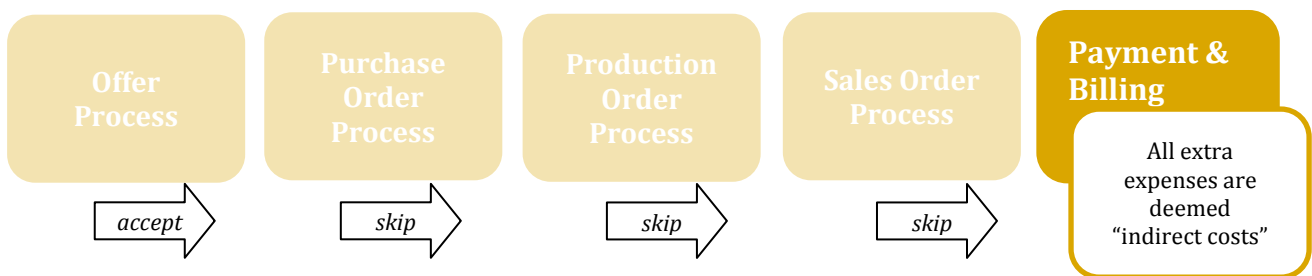


Figure 12.3: Exceptions (extra expenses)

From the above figure, it can be seen that the extra expenses (e.g. stamps, documentation, certificates) are all deemed indirect costs and henceforth, the related activities actually lie outside the “normal” overview of stages when processing an order (which explains all the skipping). In practice, this translates to these expenses only being paid by MeMon via incoming and/or received invoices, even though (more often than not, but there are exceptions) the ties to the original project are long lost.

4.2.2 Comparison between theoretical framework and reality

Regarding the comparison; first, it is necessary to analyze the places and/or aspects where improvements are possible or required. In order to accomplish this, the stages that form the overview depicted earlier in figure 11 are now thoroughly examined individually; by looking at the current way related costs are both constructed and recorded and by comparing this outcome to the theoretical framework of cost price calculation, the needed changes should surface. Also, through close communication with MeMon’s personnel, the improvements can be adjusted and/or customized to further fit the company’s specific needs and desires.

As stated, the individual stages of processing an order are examined first. For now, the Offer Process is excluded and will be analyzed in a later section; the reasons for doing so will become apparent at that time as well.

The remaining stages are each discussed following a distinct format (refer to figure 13). Also, extra graphical depictions can be found in Appendix Attachment V.

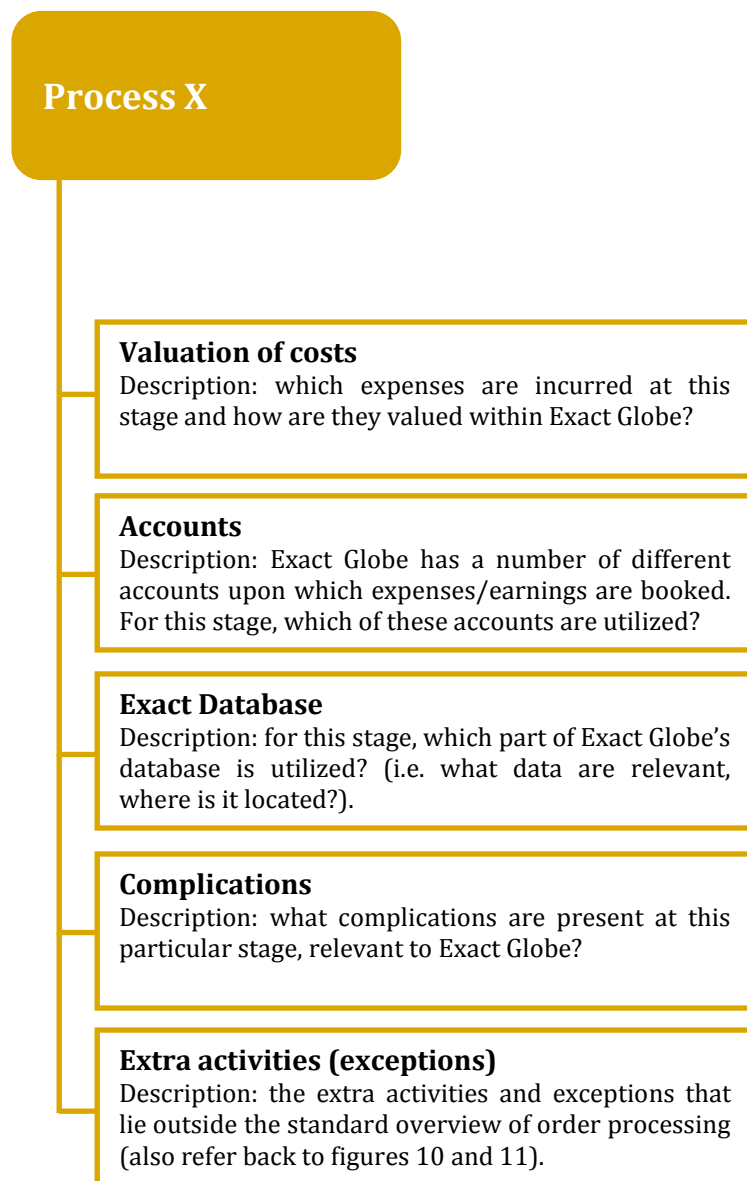


Figure 13: Stage analysis format

Purchase Order Process

Valuation of costs, Accounts

At this stage, the offer has been accepted by the client and the goods to be delivered continue processing. It is here that the individual components that comprise the final product are purchased from suppliers and "virtually stored". Furthermore, they are valued at the respective purchase price that is currently known/stored in Exact's database. Based on these initial expectations, the forecasted costs are presented as "invoices to be received" on account 2200. Also, zakgoed and/or pre-mix skip this stage (they are already in stock) and hence, their value is not included on this particular account (they do not need to be purchased any more).

Exact Database

To further delve into the system structure: the precise information that is used at this stage (i.e. the purchase price) is derived from the purchase article's cost price. Within Exact, this input field can be found under "Artikelen/Onderhouden" and then selecting the corresponding article from the list. Upon opening, under the tab "Basis", an entry space is available titled "Kostprijs" and its value is exactly what is used as the purchase price. Now, this number has to be input manually. Currently, its amount can be derived from two methods; either via purchase prices ("Inkooprijzen"), which is basically a price agreement (stating price and time frame, e.g. from 01-01-13 to 31-12-13), or via a fixed price that is applicable for an undetermined period of time. Although both methods are similar in essence, the former one is more preferred due to its accuracy (the more data, the better).

In case of acquiring transport, the activities performed and related operations within Exact are similar to the above; the only difference being that in this case, a cost price is more often derived from purchase prices that are tied to an indefinite duration. Transporters commonly state their price when approached, yet do not specify the specific time period it applies to. As a result, on the next occasion the same shipper is selected, this third party will calculate a new price.

Complications

The following is a list of complications present at this stage:

- Possibility of incorrect purchase prices
- Difficulty selecting the proper purchase price due to multiple suppliers (physical resources)
- Difficulty selecting the proper purchase price due to multiple transporters

Each of the above will now be discussed in detail.

Possibility of incorrect purchase prices

There is a possibility for the purchase prices to be incorrect (i.e. the cost price input for the resources bought, transport included), hence resulting in a faulty pre-calculation and (huge) differences when compared to the post-calculation. Although this is unlikely to occur whenever price agreements are utilized and/or are in place (which is another reason why they are preferable), the probability of it happening is notably present whenever fixed values for unspecified timeframes are used; it may very well be possible that the price displayed is outdated and consequently, mutations have to be accounted for afterwards.

Difficulty selecting the proper purchase price (physical resources)

For many resources, multiple suppliers can be selected to purchase the good from. Although the same physical product may be offered, its price will likely differ, depending on the selected party to make the acquisition from. Consequently, it is possible for a purchase article to have multiple prices tied to it (which in turn, individually, can also be applicable to a specific period or an indefinite time frame). Now, the difficulty lies in selecting the proper one, i.e. what should be input in the field of "Kostprijs" under the "Basis" tab? As of now, it is impossible to accurately depict the latter in a scenario such as this one. Overall, the complication at hand here is related to facing multiple prices for the same purchase article and not knowing how this information can be properly integrated into the correct input that is required.

Difficulty selecting the proper purchase price (transportation)

The difficulties here show strong similarities to the aforementioned- and discussed purchase articles that have multiple prices tied to them; a transport article may be acquired from different suppliers (transporters) as well, each resulting in a unique price to be paid, depending on which one is chosen. Of course, rather than the same physical good to be offered, now, the same service is being supplied (i.e. each transporter enables the final sales article to reach the customer and/or same destination, yet via various ways or routes etc.). Furthermore, with transport and other purchase articles already being equivalent to one another thus far, it should come as no

surprise that the resulting issues are also nearly, if not completely identical. Hence, like other resources with multiple underlying prices, the issue at this stage is again facing numerous calculated prices for transport to the same destination and not knowing how this information can be properly integrated into the correct input that is required²⁸.

Production Order Process

Valuation of costs, Accounts

At this stage, the individual components purchased earlier are being used in production to create the final product to be delivered to the client. Again, this production article is virtually stored in a warehouse but this time around, it is valued at the cost price that is input in Exact. Here, the relevant accounts are 3000 (stock of physical goods) and 3100 (stock of services, e.g. transport). Also, it should be noted that these two accounts are suspensible in nature; no “real transactions” are recorded here but rather, they are used as intermediate tools to “store” and represent the value of transportation that has been acquired in the previous stage (account 3100) and the resources purchased earlier (hence excluding zakgoed and/or pre-mix) that will be utilized to construct the sales article (account 3000).

Exact Database

To further delve into the system structure: the precise information that is used at this stage (i.e. the value of the finished good) is derived from the sales article’s cost price. Within Exact, this input field can be found under “Artikelen/Onderhouden” and then selecting the corresponding article from the list. Upon opening, under the tab “Basis”, an entry space is available titled “Kostprijs” and its value is exactly what is used as the cost price of the final product.

Now, again, this number has to be input manually. Currently, its amount can be derived by selecting and viewing the article, then choosing the tab “Productie”. Here, its structure is denoted (i.e. the different elements/resources the article is comprised of), along with the total calculated cost price²⁹. It is precisely this figure that is used as the foundation for inputting the “Kostprijs” field mentioned earlier.

Complications

The following is a list of complications present at this stage:

- Inconsistency between the stages of purchase- and production order processing
- Difficulty selecting the proper cost price due to multiple structures

Each of the above will now be discussed in detail.

Inconsistency between purchase- and production order processing

It is here, the production order (and the resulting viewable structure) where “zakgoed”/pre-mix first enter the stages of order processing and continue along its regular path. Because of this, it also gives rise to the first complication; in essence, there is a lack of consistency between this stage and the previous one (the purchase order processing). Here, the final product (the sales article) is created. Consequently, all components that are needed are utilized, including the aforementioned “zakgoed”/pre-mix when applicable. However, sales articles that require either (or both) of the latter two will see the expenses of these purchase articles reflected in their final cost price, yet it has not been accounted for in the initial start of the process (i.e. the procurement of needed resources). As stated earlier, these resources are taken straight out of a stock position and have been paid for long in advance of receiving the customer order that is

²⁸ In the current situation, for simplicity, the cheapest price is usually input; another illustration of MeMon’s policy of not wanting to make any profit on transportation and instead, occasionally having to account for extra expenses made regarding this service themselves.

²⁹ The individual goods that make up the final product all have a purchase price (i.e. a cost price for the purchase article, as described in the previous stage). Exact automatically takes this value into account, along with the required quantity, in order to compute the final cost price of the sales article.

being processed. As a result, the expected cost price that is tied to the final product is computed differently in the stages of purchase order- and production order processing. Basically, it is as if there are two separate pre-calculations present; one that does take the costs of “zakgoed”/pre-mix into account (the latter stage) and one that does not (the former stage). This lack of consistency should not be present, as it only unnecessarily complicates the overall process and diminishes the probability of ensuring a proper pre-calculation; one that can accurately be compared to the much-needed post-calculation as well.

Difficulty selecting the proper cost price (multiple structures)

The second complication is related to the structure a sales article is composed of. As mentioned in the previous stage, it is not uncommon for purchase articles to have multiple suppliers to choose from. Although the same physical good may be offered, its price will likely differ, depending on the selected party to make the acquisition from. A parallel scenario is also possible, where goods can be replaced by “perfect substitutes” (and in turn, these can be obtained from multiple suppliers at a variety of different purchase prices as well). Consequently, it is possible for a sales article to have multiple structures tied to it; although the same end result is produced, the difference lies in exactly what elements it is comprised of (where have these materials been obtained and more importantly, at what price). Now, whenever there is indeed more than one structure available for a finished product, undoubtedly, each one will be linked to a unique calculated total cost price. The issue then becomes the same as the ones described in the stage of Purchase Order processing; facing multiple calculated cost prices (structures) and not knowing how this information can be properly integrated into the correct input that is required.

Sales Order Process

Valuation of costs, Accounts

At this stage, the final product that has been created is taken out of its virtual storage and then readied for transport to the respective customer. No alterations have been made since the previous stage and hence, it is still valued at cost price. Also, the latter is reflected on account 7000, which is the costs of goods sold. Furthermore, in contrast to accounts 2200 and 3000, the value of zakgoed and/or pre-mix that may have been added to the sales article during production is included here as well.

Exact Database

To further delve into the system structure: the precise information that is used at this stage (i.e. the value of the finished good) is derived from the sales article’s cost price. Again, no real deviations since the Production Order process are in place and hence, the overall operations within the Exact Database remain the same as well.

Complications

The following is a list of complications present at this stage:

- Discrepancies due to utilizing inaccurate cost price for sales article (in case of multiple structures)
- Discrepancies due to utilizing inaccurate costs for transport

Each of the above will now be discussed in detail.

Discrepancies due to inaccurate cost price for sales article

As stated, in the previous stage, complications arise due to facing numerous calculated cost prices (in case there are indeed multiple structures tied to a sales article) and not knowing how to properly integrate this information into the required input at the “Kostprijen” field of the product in question. Despite lacking the ability to adequately perform the latter, some value has to be input nonetheless; otherwise, the order cannot continue processing. Now, the main issue

that results from this at this stage is best illustrated via an example. Let us assume that sales product X has two underlying structures, 1 and 2, each with their respective calculated cost price 1 and 2. Now, whenever “Kostprijen” is based on calculated cost price 1 (i.e. structure 1), inaccuracies occur in scenarios when the sales article is constructed via structure 2 and vice versa. Furthermore, it should be noted that this alternating between different structures only happens out of necessity (e.g. the supplier used in structure 1 does not have the resource available or delivery of it takes too long). Also, the reality is even more complex, as a sales article is not restricted to having two, but rather a maximum of n different structures tied to it, hence resulting in n different calculated cost prices as well. Whatever is eventually input at “Kostprijen” may be either of the n different outcomes, but it could also very well be some (weighted) average between these values; the possibilities are endless, which does not make things any easier. Henceforth, the issue at hand is related to processing and recording a “true” cost price which, in reality, is not all that accurate in a lot of instances.

Discrepancies due to inaccurate costs for transport

Similar to the other complication, the discrepancies regarding transport occur whenever multiple structures (i.e. transporters) are tied to it. Again, assuming that some value has been input that represents the costs of reaching the customer, like sales articles, it will be an inaccurate depiction of reality in a lot of cases; at times, the expenses accounted for transport may be too high while in other scenarios, the actual price paid for acquiring shipping far exceeds the inputted “true cost price”. Hence, whatever price ends up being processed and recorded is occasionally false.

Payment & Billing Process

Valuation of costs, Accounts

At this final stage, the customer is billed for the product and based on this (i.e. the sales price), the gross profit can be determined. Results are shown on account 8000, which is the gross profit of sales, respectively. Also, it is at the end of the order processing that the definitive invoice is received detailing the exact expenses for the initial resources that have been purchased at the stage of completing the purchase order. Any mutations that may occur (i.e. differences between expected- and actual costs) are recorded on accounts 7200 (price mutations goods) and/or 7210 (price mutations services).

Exact Database

To further delve into the system structure: the precise information that is used at this stage (i.e. the sales price) is derived from the sales article’s cost price with a profit margin added on top of it. Within Exact, this input field can be found under “Prijsbeheer/Prijslijsten” and then selecting the corresponding article from the list. Upon opening, an entry space is available titled “verkoopprijs” and its value is exactly what is used as the sales price.

Now, this number has to be input manually. Currently, its amount can be derived from customer sales prices (“Verkoopprijzen”), which is basically a list detailing all of the different clients the final product is sold to and at what price³⁰.

Complications

The following is a list of complications present at this stage:

- Accounting for consequences of utilizing incorrect purchase price (physical resources)
- Accounting for consequences of utilizing incorrect cost price for sales article
- Accounting for consequences of utilizing incorrect purchase price (transport)
- The extra expenses cannot be tied to their project of origin

³⁰ Rather than having one fixed sales price per product, MeMon varies this amount based on its clientele. Consequently, the organization is able to manipulate their demand in its own favor, e.g. attracting more sales from customer X by offering him/her a lower price.

Each of the aforementioned will now be discussed in detail.

However, before doing so, it should be noticeable that the majority is actually related to having to deal with the consequences of inaccuracies made in earlier stages. Henceforth, a fair conclusion to draw is that throughout the stages of order processing, issues and resulting mistakes do not tend to disappear or diminish but rather, their effects continue with each passing stage or even become more amplified.

Accounting for consequences of utilizing incorrect purchase price (physical resources)

This complication is the result of misdoings at the stage of Purchase Order processing; either utilizing outdated prices or having to face multiple prices for the same purchase article and being forced to input a single cost price for the good, even though it is an inaccurate depiction of reality in a lot of situations. In either case, both lead to a faulty expectation of expenses to be made. Basically, every sales article consists of a certain amount of purchase articles. Assuming that one or more of these have an incorrect/inaccurate cost price, whenever they are purchased, the expected costs are calculated based on this value and recorded on account 2200 ("te ontvangen facturen"). At this stage, the definitive invoices for the resources are received and hence, the true costs of the initial purchase articles are processed and recorded. Now, if the latter deviates from the initial expected costs (i.e. the value shown on 2200), differences are accounted for as price mutations on account 7200 (goods). The issue at hand then relates to the fact that occasionally, these price mutations can no longer be traced back to the project of origin; instead, these amounts tend to pile up, with no way of knowing how individual entries got there in the first place (or it takes a lot of manual effort to figure everything out, which is of course not very efficient either). In any case, without a faithful representation of expenses incurred and/or if costs made are no longer tied to their respective project, true contribution margins cannot be determined.

Also, logic dictates that this complication tends to occur more frequently whenever more purchase articles have an inaccurate cost price tied to them in the first place, hence also illustrating the fact that mistakes made early on continue throughout the different stages and can cause even more issues.

Accounting for consequences of utilizing incorrect cost price for sales article

This complication is the result of misdoings at the stage of Production Order processing; having a sales article that may consist of multiple structures, each with unique calculated expenses tied to them. Nevertheless, one is still being forced to input a single cost price for the final product, even though it is an inaccurate depiction of reality in a lot of situations, occasionally leading to a faulty expectation of the costs of goods sold. Now, the issue at hand is related to determining the actual sales price of the sales article; as mentioned, this value is derived from the cost price of the product, with a certain margin of profit added on top of it. Consequently, whenever the inputted cost price is a misrepresentation of actual expenses for producing the product, it may very well result in a sales price that is too low, in turn leading to actual profit margins that are not on par with the net earnings the company expects to make per sale. Also, this complication shows strong similarities to the other issue that has been discussed; the effects of a "faulty sales price" (i.e. taking too much/less costs into account) will eventually show on the accounts of price mutations (7200, 7210). Basically, it is fair to say that this issue is a continuation from earlier ones, seeing as inaccurate depictions of costs of the sales article start with difficulties regarding the initial elements it is comprised of: the purchase articles. Furthermore, this is another illustration of complications in earlier stages persevering (and worsening) all the way to the end.

Accounting for consequences of utilizing incorrect purchase price (transport)

This complication is the result of misdoings at the stage of Purchase Order processing; having to face multiple prices (transporters) for reaching the same destination and being forced to input a single cost price for the service, even though it is an inaccurate depiction of reality in a lot of

situations, occasionally leading to a faulty expectation of expenses to be made. As stated earlier, there are two ways a client may be billed for transport; either it is denoted separately and the amount to be paid is directly derived from MeMon's expenses when it was secured in the earlier stage, or, the product is delivered via a "franco delivery". In case of the former, no real complications will be faced³¹ and hence, only the franco deliveries remain. In situations such as these, the issue at hand is again related to determining the sales price of the final product to be sold. As denoted earlier, franco deliveries have transport billed at a value of zero, yet its expenses are absorbed into the sales price itself. Consequently, whenever an inaccurate cost for this service is recorded and then later used as a foundation to determine the actual sales price, the issue at hand relates to the fact that the latter may be set too low, again in turn leading to actual profit margins that are not on par with the net earnings the company expects to make per sale. The differences between expected and actual costs eventually end up on account 7210 (price mutations services), yet may face the same issue as earlier; occasionally, these price mutations can no longer be traced back to the project of origin and tend to pile up instead. Consequently, it again becomes impossible to determine true contribution margins

Finally, it should have become apparent that these complications are similar to the other ones discussed at this stage; again, it only serves to illustrate that issues at earlier stages should be taken care of, lest they only cause more (and bigger) problems.

The extra expenses cannot be tied to their project of origin

The extra expenses consist of payments regarding the likes of legal documentation, stamps, certificates et cetera and are required for certain projects to continue processing (e.g. for the product to be delivered to the client, legal documentation is needed in order to export the good in the first place). As is depicted in the overview of different stages when processing an order and the related exceptions (refer back to figures 11 and 12.3, respectively), these extra expenses are categorized as being indirect costs; in essence, they have no other ties to the regular processes of constructing the final product (i.e. nothing is purchased, taken into production or created). Rather, invoices for these expenses are just received and paid at this stage. Furthermore, instead of just having the "normal" extra expenses, it is also possible for added costs to occur that are related to scenarios that deviate from the norm, i.e. when things do not go according to plan; containers being held up at customs, delays, faulty goods are all prime examples of such instances. However, regardless whether extra expenses are normal or unforeseen, the fact remains that in both cases, they are often simply paid without the possibility to trace these costs back to their project of origin. Hence, because of the latter, the issue at hand is once more related to not having the ability to properly determine true earnings (e.g. per client, per product, per project) and in fact, not being able to accurately forecast the initial costs to be made either (most of the time, there is no suitable way to account for these extra expenses in the early stages).

³¹ Sure, having an inaccurate value representing the costs of transport is not favorable (especially not from an administrative perspective), but due to it being billed based on the actual expenses made, everything works out in the end. The latter is best illustrated with an example: let us assume that transportation to destination X is possible via several routes/transporters, each tied to a unique price. Now, let us further assume that within Exact, it has been determined to set the cost price for this particular destination to 500 euro. A new order arrives, which requires transport to X; the service is then purchased and its value is denoted on account 2200 (i.e. expenses of 500 euro to be made for transport). However, actual shipping costs are much cheaper and turn out to be 350 euro; this surplus is then stored on 7210 (price mutations services) but is immediately offset due to the "losses" made (500 euro is taken into account as costs, yet the customer is only billed 350, hence creating a simultaneous loss of 150). As can be seen, everything works out in the end; the client is billed the exact amount that has been spent for transport (no profit is earned by MeMon on this service) and in a way, the initial value input for the transport's cost price is (to some extent) irrelevant. The only "complications" that arise are pure administrative of nature, as should be apparent from the gains and losses on multiple accounts that eventually only serve to offset each other.

To summarize, the overview of complications is as follows (refer to table 17). As can be seen, an extra column is added into the table as well, detailing the connection to the focus derived in Phase I, i.e. pre- and post-calculation.

Stage	Complication	Essence	Phase I ties
Purchase Order Process	01. Possibility of incorrect purchase prices	Utilizing outdated prices, resulting in mutations afterwards	Pre-calculation: set the correct cost price for an article (i.e. its value), hence being able to properly forecast the expenses to be made whenever said article is purchased (resources, transport) or produced (sales article)
	02. Difficulty selecting the proper purchase price (physical resources)	Facing multiple prices (suppliers) for the same article and not being able to properly integrate the data into a single cost price	
	03. Difficulty selecting the proper purchase price (transport)	Facing multiple prices (transporters) for the same service and not being able to properly integrate the data into a single cost price	
Production Order Process	04. Inconsistency between the stages of purchase- and production order processing	Dealing with “two different” pre-calculations due to zakgoed/pre-mix being taken into account starting from this stage and skipping the previous one	
	05. Difficulty selecting the proper cost price	Facing multiple calculated cost prices (structures) for a sales article and not being able to properly integrate the data into a single cost price	
Sales Order Process	06. Discrepancies due to utilizing inaccurate cost price (sales article)	Processing and recording a “true” cost price which, in reality, is not all that accurate in a lot of instances	Pre-calculation: set the correct cost price for an article (i.e. its value), hence being able to properly forecast the expenses to be made whenever said article is sold
	07. Discrepancies due to utilizing inaccurate costs for transport		
Payment & Billing Process	08. Accounting for consequences of utilizing incorrect purchase price (physical resources)	Deviations from expected costs (i.e. the value represented on account 2200) are recorded as price mutations on account 7200/7210 and occasionally, individual entries can no longer be traced back to their project of origin. Also, due to the sales price being derived from cost price + profit margin, whenever the former of the two is a misrepresentation of actual expenses, the sales price may be set too low (i.e. profit is not on par)	Post-calculation: true expenses are now known and these need to be directly compared to the initial costs that were taken into account
	09. Accounting for consequences of utilizing incorrect cost price for sales article		
	10. Accounting for consequences of utilizing incorrect purchase price (transport)		
	11. The extra expenses cannot be tied to their project of origin	Deemed indirect costs, they are simply paid and often, they cannot be traced back to their project of origin. Because of this, there is no possibility to determine true earnings (or true expectations)	Post-calculation: comparison with initial costs Pre-calculation: take extra expenses into account (to the extent that is possible), hence diminishing extreme differences when comparing forecasted- and actual costs

Table 17: Summary of complications present in order processing stages

Although numerous complications have been identified with respect to Exact’s database operations, together, they form the issue that lies at the heart of the current shortcomings regarding MeMon’s accounting system: there is no proper way to faithfully depict expenses

incurred, hence preventing the derivation of true contribution margins. In turn, the much-wanted (and needed) answers to the wishes formulated at the beginning of this chapter (refer back to table 16) cannot be answered. The upcoming solution (discussed in detail in section 4.3) will be aimed at tackling precisely this, i.e. developing a way to generate accurate profit margins on different levels/dimensions.

For now, however, the interrelationships between the complications are further put into perspective via a graphical tool (refer to figure 14). In this framework, the way the issues are connected to one another is displayed, as well as visually representing the overall complexity of MeMon's (related) operations regarding "cost price calculation" when processing a customer order.

List of abbreviations

R	: resource
S	: supplier
T	: transport
pp	: purchase price
cp	: cost price
cps	: cost price structure
cpsa	: cost price sales article
spsa	: sales price sales article
spT	: sales price transport

The framework itself depicts a rather simplistic example of processing a customer order; here, the product that is sold consists of two resources, R1 and R2, whereas the latter is available in two forms (R2.1 and R2.2), serving as perfect substitutes for one another. Now, the cost price of the latter is easily input, as there is only one available price (both for R2.1 and R2.2, respectively). R1 on the other hand, can be obtained from multiple sources, each with unique expenses. By combining the resources, two different structures can be formed, each resulting in a distinct calculated cost price before eventually having to select one single value. The shipping that is required to deliver the final product to its destination also consists of multiple transporters, again forcing the selection of one value to be processed. Now, delivery can take place according to two possibilities; either it is done via a non-franco method, upon which the sales price of the sales article is based on the costs of goods sold of the product with a margin of profit added on top of it and the transport is billed at the price it was actually obtained (in the figure, let us assume this was purchase price 1), or, a franco method. In case of the latter, shipping is billed at no cost (depicted in the figure as $spT=0$) and instead, the expenses for it (which are based on the cost price of transportation) are added on top of the sales price for the sales article.

Extra notes: in the final stage of Payment & Billing, it can be seen that (10) is displayed for the sales price of transport in case of non-franco deliveries. This is done because this complication is not considered to be a "real" issue but rather, as already explained in the respective section, is only administrative of nature. Regardless, for completion purposes, it is shown nevertheless. Also, following the same analogy, complication 11 (extra expenses) is not connected within the framework, hence illustrating the fact that in essence, they have no ties anywhere (at least not to the same extent the other issues have).

Finally, it should be noted that reality can be a lot more complex; in the framework that is depicted, only two different structures are possible. As already stated, this number is not limited and in theory, can lead to as much as n distinct ways a product may be constructed. Regardless of the simplification that is used in the figure, it still serves its purpose; to illustrate how the complications that have been revealed are all interconnected to one another.

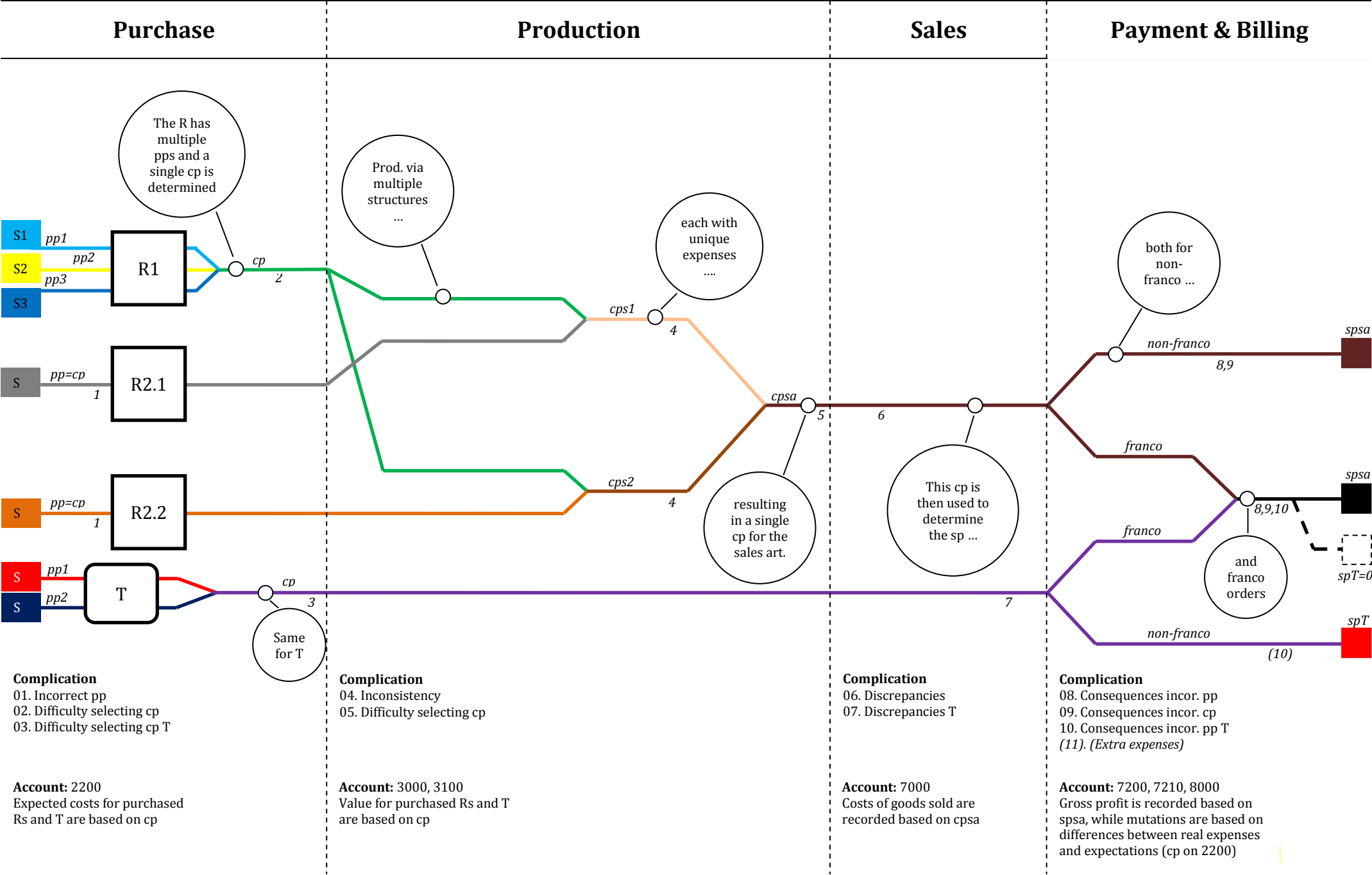


Figure 14: Framework of complications present in order processing stages

Now that the complications in the current situation have all been accounted for, the theoretical framework of cost price calculation, tailored specifically to MeMon, will be used in order to derive a fitting solution to counter these issues (i.e. what should the desired situation be). Recall that the reduced framework itself is as follows:

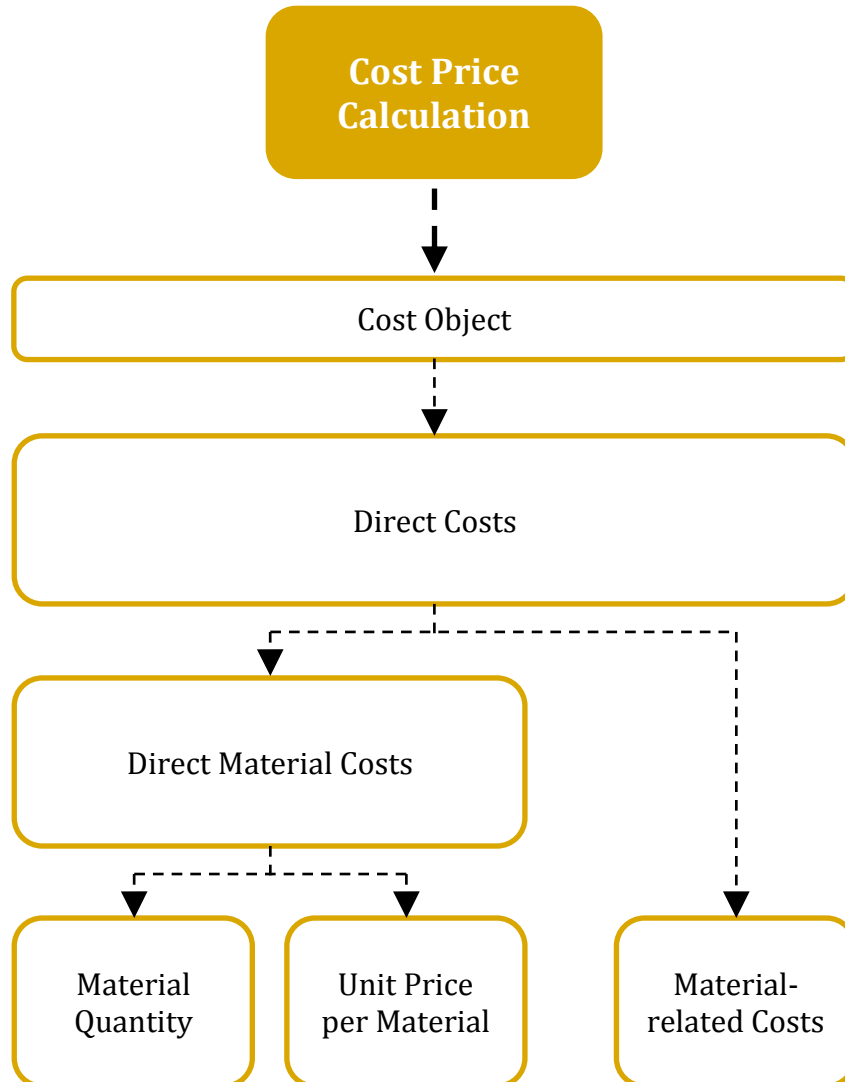


Figure 7 (copied from p. 38): Framework of cost price calculation, tailored to MeMon

In MeMon's current situation, these different aspects are accounted for as follows (refer to figure 15).

Consequently, the issues that have been revealed earlier are not so much related to not fitting in the overall framework of cost price calculation but instead, even though all the different elements are present, they are not properly processed and/or taken into account.

Now, in order to derive the desired situation, the results from Phase I serve as the basic foundation; in essence, a proper pre- and post-calculation need to be set up. To accomplish this, the individual parts that comprise MeMon's framework of cost price calculation (again refer to figure 15) will be further analyzed with respect to the company's operations.

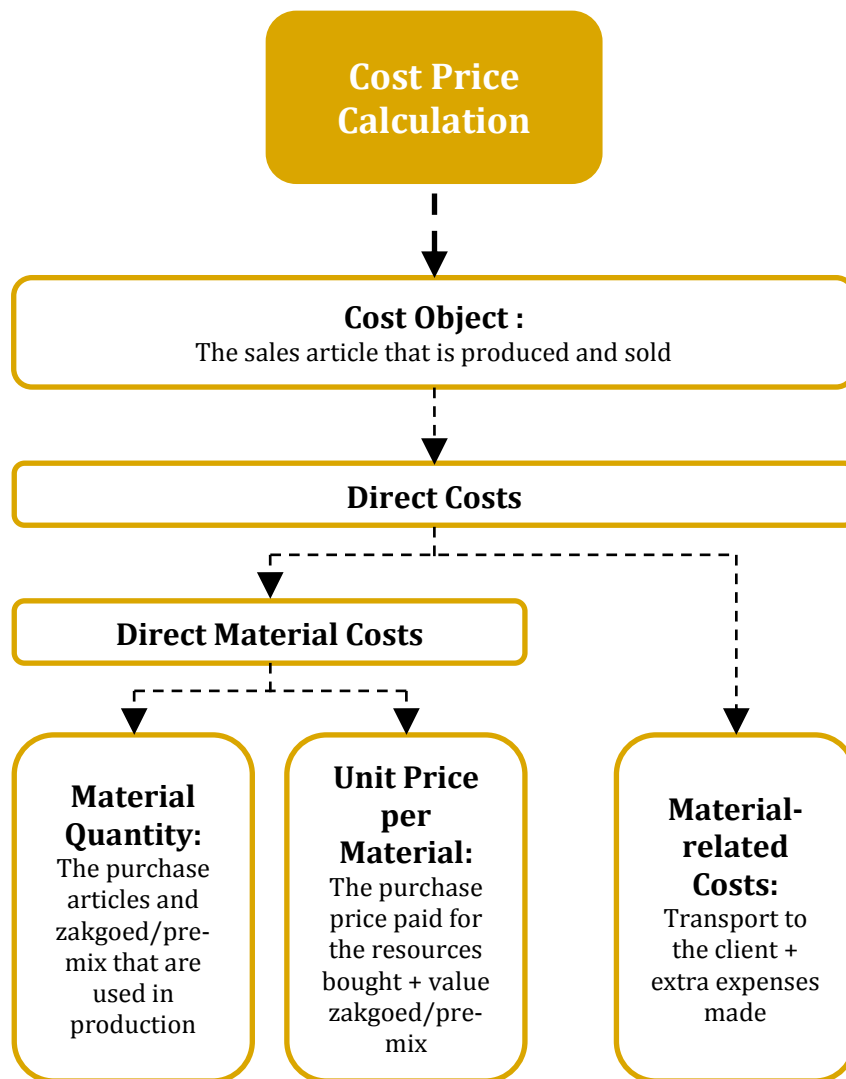


Figure 15: MeMon's application of the framework

Cost object

In MeMon's environment, the cost object is represented as a sales article to be sold to the client. In the current situation, the most prominent complications related to it are having to set a cost price that accurately depicts the true expenses of production and then later recording this value on the respective account when the good is sold (in terms of the numbering utilized earlier, these are complications 05, 06 and 09³²).

Desirably, in terms of pre- and post-calculation, the true costs of a product should not be derived from viewing the object as a whole but instead, the framework explicitly states that one should analyze the individual components it is comprised of (i.e. the different elements to be discussed next). Consequently, all that is left are administrative improvements; gathering and utilizing sufficient data in order to set a cost price that (most) accurately depicts the true expenses of the sales article, hence ensuring that entries booked on relevant accounts are a (close) representation of reality.

³² Notably, complication 09 is a consequence, rather than a "stand-alone" issue (i.e. it is the result of the previous complications 05 and 06). The same applies to numbers 08 and 10, both of them also being the result of issues 01, 02, 04 and 03, 07, respectively.

Direct Material Costs: Material Quantity

In MeMon's environment, the material quantity is represented as the structure that comprises the sales article (i.e. the resources used in production; purchase articles bought and zakgoed/pre-mix that may or may not have been added as well). In the current situation, for this particular element, there are no real complications related to it; in essence, it is not about the material quantity of the final product (i.e. the structure is correct) but rather, what is important are the expenses tied to the construction (i.e. the unit price of the resources used). Consequently, the desired changes are not applicable here either.

Direct Material Costs: Unit Price per Material

In MeMon's environment, the unit price per material is represented as the price paid for the purchase articles bought and the up-to-date value of zakgoed/pre-mix (when applicable). In the current situation, the most prominent complications are having to set cost prices for the purchase articles bought that accurately depict the true expenses of acquiring them and also, having to account for the inclusion of zakgoed/pre-mix when needed (complications 01, 02, 04 and 08).

Desirably, as already stated, in terms of pre- and post-calculation, the true costs of a product should be derived from analyzing the individual components it is comprised of. However, due to the fact that currently, the cost price that is input for these individual resources is not at all a true and accurate representation of the actual expenses made upon acquiring them, a different approach is required.

For pre-calculation purposes, instead of utilizing the aforementioned cost price to determine, for instance, the final sales price (which equals cost price + profit margin), the purchase price specific to the order should be taken into account. In practice, this will result in no longer basing further calculations on an average value but in contrast, immediately countering this inaccuracy by using the true price that is applicable when producing and delivering the final product to the respective client³³. Also, whenever zakgoed/pre-mix is part of the sales article's structure, the most recent value of it should be utilized (i.e. the up-to-date value of their inventory).

For post-calculation purposes, even when purchase prices specific to the order are utilized, there will be instances where discrepancies occur; delays, faulty goods, changes in customer wishes or in short, whenever things do not go as originally planned. In these cases, price mutations arise and currently, these are recorded on their respective accounts. However, desirably, there should be a way to tie these entries to their project of origin (i.e. the order to which they relate); only then can a true post-calculation function properly and generate crucial answers such as true earnings per customer/period/project etc. Similarly, whenever the (inventory) value of zakgoed/pre-mix has altered, these mutations should be connected and retraceable as well.

Finally, the administrative complications should also be countered; gathering and utilizing sufficient data in order to set purchase prices (cost prices) that (most) accurately depict the true expenses of the resources that can be bought, hence ensuring that, when acquired, the entries booked on relevant accounts are a (close) representation of reality.

Material-related Costs

In MeMon's environment, the material-related costs are represented as transportation to the client and the extra expenses made when processing an order (e.g. stamps, legal documentation, certificates). For clarity, a distinction is made between the two and they will be further analyzed separately.

³³ To further illustrate this principle; let us assume that a purchase article required to produce the sales article has two different purchase prices tied to it (originating from supplier A and supplier B) and that the inputted cost price is the average of the two. Now, desirably, if a order has utilized the first purchase price (i.e. from supplier A), this exact expense should be taken into account and used as the foundation for further calculations (e.g. to determine the final sales price), rather than basing it on the "average" value displayed by the ERP system.

Material-related Costs: Transport

In the current situation, the most prominent complications related to this part are having to set a cost price for the transportation bought that accurately depicts the true expenses of acquiring it and eventually, delivering the final product to the client (complications 03, 07 and 10).

This is yet another one of the individual elements that a sales article is comprised of and that needs to be analyzed thoroughly in order to derive the true costs of the former. Unfortunately, similar to physical purchase articles, the cost price that is input for transportation is not at all a true and accurate representation of the actual expenses incurred upon acquiring this service from a third party and desirably, the expenses made specific to an order need to be taken into account.

For pre-calculation purposes, the aforementioned is already achieved through non-franco deliveries (where costs of transport billed to the customer are directly derived from MeMon's expenses upon securing it). Hence, shipments should only be processed via this method and franco deliveries should no longer be an option.

For post-calculation purposes, mutations regarding transport that might arise nevertheless (e.g. due to delays, rerouting) and that are currently recorded on their respective accounts should be made retraceable to the project of origin.

Finally, once more, the administrative complications should also be countered; gathering and utilizing sufficient data in order to set purchase prices (cost prices) for transportation that (most) accurately depict the true expenses of the services that can be bought, hence ensuring that, when acquired, the entries booked on relevant accounts are a (close) representation of reality.

Material-related Costs: Extra Expenses

In the current situation, the most prominent complication related to this part is the fact that the extra expenses are deemed indirect costs; they are in no way tied to the activities of order processing like the other elements are (complication 11).

Desirably, because these extra expenses are unavoidable and even a necessity for order completion, they should be accounted for, both in terms of pre- and post-calculation.

For pre-calculation purposes, some sort of estimation for these costs should be included when deriving the expenses of the final product. Because the fees for legal documentation, certificates et cetera strongly differ depending on product/order/shipment and since they are accounted for at the very end (i.e. the stage of Payment & Billing), the inclusion of a forecasted value would strongly aid in preventing dramatic differences when recording the true costs (i.e. when the extra expenses are paid) and comparing results to the initial costs that were expected to be made.

For post-calculation purposes, both deviations from the estimated extra expenses, as well as the extra expenses themselves should be tied to the project of origin.

Finally, for this part, the administrative complications still relate to gathering and utilizing sufficient data in order to accurately set (multiple) estimates for the extra expenses.

Overall, the described analyses regarding the individual elements of cost price calculation and its desired situation can be summarized as follows (refer to table 18).

The desired changes can be divided into two categories: administrative improvements (A) and practical improvements (P). Now, the former primarily relates to inputting the correct data into Exact, i.e. setting accurate values for cost prices and other relevant information, upon which entries booked on accounts are clean and easy to view (and of course as close a depiction of reality as possible).

Cost Price Framework	MeMon's Operation	Related Complication	Desired Situation	
			Pre-Calculation	Post-Calculation
Cost Object	Sales article	05, 06 (09)	A: use data to set accurate cp	A: gather data to determine accurate cp
Direct Material Costs				
Material Quantity	Structure of sales article (i.e. resources used in production)	-	-	-
Unit Price per Material	Purchase price paid for the resources bought + value zakgoed/pre-mix	01, 02, 04 (08)	P: use pps specific to the order, rather than "average" cps. P: use current (inventory) value of zakgoed/pre-mix. A: use data to set accurate cps.	P: tie price mutations to project of origin (order) P: tie revised (inventory) value zakgoed/pre-mix to project of origin (order) A: gather data to determine accurate cps
Material-related Costs				
Material-related Costs	Transport	03, 07 (10)	P: only allow for shipments via non-franco delivery A: use data to set accurate cps	P: tie price mutations to project of origin (order) A: gather data to determine accurate cps
	Extra expenses, e.g. stamps, documentation, certificates	11	P: use an accurate estimate for extra expenses that will be made A: use data to set accurate estimation	P: tie (deviations from estimated) extra expenses to project of origin (order) A: gather data to determine accurate estimation

Table 18: Desired situation summarized

In contrast, the practical improvements require a somewhat detached method of working; focusing on not using some "average" value that has been input (i.e. the cost price of an article) but instead, utilizing expenses made that are order-specific.

Currently, priority should be given to improvements of nature P rather than A; issues related to the latter will work themselves out, although it will cause an administrative mess (a good example being the offsetting of profits and losses for transportation on multiple accounts when delivering via a non-franco shipment, as discussed earlier). Even though the disorder is far from desirable, practical improvements are deemed more important because they will not solve themselves and will hurt the organization when left unattended. Here, the primary focus lies on undervaluing the true expenses of producing a product and consequently, selling the good at too low a price (i.e. profit will not be on par with expectations). Now, this is not only damaging on the short run, but long-term operations are jeopardized as well; managerial implications such as knowing which products to push, what clients to prioritize and more are all related to the presence of a proper pre- and post calculation (as derived from Phase I results) and basically, the latter is precisely what is achieved through the practical improvements.

In summary: establishing the desired situation with the focus on P comes down to creating and implementing a working pre- and post-calculation. In turn, the primary way to accomplish these are by working with order-specific costs and expenses, rather than article cost prices that depict average values.

4.2.3 Review of Exact's current database structure

The "Comparison between theoretical framework and reality" concluded with the derivation of the desired situation. Unfortunately, this solution is only applicable in "an ideal world"; in reality, there are certain limitations to take into account (i.e. the fundamental structure upon which Exact Globe is based and operates). This section focuses on precisely that; what practical restrictions are to be taken into consideration, do trade-offs need to be made and finally, these findings serve as the foundation upon which the "true solution" will be built.

Ideally, the ultimate answer to solving all of the problems and complications of the accounting system would look like this:

Establish a pre-calculation

where order-specific costs and expenses are taken into account, rather than article cost prices that depict average values.

Establish a post-calculation

where every single expense incurred is combined with total earnings, upon which a true contribution margin can be generated.

Now, the above solution would be perfect; it is exactly because of utilization of costs specific to an order (project), combined with the inclusion of every related and/or relevant expense incurred, that one is able to make an analysis to its most detailed level. In practice, this will result in knowing even the slightest deviation from forecasted vs. actual expenses made (e.g. it would be possible to view differences of mere cents when comparing the pre- and post-calculation of a specific order). Although such a privilege would be amazing (especially from an administrative perspective), it is here that the limitations of Exact Globe start to become visible.

As highlighted throughout earlier sections, Exact Globe has a distinct method of operation and it simply does not allow for article costs to be specified on such a comprehensive level (i.e. one cost price, despite multiple suppliers and purchase prices). In light of these limitations, the only work-around would require tremendous amounts of effort: having to register a new article within the system each time a new purchase price (purchase articles) or production expense (sales articles) is obtained. Consequently, with such a way of working, the ERP's database would be overloaded with entries; entries that are all physically the same (i.e. the same product or resource), but only differ in the cost price that is associated with each individual article. Of course, such a scenario would be far from ideal, resulting in countless practical issues such as a loss of clarity and/or simplicity (e.g. it will be hard to select the right article if there are countless nearly identical ones to choose from) and not to mention the hardship it would take to maintain such a large database (e.g. check for correctness of entries, pinpoint faulty entries in case of errors).

Also, it is easy to just say that "every expense incurred" (be it extra expenses such as legal documentation or unforeseen costs due to delays, for example) are to be linked to their project of origin. In practice, there are times that accomplishing such a feat is simply not possible; one legal document (needed to ship goods abroad, for instance), may be related to multiple projects (e.g. a client places an order which is to be delivered throughout multiple deliveries, i.e. projects). Consequently, the related costs cannot be properly allocated to each individual entry. Sure, in practice, it is easy to evenly split the expenses by three (if that were to be the number of different projects) but in reality, when the invoice for legal documentation is received and processed in the system, only one "project link" can be made. Furthermore, it is also possible that legal documentation applies to a set period of time (e.g. it enables the export of goods to country X for the year 2014). In turn, even if Exact were to allow multiple project links to the same expenses incurred, a faithful allocation would still remain absent due to the indefinite number of possible candidates (i.e. it is impossible to determine the number of times goods will be delivered to country X during 2014, as new orders may be received during the same time

frame). Consequently, limitations (both practical and Exact related) will prevent the inclusion of certain expenses when trying to derive contribution margins.

All of the aforementioned can be summarized as follows (refer to table 19):

Limitation	Possible work-around	Trade-off
Exact Globe only allows for one entry regarding cost price	Create multiple entries of the same article, each with a distinct cost price	Loss of database clarity, difficulty in database maintenance
Exact Globe only allows for one project link regarding expenses incurred	Account for missing expenses by hand	Manual labor (inaccuracy, use of estimates)
(Alternatively: certain expenses incurred cannot be properly allocated, with or without Exact's limitations)		

Table 19: Summary of limitations

Now knowing the limitations that are present and the possible work-arounds they require, the time has come to make trade-offs; is it really necessary to make such detailed comparisons and/or analyses that MeMon is forced to basically do a lot of labor by hand, whilst having to “contaminate” their database with numerous extra entries (that only differ in cost price) as well? Through meetings with key personnel, an answer to the above question was easily obtained: “No”.

Recall that the essence of this whole research is the *improvement* of MeMon’s current accounting system, not the entire replacement of it. Although the latter may sound a bit extreme, it is exactly what the trade-offs would amount to; throughout the years, a distinct method of operation has developed within the company. Having to re-structure the entire database by adding countless extra articles is simply not worth the time and effort in regard to the “minimum accuracy boost” it would add to contribution margin analyses. Hence, the final solution should come in the form of “working with what you got”, rather than feeling sorry for the things that are not there.

Furthermore, the next step in deriving the final solution is in regard to the pre-calculation. This is where the offer process comes into play; when the comparison between the theoretical framework and reality was made in the earlier section, this stage had not yet been discussed. The reason for this relates to the fact that MeMon already planned on revising this entire part of order processing and as of now, the enhancements are complete and the new offer process is already being used³⁴.

In essence, the offer process is the stage where initial agreements between the company, MeMon, and the customer are first settled. Here, whenever a client approaches MeMon due to interest in a certain product, the organization starts processing said request; by taking into account expenses made for securing resources, producing the final product and costs of delivery to the client, an offer is created by MeMon and sent back to the customer. In practice, some renegotiations may take place (i.e. agreements regarding the final price) and in some cases, the offer may be declined by the client altogether. However, assuming that some sort of consensus has been reached and the offer has been accepted, the revised offer process will play a crucial

³⁴ Credit for the new and revised offer process goes to Vinh. For a flowchart depicting the overview of activities and/or processes that take place in this stage, refer to Appendix Attachment VI (also courtesy of Vinh).

part for pre-calculation purposes. In the new and improved version, order-specific expenses are taken into account and used for further calculations; exactly what was described by the desired situation/solution.

Now, at first glance, it may sound strange that such an accomplishment is possible, having just described the limitations that are present regarding Exact Globe. However, referring back to table 19, it should be noted that for the pre-calculation, only the first limitation (that is, Exact only allows for one entry regarding cost price) is relevant. For the new and revised offer process, this is countered by developing a system that utilizes alternative tools and applications (Exact Synergy and Microsoft Access, to be precise). Although the database of the ERP is still used as a foundation (it contains necessary data such as clientele information), the use of both Synergy and Access combined enabled the construction of an offer process that is on par with the desired solution derived at the end of the previous section³⁵.

Finally, taking into account the limitations and trade-offs formulated earlier, combined with the efforts already made (and completed) regarding the pre-calculation (renewed offer process) and through close collaboration with MeMon's key personnel, the final solution that will be derived from this master thesis research is as follows:

Final Solution

The construction and implementation of a post-calculation system based on current ERP databases, one that is able to take into account all relevant earnings and expenses (to the extent that Exact Globe will allow) in order to derive true contribution margins.

4.2.4 Solution to the improvement of MeMon's accounting system

Now that the essence of the final solution itself is set, this section will describe the actual construction of it (i.e. the makings of the post-calculation system), along with its possible use and applications.

To start off, the system will be made using Microsoft Access; a database management system from Microsoft that allows users to build software applications. Also, Access is supported by Visual Basic for Applications (VBA), enabling rich solutions with advanced data manipulation and user control to be developed. In short; it serves as the perfect tool to create the post-calculation system.

Furthermore, the latter itself should satisfy two main goals:

Data accuracy and Trustworthiness

Results generated by the system (that is, the contribution margin analysis) need to be both a faithful representation of reality³⁶ and users should be able to rely on them without a doubt; data need to be accurate and trustworthy, respectively. The latter is further divided into the following:

Trustworthiness

- **Correctness:** refers to the structure of the data and how it matches the schema of the database and/or its accuracy (e.g. I want to call my neighbor, is this the right phone number?)

³⁵ Of course, the limitation regarding a single cost price entry per article remains. However, the essence of the offer process (and consequently, the pre-calculation) is to provide MeMon with an accurate depiction of expenses to be made, in turn molding this information to an offer that can be extended to the client. Without going into too much detail, basically, the new offer process enables the "overwrite" of certain expenses; if an offer consists of a resource with a cost price that is incorrect for the situation at hand, one is able to manually input a new value. By doing so, an offer can be created that is comprised of expenses specific to that (potential) order.

³⁶ Again, to the extent that is possible within Exact Globe's limitations.

- **Completeness:** refers to an indication of whether or not all the data necessary are available (e.g. does the phone number consist of ten digits?)
- **Timeliness:** refers to the real-world construct the data relate to (e.g. is it still my neighbor's phone number?)
- **Authorized:** refers to the permission of being able to retrieve the data in the first place (e.g. I receive my neighbor's phone number from a friend, but should he have been able to obtain it?)

Ease of use

The post-calculation system itself should be developed keeping end-users in mind; that is, it needs to be simple and easy to use, requiring minimum input to generate the results desired.

Taking these two goals into consideration, first, a “manual” post-calculation is derived. By doing so, I will further familiarize myself with both Exact Globe and its database operations/structure. Also, the results generated by hand will serve as an excellent example of how things should look like in the automated Access version (i.e. what outcomes it should be able to deliver).

The first step in deriving the manual post-calculation is the selection of projects to analyze. For this, the following format will be used upon which possible candidates are assessed (refer to table 20):

Criteria	Assessment
Sales Article	[consists of a single structure / multiple structures]
Purchase articles that comprise the structure	[all are obtainable from one supplier / at least one is obtainable from multiple suppliers]
Zakgoed and/or Pre-Mix	[zakgoed yes/no, pre-mix yes/no]
Transportation fees	[included in sales price, i.e. franco / separately billed, i.e. non-franco / no transport required, e.g. clients picks up goods or handles shipping himself]
Transportation	[obtainable from one supplier / obtainable from multiple suppliers / not applicable]
Extra expenses	[yes / no]

Table 20: Assessment format

Also, it should be noted that the above criteria and their possible assessments are based on the complications that are currently present regarding Exact's database operations (refer back to table 17 and/or figure 14). Now, using table 20, different projects are selected that, due to their difference in criteria assessments, form distinct scenarios from which the contribution margin will be derived by hand.

The following is a representation of selections made (refer to table 21).

From this, it can be seen that scenarios have been chosen that strongly differ from one another regarding complexity (e.g. the inclusion of zakgoed and/or pre-mix, multiple suppliers from which goods/services are obtained). By doing so, it will ensure the construction of a post-calculation system that is able to derive correct contribution margins in every situation possible, not one that only works if specific criteria are (not) met.

Criteria	Scenario I	Scenario II	Scenario III	Scenario IV
Project	11301796	11301855	11301079	11301297
Sales Article	Multiple structures (2)	Single structure	Single structure	Single structure
Purchase articles that comprise the structure	Only obtainable from one supplier	Only obtainable from one supplier	At least one is obtainable from multiple suppliers	At least one is obtainable from multiple suppliers
Zakgoed and/or Pre-Mix	Zakgoed no, Pre-Mix no	Zakgoed no, Pre-Mix no	Zakgoed yes, Pre-Mix no	Zakgoed yes, Pre-Mix yes
Transportation fees	Franco sales price	Transportation not required	Franco sales price	Separately billed
Transportation	Obtainable from multiple suppliers	Not applicable	Obtainable from one supplier	Obtainable from multiple suppliers
Extra expenses	No extra expenses	No extra expenses	Extra expenses	No extra expenses

Table 21: Selected scenarios

Here, Scenario III will be discussed in detail; the remaining ones are included in Appendix Attachment VII. Of course, they follow the same method of analysis.

First, the original offer related to this project is as follows (refer to table 22):

Organische basismeststoffen:	Orgevit
	25 kg - 20ft container
Inkoop Hubun	62,50
Zakgoed	12,00
Opzakken	15,00
Stouwen / Pallet	5,00
Transport FOB Rotterdam	23,81
Marge	20,00
Verkoop	138

Calculatie transportkosten:	
Voortransport Bunschoten - Rotterdam	250
THC	195
Delta toeslag	40
ISPS	15
	500
Transportkosten per ton (/21):	23,81

Table 22: Original offer (project 11301079)

Using Exact Globe's database, relevant information (expenses incurred, earnings made) regarding this project are gathered and analyzed, from which the following post-calculation is derived (refer to figure 16).

Post-calculation Scenario III

Client | Agro System
 Product | Orgevit
 Amount | 21 ton
 Sales Order | 11301079

		Offer €		Exact €		Actual €	Comments
Total “te ontvangen facturen”		2484.51		2159.00		2159.00	
Comprised of							
Base article	21*62.50	1312.50	21*60.00	1260.00	21*60.00	1260.00	
Zakgoed	21*12.00	252.00	in stock	-	in stock	-	no need to be purchased
Handling zakgoed	21*15.00	315.00	21*15.00	315.00	21*15	315.00	
Stowing	21*5.00	105.00	21*5.00	105.00	21*5.00	105.00	
Transport & Extra Expenses							
Shipping	21*11.90	249.90	21*13.81	290.00	1*290	290.00	
THC	21*9.29	195.09	21*6.55	137.50	1*137.50	137.50	
ISPS	21*0.71	14.91	21*0.71	15.00	1*15.00	15.00	
BL	21*1.90	<u>39.90</u>	21*1.74	<u>36.50</u>	1*36.50	<u>36.50</u>	
		2484.51		2159.00		2159.00	
Adjustments zakgoed		-	21*40*0.28	<u>232.68</u>	21*40*0.28	<u>232.68</u>	zakgoed taken from stock
Total costs of goods sold		2484.51		2391.68		2391.68	
Total Earnings	21*138	<u>2898.00</u>	21*134	<u>2814.00</u>	21*138	<u>2898.00</u>	sales price increase
Total Profit		413.49		422.32		506.32	
Total price mutations						- 21.00	
Comprised of							
Deviation forecast						- 32.50	
Deviation forecast						+ 5.00	
Deviation forecast						+ <u>6.50</u>	true expenses more than
						- 21.00	initially forecasted

New Total Profit	413.49	422.32	485.32
Profit Margin (per ton)	19.69	20.11	23.11

PROFIT MARGIN ANALYSIS

Profit Margin Goal : 20.00 per ton

True Profit Margin	$485.32/21$	23.11	$401.32/21$	19.11	$485.32/21$	23.11
Deviation (in % from goal)		+15.55		-4.45		+15.55

Figure 16: Post-Calculation results (project 11301079)

The manual post-calculation is divided into three distinct columns: **Offer**, **Exact**, and **Actual**.

Offer

Calculations made here are based on the values as set in the original offer (refer back to table 22). For instance, the base article was priced at 62.50, hence resulting in a total expense of 1312.50 (costs times amount).

Exact

Calculations made here are based on the cost price values that were present in Exact Globe, at the time of the project. For instance, the base article's cost price was 60.00, hence resulting in a total expense of 1260.00.

Actual

This column is the one upon which the automated Access post-calculation system will be built. Figures shown here are directly derived from relevant accounts (e.g. 2200 for "Te ontvangen facturen", 8000 for "Profit on sales"). Because of this, it is also the only one which includes potential price mutations³⁷ (derived from 7200/7210).

Now, the crucial part is of course the PROFIT MARGIN ANALYSIS, detailing the exact contribution margin earned on this particular project. Again, results are divided according to the three different columns, **Offer**, **Exact** and **Actual**, although the latter is once more the one to focus on (in fact, the other two are only included to make the manual post-calculation as detailed as possible).

From the analysis, it can be seen that the true profit margin for this project amounts to a total of 23.11 per ton (which is actually a +15.55% increase of the goal set out to meet, 20.00 per ton). For the construction of the automated Access version of the post-calculation, the manual variant can now be used as a reference; expenses and earnings taken into account should be identical to the ones from the **Actual** column, in turn leading to the same figure of 23.11 as the true profit margin.

For the remaining scenarios selected, the true profit margins are as follows (refer to table 23). As stated, the detailed post-calculation results can be found in Appendix Attachment VII.

	Scenario I	Scenario II	Scenario III	Scenario IV
Project	11301796	11301855	11301079	11301297
True Profit Margin (per ton)	18.50	42.67	23.11	62.28

Table 23: True profit margin analysis

Being able to derive the contribution margin by hand, the transition to an automated Access post-calculation should be facilitated as now, it is known exactly what expenses/earnings need to be taken into account and precisely where these are located within Exact's database structure. Without further ado, the final solution to ensure the improvement of MeMon's current accounting system, i.e. through the construction and implementation of a proper post-calculation, is as follows:

³⁷ Actually, for the columns of Offer and Exact, price mutations are not relevant to begin with; these two methods basically serve as a pre-calculation of sorts (i.e. detailing expected costs to be made). Consequently, price mutations are not to be included, as one cannot account for differences at the very start (they only become apparent at the end, i.e. when the definitive invoices for the resources are received and processed).

A system developed within Microsoft Access, presented as a user-form from which personnel can specify exactly what results they want to see, the latter of which is tied to numerous different queries and databases that serve as its foundation.

The screenshot shows a Microsoft Access user-form with a light blue background. The form is divided into five horizontal sections, each labeled on the right side with a yellow bracket and text: Part I, Part II, Part III, Part IV, and Part V.

- Part I:** Contains input fields for 'Project', 'Datum (dd-mm-jjjj)', 'Van', 't/m', 'Debiteur', 'Crediteur', 'Artikelcode', and 'Omschrijving'. A 'Zoeken' button is located at the bottom right of this section.
- Part II:** Features a large white rectangular area for 'Resultaten'. To its right are three buttons: 'Zoomen', 'Details', and 'Marge Analyse'.
- Part III:** Starts with a section header 'Project: Exact Globe'. Below it are input fields for 'Zakgoed', 'Wisselkoers', and 'Pre-Mix'. A 'Reset' button is positioned to the right of the 'Wisselkoers' field.
- Part IV:** Begins with a section header 'Zoom: Producten'. It contains a large white rectangular area. Below this area are two buttons: 'Product Marge' and 'Exporteren'.
- Part V:** Starts with a section header 'Zoom: Exact Globe'. It includes input fields for 'Zakgoed', 'Wisselkoers', and 'Pre-Mix'. A 'Reset' button is to the right of the 'Wisselkoers' field. Below these are input fields for 'Correctie' and an 'Update' button.

The above image represents a direct screen capture of the form.

Essentially, the post-calculation system is able to calculate the true profit margin per project. In order to accomplish the latter, all relevant data related to the project are gathered through the use of queries, which, in turn, utilize the databases of Exact Globe as their source material. The precise workings will be discussed in detail but first, the form itself is explained.

Part I

Here, users can specify which contribution margins they want to analyze. One can directly search for a project [Project], or view results by inputting search criteria; view projects that have been completed within a specific time frame [Datum van, Datum t/m], that contain a particular client [Debiteur] or supplier [Crediteur], or that include an explicit article [Artikelcode, Omschrijving].

Part II

Having entered the information in Part I and upon clicking “Zoeken”, the projects that meet the criteria are shown here. From this, a user can simply select the project he/she wants to analyze, and after clicking “Marge Analyse”, the total profit per ton for this particular project will be shown. Also, there is the option to view “Details”, allowing one to see exactly which expenses, earnings, etc. are taken into account for the derivation of the contribution margin. Lastly, “Zoomen” enables users to further delve into the project itself.

Part III

Upon performing the “Marge Analyse”, [Zakgoed] and [Pre-Mix] will show the respective cost price of these resources that is taken into account when deriving the true profit margin (when applicable). Just like everything else, the system utilizes values that are directly derived from Exact’s database. However, the latter does not account for *historic* cost prices, meaning that whatever value is shown, is the cost price that applies to the resource at this very moment. In practice, however, the selected project may have been completed a while back, at a time when a *different* cost price was used. To counter this, manual values can be input under Project: Handmatig [Zakgoed] and [Pre-Mix] that, upon clicking on “Update”, will overwrite Exact’s respective cost price in the derivation of the true profit margin (logically, “Reset” will reset the values to their original state). The same principle applies to the currency; one may want to input a new value in [Wisselkoers] to, for instance, account for a different, more up-to-date rate.

Finally, as stated, the system itself is limited to Exact’s own capabilities. Hence, there are instances where expenses are incurred or extra profits made, but they are simply not processed within the ERP system itself. Obviously, the post-calculation will then not be able to include these missing expenses/earnings either. Still, to counter this, a manual [Correctie] can be input, allowing for more/less gross profit to be taken into account when deriving the true profit margin (to counter missing earnings and expenses, respectively).

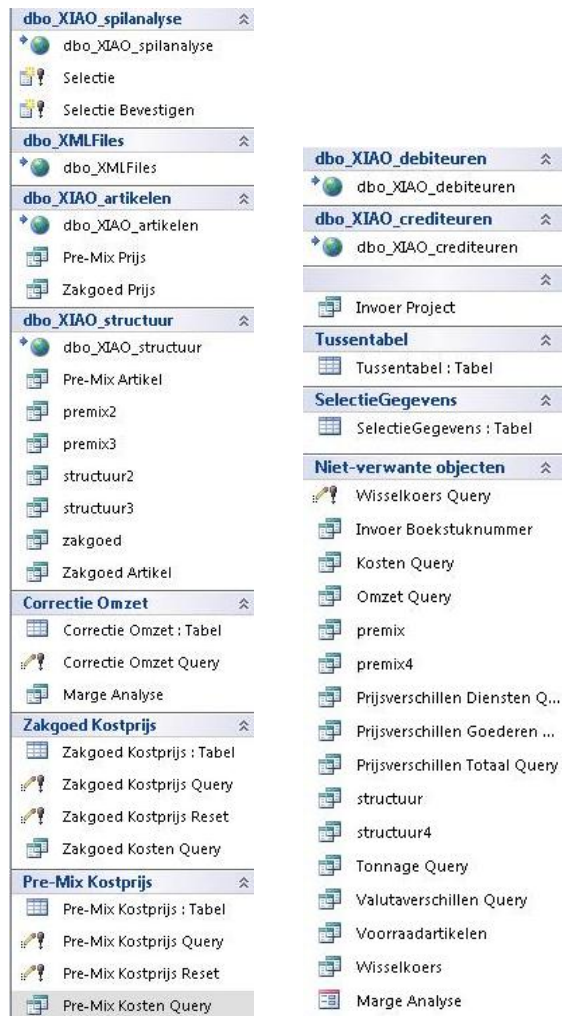
Part IV

If the “Zoomen” option has been utilized in Part II, details of the selected project are shown here. In essence, this allows a user to apply the contribution margin analysis on an even deeper level, i.e. per product. This is done by simply choosing the good and then clicking on “Product Marge”, whereas ‘Exporteren’ will store the results in a separate database (for later use, if necessary).

Part V

Basically the same functionality as described under Part III, only now applicable to products and their contribution margins (i.e. the zoomed level), rather than projects.

Now having discussed the form itself, it is time to look at the inner-workings of the system.



Images represent direct screen captures of the post-calculation queries, tables and databases.

Databases

The databases used are directly linked with Exact Globe, hence ensuring that if any new information is input (or existing data updated) at the latter, the post-calculation system will automatically include/process it in future contribution analyses as well.

From the screen captures, the databases are:

- dbo_XIAO_spilanalyse (containing fundamental Exact database information such as accounts)
- dbo_XIAO_artikelen (containing all articles input in Exact)
- dbo_XIAO_structuur (containing the different structures an article is comprised of)
- dbo_XIAO_debiteuren (containing all clients input in Exact)
- dbo_XIAO_crediteuren (containing all suppliers input in Exact)

Tables

Specific information is stored here, primarily to aid the successful execution of certain queries.

From the screen captures, the tables are:

- Correctie Omzet (used to aid the execution of “Correctie Omzet Query”)
- Zakgoed Kostprijs (used to aid the execution of “Zakgoed Kostprijs Query”)
- Pre-Mix Kostprijs (used to aid the execution of “Pre-Mix Kostprijs Query”)

- Tussentabel (used to aid the execution of “Selectie Bevestigen”)
- SelectieGegevens (used to aid the execution of “Marge Analyse”)

Queries

Both the tables and databases that are present in the post-calculation system include various data. In order to perform a profit margin analysis, a specific selection is made (i.e. the data that are relevant to a certain project). In doing so, we are basically in *querying* the system to look for the information needed (hence the term). Furthermore, a distinction is made between different kinds of queries; the ones used here are Update queries, Table-make queries and (basic) Select queries.

From the screen captures, the Update queries are:

- Correctie Omzet Query (used to allow the user to manually input a gross profit correction)
- Zakgoed Kostprijs Query (used to allow the user to manually input a cost price for zakgoed)
- Zakgoed Kostprijs Reset (used to automatically reset the zakgoed cost price to its original value)
- Pre-Mix Kostprijs Query (used to allow the user to manually input a cost price for pre-mix)
- Pre-Mix Kostprijs Reset (used to automatically reset the pre-mix cost price to its original value)
- Wisselkoers Query (used to allow the user to manually input a currency rate)

From the screen captures, the Table-make queries are:

- Selectie (used to create the table “Tussentabel”)
- Selectie Bevestigen (used to create the table “SelectieGegevens”)

From the screen captures, the Select queries are:

- Everything with “premix” in its name (used to determine whether or not pre-mix is present in the project and if so, what its associated quantity and cost price is)
- Everything with “zakgoed” in its name (used to determine whether or not zakgoed is present in the project and if so, what its associated quantity and cost price is)
- Everything with “structuur” in its name (used to determine which structure is used for the sales article in the project, if the former were to have multiple)
- Invoer Project/Boekstuknummer (used to ensure that all relevant data are obtained from dbo_XIAO_spilanalyse, upon which the following queries are based:)
- Kosten/Omzet/Prijsverschillen/Valutaverschillen/Tonnage Query (used to determine total project costs, earnings, price mutations, currency mutations and quantity sold, respectively)
- Marge Analyse (uses the results of Kosten, Omzet, Prijsverschillen, Valutaverschillen and Tonnage Query in order to derive the project’s profit margin)

Specifically, the profit margin is calculated as³⁸:

$$\text{Profit Margin} = \frac{\text{Opbrengsten} - \text{Kosten} + \text{Prijsverschillen} + \text{Valutaverschillen}}{\text{Tonnage}}$$

³⁸ For a more detailed analysis as to how this profit margin formula was derived, refer to Appendix Attachment VIII.

Now knowing how the post-calculation system operates, it is time to check whether or not it actually produces the results we are looking for.

Recall that the contribution margins of the different scenarios derived by hand were as follows:

	Scenario I	Scenario II	Scenario III	Scenario IV
Project	11301796	11301855	11301079	11301297
True Profit Margin (per ton)	18.50	42.67	23.11	62.28

Table 23 (copied from p. 84): True profit margin analysis

Using the post-calculation system, the following results are derived:

Scenario I

Project	Totale Kosten	Totaal Zakgoed	Totaal Pre-Mix	Totale Prijsverschillen	Totale Valutaverschillen	Totale Omzet	Correctie Omzet	Tonnage	Marge per Ton
11301796	8604	0	0	0	0	9048	0	24	18,5

True Profit Margin: 18.50 per ton

Scenario II

Project	Totale Kosten	Totaal Zakgoed	Totaal Pre-Mix	Totale Prijsverschillen	Totale Valutaverschillen	Totale Omzet	Correctie Omzet	Tonnage	Marge per Ton
11301855	9141	0	0	9	0	9900	0	18	42,6666666666667

True Profit Margin: 42.67 per ton

Scenario III

Project	Totale Kosten	Totaal Zakgoed	Totaal Pre-Mix	Totale Prijsverschillen	Totale Valutaverschillen	Totale Omzet	Correctie Omzet	Tonnage	Marge per Ton
11301079	2159	232,68	0	-21	0	2898	0	21	23,1104761904762

True Profit Margin: 23.11 per ton

Scenario IV

Project	Totale Kosten	Totaal Zakgoed	Totaal Pre-Mix	Totale Prijsverschillen	Totale Valutaverschillen	Totale Omzet	Correctie Omzet	Tonnage	Marge per Ton
11301297	777,5	46	2113,125	0	0	3503,85	0	5,75	98,6478260869565

True Profit Margin: 98.65 per ton

From these results, it can be seen that every value is exactly equal to its manually-derived counterpart, except for Scenario IV: the profit margin shown by the post-calculation far exceeds the outcome calculated by hand ($98.65 > 62.28$). Upon further inspection, it becomes clear why this is the case:

Scenario IV's project (11301297) includes a sales article containing both zakgoed and pre-mix. While the former's cost price is accurate, pre-mix's cost price has changed; currently, it is valued at 735 per ton. Yet, this is not the same value that was taken into account when the project was initially completed; that value would be 759.

Resultaten

11301297

Zakgoed 0,2 Wisselkoers n.v.t.

Pre-Mix 735

Project: Exact Globe

Project: Handmatig

Zakgoed Wisselkoers n.v.t.

Pre-Mix 759 Correctie 0

Zoomen

Details

Marge Analyse

Reset

Update

Consequently, manually inputting and updating the cost price of pre-mix should yield better results (as illustrated above).

The revised profit margin now becomes:

Project	Totale Kosten	Totaal Zakgoed	Totaal Pre-Mix	Totale Prijsverschillen	Totale Valutaverschillen	Totale Omzet	Correctie Omzet	Tonnage	Marge per Ton
11301297	777,5	46	2182,125	0	0	3503,85	0	5,75	86,6478260869565

True Profit Margin: 86.65 per ton

Although closer to what it should be (62.28), it is still not right. Upon even further inspection, we find the cause:

103095	NPK 12-4-9+2MgO+1	Product	OMGB1-2	8000	Opbrengst verkopen	0	3363,75	5,75	Ton
120268	blokpallettransport	Transport		8000	Opbrengst verkopen	0	140,1	6	Pallet

From the capture, it can be seen that profit is earned on transportation (140.10), yet no expenses are made to counter these earnings. Recall that by default, MeMon earns no contribution on transport and that it is merely an extra service provided by the company to ensure customer satisfaction. Hence, it can be concluded that, although not present in Exact's database, extra expenses are most definitely incurred with regard to shipment to the client.

Project: Handmatig

Zakgoed Wisselkoers n.v.t.

Pre-Mix 759 Correctie -140,10

Reset

Update

Taking into account this information, combined with the manual input of the correct cost price for Pre-Mix, results should now be accurate...

Project	Totale Kosten	Totaal Zakgoed	Totaal Pre-Mix	Totale Prijsverschillen	Totale Valutaverschillen	Totale Omzet	Correctie Omzet	Tonnage	Marge per Ton
11301297	777,5	46	2182,125	0	0	3503,85	-140,1	5,75	62,2826086956522

True Profit Margin: 62.28

...and indeed they are.

Now knowing that the post-calculation is indeed able to generate correct results, an extra verification is made to see whether or not the goals formulated earlier have been satisfied. That is: is the system itself easy to use and are derived profit margins accurate and trustworthy?

Ease of use

The post-calculation system has definitely been developed whilst keeping end-users in mind. This is most apparent by having the “Marge Analyse” query tied to a form; using the latter, anyone can specify the distinct results he/she wants to see by filling out the search criteria. From there on forward, it is simply a matter of “point and click” to generate the desired outcomes.

Data Accuracy and Trustworthiness

- Correctness: the derived profit margins are an exact replica of the results calculated by hand.
- Completeness: each project’s margin analysis includes “Opbrengsten”, “Kosten”, “Prijsverschillen”, “Valutaverschillen” and “Tonnage”.
- Timeliness: the majority of Exact’s data are fixed (i.e. correct, no matter when it is viewed). Those that are not (i.e. cost prices for zakgoed/pre-mix) can be manually overwritten.
- Authorized: data are retrieved from shared databases (i.e. accessible by anyone from the organization), thus ensuring that no information is left out/excluded.

Hence, it can be concluded that the goals set earlier have been met and that overall, the post-calculation system is a success.

4.3 Meeting desires

Having successfully completed the final solution in the form of a proper post-calculation system, the desires that were initially formulated back in the first phase (Definition & Focus) and from which a distinct selection has been made, can now be met.

Deliverables:

- Answers to people’s wishes (i.e. through utilization of the final solution, the reduced/focused list of desires can now be accounted for)

Recall that the questions to be answered were as follows:

Desire	Category (level)
What are the net earnings made on client X during the dimension? -per week -per month -per year -per season -per contract period	Project/ Transaction
What are the net earnings made during the dimension that include supplier X? -per week -per month -per year -per season -per contract period	Project/ Transaction
What are the net earnings made during the dimension? -per week -per month -per year -per season -per contract period	Project/ Transaction
What is the contribution margin on product X during the dimension/client combination? -sales article -production article -purchase article -per week -per month -per year -per season -per contract period	Project/ Transaction

Table 16 (copied from p. 58): Reduced overview of desired improvements

Now, the post-calculation system itself is able to derive precise profit margins per project. With it, all questions depicted above can be answered, as each and every one of them is simply related to analyzing a series of different projects.

For each desire to be met, random examples will be input in the post-calculation system. Results are as follows:

What are the net earnings made on client X during the dimension?

For this question, the following example will be analyzed:

Client: Agro Bodemvoeding B.V.

Dimension: 2-week period (between 01-06-2013 and 14-06-2013)

Hence, the question becomes:

What are the net earnings made on client Agro Bodemvoeding B.V. during the 2-week period between 01-06-2013 and 14-06-2013?

First, the search criteria are entered into the form:

Datum (dd-mm-jjjj)

Van t/m

Debiteur

Crediteur

Artikelcode Omschrijving

Zoeken

Resulting in the following projects (6 results):

Resultaten

- 11300912
- 11301292
- 11301294
- 11301311
- 11301312
- 11301322

Zoomen

Details

Marge Analyse

Now, performing the “Marge Analyse” on the first project, the following results are obtained:

Project	Totale Kosten	Totaal Zakgoed	Totaal Pre-Mix	Totale Prijsverschillen	Totale Valutaverschillen	Totale Omzet	Correctie Omzet	Tonnage	Marge per Ton
11300912	10000	0	0	0	0	10088	0	25,22	3,4892942109437

Doing the same for the remaining projects yields the following outcomes (refer to table 24):

Project	Profit Margin (€ per ton)	Quantity Sold (ton)	Earnings (€)
11300912	3.49	25.22	88.02
11301292	0.00	20.81	0.00
11301294	1.83	25.26	46.23
11301311	1.83	25.26	46.23
11301312	7.86	25.38	199.49
11301322	14.15	24.30	343.85
Total	-	-	723.82

Table 24: First desire results

Hence, a total of €723.82 has been earned on client Agro Bodemvoeding B.V. during the 2-week period between 01-06-2013 and 14-06-2013.

What are the net earnings made during the dimension that include supplier X?

For this question, the following example will be analyzed:

Supplier: Hubun Bodemvoeding B.V.

Dimension: 1-week period (between 01-11-2013 and 07-11-2013)

Hence, the question becomes:

What are the net earnings made during the 1-week period between 01-11-2013 and 07-11-2013 that include supplier Hubun Bodemvoeding B.V.?

First, the search criteria are entered into the form:

Datum (dd-mm-jjjj)

Van t/m

Debiteur

Crediteur

Artikelcode Omschrijving

Resulting in the following projects (8 projects):

Resultaten

11301775
11301776
11301800
11301806
11301827
11301843

Now, performing the “Marge Analyse” on the first project, the following results are obtained:

Project	Totale Kosten	Totaal Zakgoed	Totaal Pre-Mix	Totale Prijsverschillen	Totale Valutaverschillen	Totale Omzet	Correctie Omzet	Tonnage	Marge per Ton
11301775	1876,25	328,9375	0	0	0	2636,25	0	23,75	18,15

Doing the same for the remaining projects yields the following outcomes (refer to table 25):

Project	Profit Margin (€ per ton)	Quantity Sold (ton)	Earnings (€)
11301775	18.15	23.75	431.06
11301776	18.15	23.75	431.06
11301800	15.33	25.20	386.32
11301806	29.55	168.00	4964.40
11301827	20.90	23.75	496.38
11301843	17.50	36.26	634.55
11301856	17.51	115.62	2024.51
11301941	17.00	23.75	<u>403.75</u>
Total	-	-	9772.03

Table 25: Second desire results

Hence, a total of €9772.03 has been earned during the 1-week period between 01-11-2013 and 07-11-2013 that includes supplier Hubun Bodemvoeding B.V.

What are the net earnings made during the dimension?

For this question, the following example will be analyzed:

Dimension: 2-day period (between 01-09-2013 and 02-09-2013)

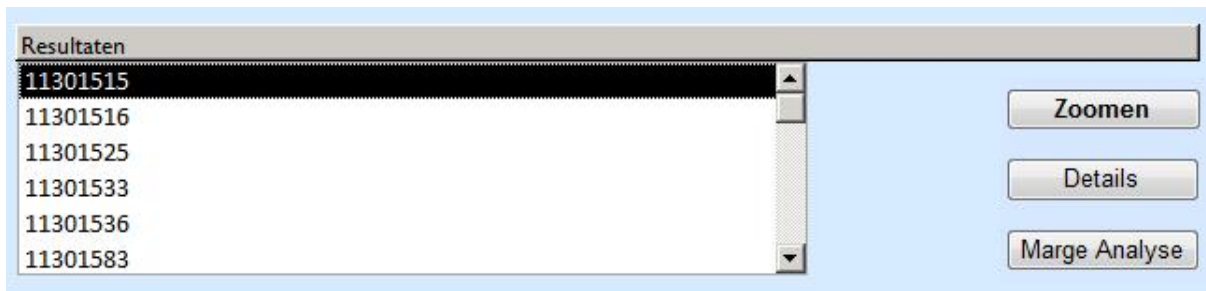
Hence, the question becomes:

What are the net earnings made during the 2-day period between 01-09-2013 and 02-09-2013?

First, the search criteria are entered into the form:

Project	<input type="text"/>		
Datum (dd-mm-jjjj)			
Van	<input type="text" value="1-9-2013"/>	t/m	<input type="text" value="2-9-2013"/>
Debiteur	<input type="text"/>		
Crediteur	<input type="text"/>		
Artikelcode	<input type="text"/>	Omschrijving	<input type="text"/>
			<input type="button" value="Zoeken"/>

Resulting in the following projects (9 results):



Now, performing the “Marge Analyse” on the first project, the following results are obtained:

Project	Totale Kosten	Totaal Zakgoed	Totaal Pre-Mix	Totale Prijsverschillen	Totale Valutaverschillen	Totale Omzet	Correctie Omzet	Tonnage	Marge per Ton
11301515	3458	0	0	-14	0	3844,4	0	25,2	14,7777777777778

Doing the same for the remaining projects yields the following outcomes (refer to table 26):

Project	Profit Margin (€ per ton)	Quantity Sold (ton)	Earnings (€)
11301515	14.78	25.20	372.46
11301516	20.09	25.20	506.27
11301525	32.60	201.30	6562.38
11301533	12.25	11.86	145.29
11301536	74.57	23.00	1715.11
11301583	228.00	20.00	4560.00
11301585	19.55	25.00	488.75
11301590	22.56	24.75	558.36
11301606	22.67	24.00	544.08
Total	-	-	15452.70

Table 26: Third desire results

Hence, a total of €15452.70 has been earned during the 2-day period between 01-09-2013 and 02-09-2013.

What is the contribution margin on product X during the dimension/client combination?

For this question, the following example will be analyzed:

Client: Simonis B.V.

Dimension: 1-week period (between 01-01-2013 and 07-01-2013)

Product: Kippenmestpellets – basis (article code 101095)

It should be noted that, from all of the (focused) desires to be met, this particular one is deemed the most significant. In practice, MeMon wants to know the contribution margin on a specific base article (i.e. a purchase article). However, due to its nature, the product itself is not sold but rather, it is used in production in order to create a sales article, and it is the latter that is sold. Consequently, the contribution margin of the base article may differ, depending on exactly how it has been used (i.e. what sales product is created with it). Also, other factors such as client, periods and the like may have an influence as well.

What is the contribution margin on sales product X made on client Simonis B.V. during the 1-week period between 01-01-2013 and 07-01-2013, the former of which consists of Kippenmestpellets (base article)?

As usual, first, the search criteria are entered into the form (related to the product and dimension combination):

Project	<input type="text"/>		
Datum (dd-mm-jjjj)			
Van	<input type="text" value="1-1-2013"/>	t/m	<input type="text" value="7-1-2013"/>
Debiteur	<input type="text"/>		
Crediteur	<input type="text"/>		
Artikelcode	<input type="text" value="101095"/>	Omschrijving	<input type="text"/>
			<input type="button" value="Zoeken"/>

Resulting in the following projects (6 results):

Resultaten

11201649

11201791

11202166

11202187

11300001

11300008

Zoomen

Details

Marge Analyse

Now, clicking “Zoomen” when selecting the first project yields the following additional information:

Zoom: Producten			
103140	kippenmestpellets - 840x25 kg Woprofert Iran - los gestouwd	231	Ton

Product Marge

Exporteren

In other words; the project only consists of a single sales article (Woprofert Iran).

Finally, selecting the product and then performing the “Product Marge” results in:

Marge Analyse	Product Marge
Product Marge	22,5

Doing the same for the remaining projects yields the following outcomes (refer to table 27):

Project	Client	Sales Article	Contribution (€ per ton)
11201649	Simonis B.V.	Woprofert Iran	22.50
11201791	BROS Sp.j.	Poultry Manure	25.17
11202166	Beckmann Production	Orgakam	23.00
11202187	UAB Arvi fertis	Poultry Manure	19.67
11300001	Dofco B.V.	Bigbag 1200 kg	25.67
11300008	FUENTES FERTILIZANTES	Orgevit	<u>14.32</u>
Average	-	-	21.72

Table 27: Final (and most significant) desire results

Hence, for the 1-week period between 01-01-2013 and 07-01-2013, the contribution margin on kippenmestpellets ranges from €14.32 to €25.67 (with an average of €21.72), depending on the project and/or sales article that is analyzed.

Now answering the complete question (i.e. the product and dimension/client combination): A contribution margin of €22.50 per ton has been earned on products sold to client Simonis B.V. during the 1-week period between 01-01-2013 and 07-01-2013, the former of which consists of kippenmestpellets (base article).

CHAPTER SUMMARY

For MeMon, the most important questions to be answered are:

Desire	Category (level)
What are the net earnings made on client X during the dimension? -per week -per month -per year -per season -per contract period	Project/ Transaction
What are the net earnings made during the dimension that include supplier X? -per week -per month -per year -per season -per contract period	Project/ Transaction
What are the net earnings made during the dimension? -per week -per month -per year -per season -per contract period	Project/ Transaction
What is the contribution margin on product X during the dimension/client combination? -sales article -production article -purchase article -per week -per month -per year -per season -per contract period	Project/ Transaction

Table 16 (copied from p. 58): Reduced overview of desired improvements

In order to do so, a post-calculation system will be built utilizing the company's cost price framework as its foundation. Furthermore, ERP limitations have to be taken into account, as their possible work-arounds are simply not worth the trade-off.

Limitation	Possible work-around	Trade-off
Exact Globe only allows for one entry regarding cost price	Create multiple entries of the same article, each with a distinct cost price	Loss of database clarity, difficulty in database maintenance
Exact Globe only allows for one project link regarding expenses incurred (Alternatively: certain expenses incurred cannot be properly allocated, with or without Exact's limitations)	Account for missing expenses by hand	Manual labor (inaccuracy, use of estimates)

Table 19 (copied from p. 78) : Summary of limitations

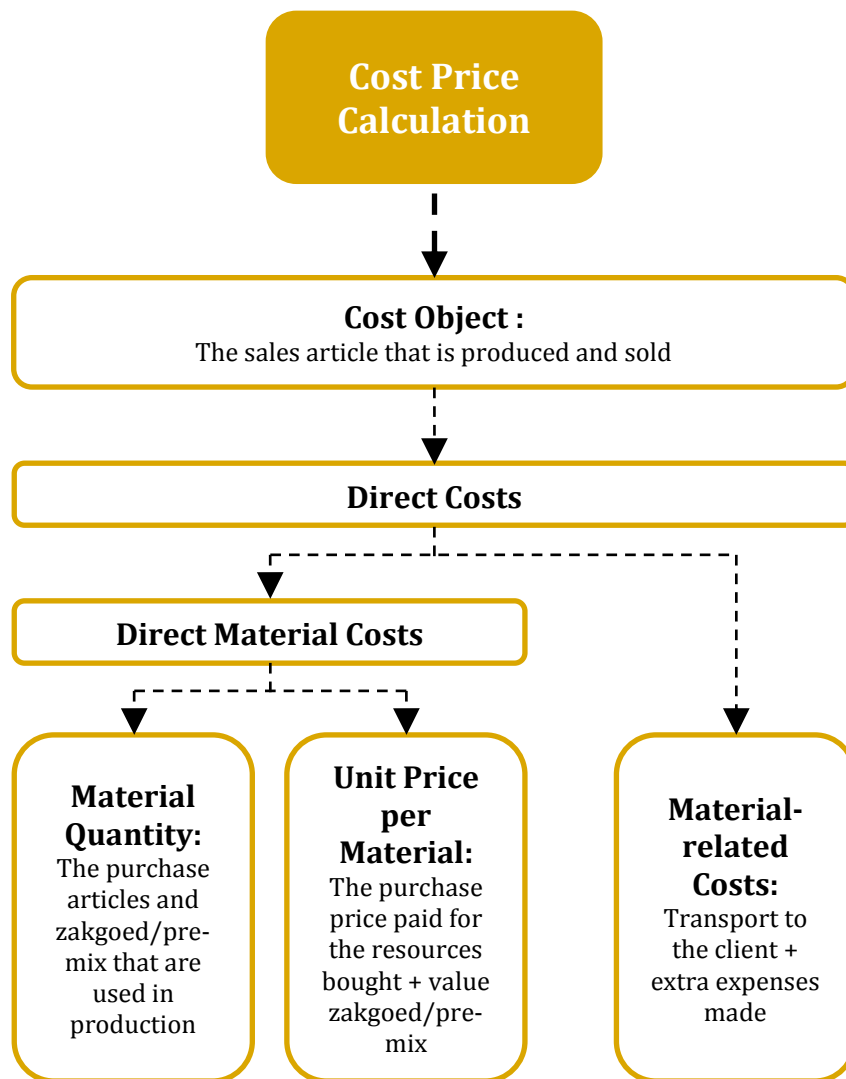


Figure 15 (copied from p. 73) : MeMon's application of the framework

The final solution itself is described as follows:

A system developed within Microsoft Access, presented as a user-form from which personnel can specify exactly what results they want to see, the latter of which is tied to numerous different queries and databases that serve as its foundation.

With it, results such as

Project	Totale Kosten	Totaal Zakgoed	Totaal Pre-Mix	Totale Prijsverschillen	Totale Valutaverschillen	Totale Omzet	Correctie Omzet	Tonnage	Marge per Ton
11301297	777,5	46	2182,125	0	0	3503,85	-140	5,75	62,3

can be generated.

CHAPTER 5: Implementation

This chapter is dedicated to the fourth and final phase of the research: implementation. The previous stages have concluded by first deriving the final solution to improve MeMon's accounting system, then later on actually developing it and putting it to use. Now, to truly reap the benefits of the post-calculation system, guidance and clear communication are essential; not only in knowing what the automated system of profit margin analysis does and *how* to use it, but also to ensure that people will *actually* use it.

Deliverables:

- Helping tools to guide employees;
 - └ Tutorial: enabling employees to act in the correct manner when facing specific situations and/or scenarios (i.e. understanding the post-calculation system)
 - └ Limitations: enabling employees to understand the possibilities of the post-calculation system (and consequently, its limitations)
- Communication enhancement throughout the organization (i.e. a solution has been derived and now, personnel need to see/hear its potential, hence ensuring that it will truly be put to good use)

5.1 The post-calculation system explained (tutorial)

To start off, tools will be provided to let employees familiarize themselves with the post-calculation system. Because people want to see (proper) results and do not really care about exactly how these are obtained, the focus will lie on the user-interface (i.e. the form in which one can specify the outcomes to be generated). Basically, compared to section 4.2.4 (p. 85-86), now, a more comprehensive explanation is given.

1. Project

Here, you can directly specify the project you want to analyze. An example of a correct input would be [11301079].

2. Date

Here, you can specify the period to which the results must relate (from dd-mm-yyyy to dd-mm-yyyy). An example of a correct input would be from [1-1-2013] to [31-1-2013], i.e. all projects performed during January, 2013.

3. Client (debtor)

Here, you can specify the client to which the results must relate. Also, this entry has an "Auto-fill" option, hence ensuring that only clients that are known/stored in Exact can be entered. An example of a correct input would be [Agro System S.A.R.L.].

4. Supplier (creditor)

Here, you can specify the supplier to which the results must relate. Also, this entry has an "Auto-fill" option, hence ensuring that only suppliers that are known/stored in Exact can be entered. An example of a correct input would be [Hubun Bodemvoeding B.V.].

Project

Datum (dd-mm-jjjj)
 Van t/m

Debiteur

Crediteur

Artikelcode Omschrijving

I.

Resultaten

VI.

III.

II.

Project: Exact Globe

Zakgoed Wisselkoers

Pre-Mix IV.

Project: Handmatig

Zakgoed Wisselkoers

Pre-Mix Correctie

Zoom: Producten

VIII.

VII.

Zoom: Exact Globe

Zakgoed Wisselkoers

Pre-Mix

Zoom: Handmatig

Zakgoed Wisselkoers

Pre-Mix Correctie IX.

X.

5. Article

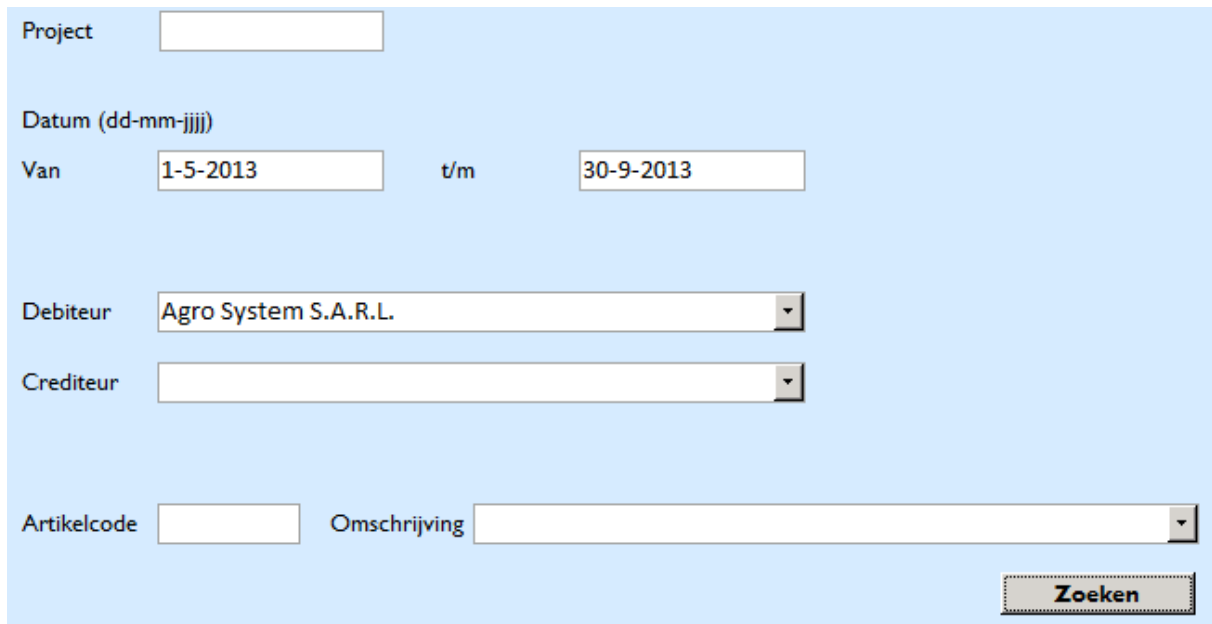
Here, you can specify the article to which the results must relate. Also, this entry has an “Auto-fill” option, hence ensuring that only articles that are known/stored in Exact can be entered. An example of a correct input would be [102747].

I. Button “Zoeken”

Upon entering your criteria, click on the button [Zoeken] to search for projects that match the input fields. If nothing has been entered, all results will be shown.

6. Results

Here, results are shown that match the input criteria. As an example, the following is entered...



The screenshot shows a search form with the following fields and values:

- Project:
- Datum (dd-mm-jjjj):
 - Van:
 - t/m:
- Debiteur: (dropdown menu)
- Crediteur: (dropdown menu)
- Artikelcode:
- Omschrijving: (dropdown menu)
- Search button: **Zoeken**

...and after clicking [Zoeken], these results are found:



The screenshot shows the search results interface with the following elements:

- Section header: **Resultaten**
- Results list:
 - 11301079
 - 11301419
 - 11301573
- Action buttons:
 - Zoomen**
 - Details**
 - Marge Analyse**

II. Button “Marge Analyse”

Upon finding the results based on the input criteria, select an entry from the list and click on the button [Marge Analyse] to generate the profit margin for that project. As an example, the following entry is chosen...

Resultaten	
11301079	
11301419	
11301573	

Zoomen

Details

Marge Analyse

...and after clicking [Marge Analyse], this outcome is generated:

Project	Totale Kosten	Totaal Zakgoed	Totaal Pre-Mix	Totale Prijsverschillen	Totale Valutaverschillen	Totale Omzet	Correctie Omzet	Tonnage	Marge per Ton
11301573	2159	232,68	0	-21	0	2898	0	21	23,1104761904762

III. Button “Details”

Upon performing the “Marge Analyse”, additional details can be viewed that specify the project’s costs, earnings, price mutations, currency mutations and quantity sold by clicking the button [Details]. As an example, for project [11301573], details are:

debname	crdnr	crdname	artcode	ltOms	omsitmclas	omsitmclas	reknr	GIOMS	Debit	Credit	Aantal	Eenheid
	3	Hubun Bodem	101095	kippenmestpe	Product	KMPK	2200	Nog te ontvan	0	1260	-21	Ton
	3	Hubun Bodem	110089	stouwen conta	Diensten		2200	Nog te ontvan	0	105	-21	Ton
	3	Hubun Bodem	112890	afvullen zakgo	Diensten		2200	Nog te ontvan	0	315	-21	Ton
	3	Hubun Bodem	101095	kippenmestpe	Product	KMPK	2200	Nog te ontvan	1260	0	21	Ton
	3	Hubun Bodem	110089	stouwen conta	Diensten		2200	Nog te ontvan	105	0	21	Ton
	3	Hubun Bodem	112890	afvullen zakgo	Diensten		2200	Nog te ontvan	315	0	21	Ton
	100	Kamps Transp	120281	20 ft container	Transport		2200	Nog te ontvan	0	290	-1	Rit
	100	Kamps Transp	120281	20 ft container	Transport		2200	Nog te ontvan	290	0	1	Rit
	497	DHL Global For	120294	THC	Verschepping		2200	Nog te ontvan	0	137,5	-1	Containe
	497	DHL Global For	120295	Bill of Lading	Verschepping		2200	Nog te ontvan	0	36,5	-1	Shipment
	497	DHL Global For	120317	ISPS	Verschepping		2200	Nog te ontvan	0	15	-1	Containe
	497	DHL Global For	120294	THC	Verschepping		2200	Nog te ontvan	137,5	0	1	Containe
	497	DHL Global For	120295	Bill of Lading	Verschepping		2200	Nog te ontvan	36,5	0	1	Shipment
	497	DHL Global For	120317	ISPS	Verschepping		2200	Nog te ontvan	15	0	1	Containe
	497	DHL Global For	120294	THC	Verschepping		7210	Prijsverschille	32,5	0	1	Containe
	497	DHL Global For	120295	Bill of Lading	Verschepping		7210	Prijsverschille	0	6,5	1	Shipment
	497	DHL Global For	120317	ISPS	Verschepping		7210	Prijsverschille	0	5	1	Containe
Agro System S.			102747	Orgevit - 840 x	Product	KMPK	8000	Opbrengst ver	0	2898	21	Ton
Agro System S.			120281	20 ft container	Transport		8000	Opbrengst ver	0	0	1	Rit
Agro System S.			120294	THC	Verschepping		8000	Opbrengst ver	0	0	1	Containe
Agro System S.			120295	Bill of Lading	Verschepping		8000	Opbrengst ver	0	0	1	Shipment
Agro System S.			120317	ISPS	Verschepping		8000	Opbrengst ver	0	0	1	Containe

Keep in mind that the option [Details] is only available *after* the “Marge Analyse” of the project has been performed.

7. Project: Exact Globe

Upon performing the “Marge Analyse” of a project, these fields depict additional details that have been used to derive the contribution margin (these data are not included in the “Details” view). When applicable, it shows the cost price of zakgoed/pre-mix taken into account, and/or the currency rate utilized to value non-euro amounts. As an example, for project [11301573], additional Exact Globe data are:

Project: Exact Globe

Zakgoed Wisselkoers

Pre-Mix

In other words: Pre-Mix is not applicable and no foreign currency rate has been utilized. However, the project does contain a sales article with Zakgoed in its structure, the latter of which is currently valued at a cost price of 0.277 euro per unit ("per zak").

8. Project: Manual Overwrite & Buttons IV./V. "Update"/"Reset"

Upon performing the "Marge Analyse" of a project, if values are shown under [7], these figures can be manually overwritten here. In doing so, a new profit margin analysis can be made by clicking [Update], taking into account the renewed values (and hence, allowing for a great range of flexibility). Practical grounds for doing so can be:

- The use of an alternative/updated value for zakgoed cost price (the one originally taken into account being historically inaccurate)
- The use of an alternative/updated value for pre-mix cost price (the one originally taken into account being historically inaccurate)
- The use of an alternative/updated currency rate (the one originally taken into account being outdated, or accounting for a "worst-case-scenario rate")
- To account for missing expenses/earnings [Correctie]

As an example, for project [11301573], the original profit margin amounts to €23.11 per ton, derived with the inclusion of Zakgoed valued at a cost price of 0.277 euro per unit.

Now, changing this value to the following...

Project: Exact Globe

Zakgoed Wisselkoers

Pre-Mix

Project: Handmatig

Zakgoed Wisselkoers

Pre-Mix Correctie

...and clicking on [Update], results in the new profit margin analysis:

Project	Totale Kosten	Totaal Zakgoed	Totaal Pre-Mix	Totale Prijsverschillen	Totale Valutaverschillen	Totale Omzet	Correctie Omzet	Tonnage	Marge per Ton
11301573	2159	420	0	-21	0	2898	0	21	14,1904761904762

(profit has decreased from €23.11 to €14.19 per ton)

Also, the entries for manual overwrite can be set back to their initial values by clicking [Reset]. Hence, doing so and afterwards pressing [Update] will once more derive the original profit margin of the project.

VI. Button “Zoomen”

Upon obtaining results under [6], a project can be selected. By clicking [Zoomen], the chosen entry’s contents will be revealed (i.e. the products).

9. Zoom Results

Here, results of the “zoomed project” are shown. As an example, for project [11301573]...

Resultaten	
11301079	
11301419	
11301573	

Zoomen

Details

Marge Analyse

...clicking on [Zoomen] yields the following outcome:

Zoom: Producten			
102747	Orgevit - 840 x 25 kg - loose stowed	21	Ton

Product Marge

Exporteren

In other words, this particular project consists of a single product: Orgevit.

VII. Button “Product Marge”

Upon zooming in on a project, select an entry from the resulting list and click on the button [Product Marge] to generate the profit margin for that product. As an example, the following entry is chosen...

Zoom: Producten			
102747	Orgevit - 840 x 25 kg - loose stowed	21	Ton

Product Marge

Exporteren

...and after clicking [Product Marge], this outcome is generated:

Marge Analyse		Product Marge	
Product Marge			
23,1104761904762			

VIII. Button “Exporteren”

The profit margin analysis of a product (i.e. the generated outcome from [Product Marge]) can be stored for later use (e.g. reports, references). This is done by selecting an entry under [9] and clicking on [Exporteren].

10. Zoom: Exact Globe

Upon performing the “Product Marge” of a product, these fields depict additional details that have been used to derive the contribution margin. When applicable, it shows the cost price of zakgoed/pre-mix taken into account, and/or the currency rate utilized to value non-euro amounts. As an example, for project [11301573], zoom-selection Orgevit, additional Exact Globe data are:

Zoom: Exact Globe			
Zakgoed	0,277	Wisselkoers	n.v.t.
Pre-Mix	n.v.t.		

In other words: Pre-Mix is not applicable and no foreign currency rate has been utilized. However, the selected product does have Zakgoed in its structure, the latter of which is currently valued at a cost price of 0.277 euro per unit (“per zak”).

11. Zoom: Manual Overwrite & Buttons IX./X. “Update”/“Reset”

Upon performing the “Product Marge” of a product, if values are shown under [10], these figures can be manually overwritten here. In doing so, a new profit margin analysis can be made by clicking [Update], taking into account the renewed values (similar to projects, as described under [8]).

As an example, for project [11301573], zoom-selection Orgevit, the original profit margin amounts to €23.11 per ton, derived with the inclusion of Zakgoed valued at a cost price of 0.277 euro per unit.

Now, changing this value to the following...

Zoom: Exact Globe			
Zakgoed	0,277	Wisselkoers	n.v.t.
Pre-Mix	n.v.t.		

Zoom: Handmatig				
Zakgoed	0,40	Wisselkoers	n.v.t.	Reset
Pre-Mix	n.v.t.	Correctie	0	Update

...and clicking on [Update], results in the new profit margin analysis:

Marge Analyse	Product Marge
Product Marge	
18,1904761904762	

(profit has decreased from €23.11 to €18.19 per ton)

Also, the entries for manual overwrite can be set back to their initial values by clicking [Reset]. Hence, doing so and afterwards pressing [Update] will once more derive the original profit margin of the product.

System Limitations

Now understanding exactly how to operate the post-calculation system, there are some limitations to take into account as well.

Only one at a time

If results are found matching the search criteria, a profit margin analysis can only be performed one entry at a time. Consequently, it is not possible to, say, select three projects simultaneously, group them together and derive an average contribution margin per project. If you want to see results like that, you have to select project 1, derive its margin, then select project 2, derive its margin, then select project 3, derive its margin and finally, you will have all the information required to (manually) derive the average contribution per project.

Only one zakgoed/pre-mix article can be accounted for

It is not uncommon for a project to consist of multiple sales articles. While the majority of the time (say, 95%) this will not be a problem, it is that small, remaining percentage of projects that will cause the post-calculation system to derive inaccurate results. To be more specific: if a project consists of multiple sales articles that also include zakgoed and/or pre-mix (hence, the latter is plural), only one associated cost price can be found.

In practice, this means that a profit margin analysis cannot be performed properly on projects such as:

- Project X: consisting of Sales article 1 (includes zakgoed 1) + Sales article 2 (includes zakgoed 2)
- Project Y: consisting of Sales article 3 (includes pre-mix 1) + Sales article 4 (includes pre-mix 2)
- Project Z: consisting of a combination of X and Y (for instance, sales article 1 + 2 + 4).

Now, if you were to come across one of these rare exceptions, a message box will pop up, prompting you of potential inaccuracies.



If you get no such warning, it is safe to assume that generated results will be correct.

Practical Limitations

Although it is not an “actual” limitation of the post-calculation system, you might notice that the derivation of a project’s profit margin may take some time. Specifically, the more results are found under [6], the more time the system will need to process a selected entry. It is very important that, during the execution of the profit margin analysis, you stay patient. Even though it may look like nothing is happening, rest assured, numerous processes are taking place in the background; “pointing and clicking everywhere” in the meantime will not speed up anything and might even cause the system to freeze.

In practice, you may want to specify your search as detailed as possible (i.e. through the input of multiple criteria) and/or limit the range to which the period applies. Doing either or both of the aforementioned will minimize the results under [6], hence putting the least amount of stress onto the system.

5.2 Ensuring the use of the post-calculation system

At this point, people should be aware of how to operate the post-calculation system, what (practical) limitations to take into account and the results it is able to generate. Still, despite all of this, personnel need to be fully convinced of the potential benefits it may add to the organization, lest it gets discarded or remains unutilized.

To accomplish this, recall that MeMon’s critical factors for a successful implementation were as follows:

Factor	What MeMon should do
Clear understanding of strategic goals	Remind personnel of company goals, hence enforcing people to “do something about current issues” (e.g. incorrect margin analyses).
Commitment by top management	The Board of Directors should lead by example; if they want to achieve certain results, they need to be the ones that also put effort into it.
Organizational change management	It should be clear for everyone what changes and, more importantly, why
Data accuracy	Data need to be both complete (e.g. no missing costs) and put in the right place (e.g. no missing project links).
Focused performance measures	Constantly monitor the ERP system, hence verifying if (current) desires are met and goals achieved.

Table 13 (copied from p. 50): What MeMon should do regarding critical success factors

From this, it can be said that the latter three factors are already implemented/completed throughout this research:

Organizational change management

The actual change lies in the potential benefits that are added through utilization of the post-calculation system; what it can do, the results it is able to generate and more are all discussed in detail throughout sections 4.2.3 - 5.1.

Data accuracy

Despite (potentially) missing project links, through the clever use of queries, the post-calculation system is able to gather and process all relevant project data nonetheless (and is only limited by Exact Globe's own restrictions). Still, MeMon has to continually enforce the correct input of information into the ERP; by doing so, the foundation will be laid upon which (future) operations can be built and for the present, it will ensure a proper execution of the post-calculation system's margin analysis.

Focused performance measures

Current desires have been formulated in section 4.1.1-4.1.2 and are accounted for in section 4.2.4.

Regarding the two remaining factors, "Clear understanding of strategic goals" and "Commitment by top management", it all comes down to good leadership and the required clear communication mentioned earlier. In essence, if the highest level throughout the organization (i.e. the Board of Directors) acknowledges the true worth of the post-calculation system and starts using it on a regular basis, other personnel will follow ("a good leader always leads by example"). Also, if they were to communicate positive results through utilization of the now-possible profit margin analysis, it would have a much stronger impact due to their authoritative nature. Furthermore, the first steps regarding the latter will already be taken by the end of this research, and come in the form of "meetings with personnel to discuss the final solution" and "presentations detailing research results".

CHAPTER SUMMARY

Using the form provided by the post-calculation system, as the end-user, you are able to specify various search criteria.

- **Project:** Here, you can directly specify the project you want to analyze.
- **Date:** Here, you can specify the period to which the results must relate (from dd-mm-yyyy to dd-mm-yyyy).
- **Client:** Here, you can specify the client to which the results must relate. Also, this entry has an “Auto-fill” option, hence ensuring that only clients that are known/stored in Exact can be entered.
- **Supplier:** Here, you can specify the supplier to which the results must relate. Also, this entry has an “Auto-fill” option, hence ensuring that only suppliers that are known/stored in Exact can be entered.
- **Article:** Here, you can specify the article to which the results must relate. Also, this entry has an “Auto-fill” option, hence ensuring that only articles that are known/stored in Exact can be entered.

Although it is a very flexible and comprehensive system, there are minor limitations to take into account:

- **Only one at a time:** If results are found matching the search criteria, a profit margin analysis can only be performed one entry at a time.
- **Inaccuracies under certain conditions:** if a project consists of multiple sales articles that also include zakgoed and/or pre-mix (hence, the latter is plural), only one associated cost price can be found.

Finally, to ensure a full utilization of the post-calculation system, personnel need to be convinced of its potential benefit to the organization. The latter can be achieved with aid of the following:

Factor	What MeMon should do
Clear understanding of strategic goals	Remind personnel of company goals, hence enforcing people to “do something about current issues” (e.g. incorrect margin analyses).
Commitment by top management	The Board of Directors should lead by example; if they want to achieve certain results, they need to be the ones that also put effort into it.
Organizational change management	It should be clear for everyone what changes and, more importantly, why
Data accuracy	Data need to be both complete (e.g. no missing costs) and put in the right place (e.g. no missing project links).
Focused performance measures	Constantly monitor the ERP system, hence verifying if (current) desires are met and goals achieved.

Table 13 (copied from p. 50): What MeMon should do regarding critical success factors

CHAPTER 6: Conclusions & Recommendations

This final, closing chapter of the report is dedicated to once more formulating all of the research questions that have been the ground for performing this master thesis. In doing so, each individual entry will be shortly discussed and answered, allowing for a complete overview of the entire research execution. The report is then concluded by stating various recommendations, aimed at the future growth and development of MeMon. Also, the former relates to findings derived from this research, yet either fall outside its scope, timeframe or require external resources.

6.1 From core problem to final solution (all research questions answered)

A preliminary analysis has been made at the very start of this research, assessing the current situation of the company. From this, a problem bundle was constructed (refer all the way back to figure 1), in turn leading to the derivation of the following core problem:

Core problem

“Employees’ (latent) desires are not met”.

In essence, the above refers to personnel wanting answers to specific questions, yet they are not able to satisfy these needs. In order to accommodate for this, years ago, an ERP system known as Exact Globe was purchased and implemented throughout the organization. However, its full potential remains unutilized; either because people lack certain knowledge, or due to Exact’s own shortcomings and/or database limitations. In turn, the answers people are looking for remain absent and in fact, the issue at heart impacts the company as a whole, resulting in (potential) consequences that range from an incorrect view on performance, all the way to customer dissatisfaction.

Before being able to truly tackle the core problem, a detailed analysis is required, giving insight as to how MeMon currently operates; both with respect to Exact Globe, as well as its accounting system. The questions, and the answers, are as follows:

Analysis

“What is Exact Globe?”

Exact Globe is a product developed by Exact Software and functions as an administrative basis for nearly every business process; it is an integrated information system for financial-, logistic- and production administration, along with every process that is directly connected to them. The use of Exact Globe will result in an integration between the different administrations, allowing important connections to be made across departments and even establishments.

“How is Exact Globe currently implemented/used in MeMon?”

Sales & Purchasing Department

Here, Exact is used for processing (new) offers made to customers. After an agreement has been reached, a new sales order is created and processed into the ERP software. The system itself is utilized to purchase the required goods, package materials and even transport if necessary. Upon delivery of the final product(s) to the client, one last entry is made in the Enterprise Resource Planning system, which states details such as shipping confirmation, actual weight of the transport etc.

Administration Department

The activities related to this department are largely connected to the full quotation process that is handled by Sales and Purchasing. The only difference here is that with Administration, things are viewed from a more financial perspective: checking client credit limits, handling the payment of purchase articles acquired and of course, the billing of the customer.

“Which activities are related to the accounting system?”

The activities related to the accounting system are performed by the Administration department. Most of these are connected to the practice of handling a customer order and the inputting and processing of data with Exact Globe. However, the one that is related closest to pure accounting practices is of course the overall processing of mutations in MeMon’s bank accounts, resulting in a variety of different financial overviews of the company: quick ratio, current ratio, net profit margin etc.

From the analysis, a transition is made to researching current complications:

Complications

“What kind of problems are related to the usage of Exact Globe in its current state?”

Problem	Details	Cause
Exact does not function properly	Partial and/or incorrect output of data	Lack of knowledge, incomplete implementation of Exact
Incomplete databases	Important information is missing or unobtainable	Incomplete implementation of Exact
Using Exact is counterproductive	Wasted time, added frustrations	Lack of knowledge regarding Exact’s possibilities

Table 3 (copied from p. 17): Complications with Exact’s current state of implementation

“What kind of problems are related to the current state of the accounting system?”

Problem	Details	Cause
Contract administration within Exact Globe is missing	Wasted time, increased risk of errors from using estimates and third-party data	Lack of knowledge, incomplete implementation of Exact
Calculation of cost prices is performed inaccurately	Unreliable or unknown data regarding profit margins	Incomplete implementation of Exact, relying on estimates/no justification of calculations

Table 4 (copied from p. 19): Complications with the current state of the accounting system

With the analysis of the current situation and all of the problems (relevant for this research) being complete, the focus is shifted back to the core problem that needs to be tackled. In doing so, a solution has to be found for the following main problem:

Main problem

“How can (latent) desires be met, upon which not only the employees themselves benefit, but MeMon as a whole as well?”

Deriving a proper answer is done in parts; the integration of individual solutions then serving as the final solution. Sub-problems, and answers, are as follows:

Sub-problems

“How can the accounting system be improved?”

The current state of MeMon’s accounting system can be improved through the construction and implementation of a post-calculation system based on current ERP databases, one that is able to take into account all relevant earnings and expenses (to the extent that Exact Globe will allow) in order to derive true contribution margins.

“How can the improvements of the accounting system be successfully implemented?”

Factor	What MeMon should do
Clear understanding of strategic goals	Remind personnel of company goals, hence enforcing people to “do something about current issues” (e.g. incorrect margin analyses).
Commitment by top management	The Board of Directors should lead by example; if they want to achieve certain results, they need to be the ones that also put effort into it.
Organizational change management	It should be clear for everyone what changes and, more importantly, why
Data accuracy	Data need to be both complete (e.g. no missing costs) and put in the right place (e.g. no missing project links).
Focused performance measures	Constantly monitor the ERP system, hence verifying if (current) desires are met and goals achieved.

Table 13 (copied from p. 50): What MeMon should do regarding critical success factors

“What general adjustments need to be made to Exact Globe?”

Although adjustments can be made regarding the ERP system itself (and come in the form of a possible work-around), they remain untouched, as they are simply not worth the trade-off.

Limitation	Possible work-around	Trade-off
Exact Globe only allows for one entry regarding cost price	Create multiple entries of the same article, each with a distinct cost price	Loss of database clarity, difficulty in database maintenance
Exact Globe only allows for one project link regarding expenses incurred	Account for missing expenses by hand	Manual labor (inaccuracy, use of estimates)
(Alternatively: certain expenses incurred cannot be properly allocated, with or without Exact’s limitations)		

Table 19 (copied from p. 78): Summary of limitations

By combining and integrating these individual sub-solutions, the final solution, i.e. the answer to the main problem, is constructed as follows:

Final solution

A system developed within Microsoft Access, presented as a user-form from which personnel can specify exactly what results they want to see, the latter of which is tied to numerous different queries and databases that serve as its foundation. Its main goal is to be both aimed at end-users (i.e. ease of use), as well as being able to generate results that can be relied on (i.e. accurate and trustworthy).

Furthermore, its true potential (i.e. the benefits it may add to the organization as a whole) can only be reaped through guidance of employees (accomplished by providing helping tools) and by clear communication, whereas the latter should preferably originate from the top level (Board of Directors).

6.2 Final recommendations and future research

Having concluded the master thesis, there are still certain aspects that remain to be addressed. In this closing section, these will be briefly discussed, serving as recommendations for future research.

Recall from table 14: Irrelevant critical success factors, that the only entry applicable was “Extensive education and training” (others were related to the initial stages of ERP implementation, and they have long past/been completed). It was said that this factor lies outside the scope of this research, as “I am no expert regarding Exact Globe, and thus I am certainly not qualified to educate and/or train people to the extent that is needed”. Back then, a brief suggestion was made, saying that personnel (if they are willing) should undergo training and/or follow courses to make up for missing knowledge.

This recommendation still holds, as even throughout the earliest stages of the research, a lack of knowledge was deemed the prime cause of multiple problems:

Problem	Details	Cause
Exact does not function properly	Partial and/or incorrect output of data	Lack of knowledge, incomplete implementation of Exact
Incomplete databases	Important information is missing or unobtainable	Incomplete implementation of Exact
Using Exact is counterproductive	Wasted time, added frustrations	Lack of knowledge regarding Exact’s possibilities

Table 3 (copied from p. 17): Complications with Exact’s current state of implementation

Also, whilst the derivation and development of this thesis’ post-calculation system serves as the final solution to the main problem, there is still room for improvement. Recall from table 15: Complete overview of desired improvements, that current wishes relate to both a project/transaction level, as well as contracts. Now, only the former has been addressed; the latter, despite ongoing efforts from MeMon, still needs a lot of work (contract administration is being implemented, yet has not reached the extent that is required).

Finally, efforts have to be made in order to ensure that the findings from this research (primarily, the post-calculation system itself) do not go to waste. As stressed in the previous chapter, this all comes down to good leadership and communication enhancements; people need to hear about the strengths and added benefits of the system (preferably from the Board of Directors themselves). Only then can personnel truly be convinced of its potential, resulting in proper and actual use of the final solution.

In summary:

Final Recommendations

- Educate and train people through Exact courses
- Finalize contract administration (extra knowledge of Exact would be beneficial here as well)
- Clear communication regarding possibilities (and added benefits) of the post-calculation system

Future Research (based on recommendations)

- Assessment of whether or not current knowledge regarding Exact Globe is sufficient (and if not, where is it lacking?)
- With contract administration finalized, can the remaining desires of table 15 be met (and if not, what adjustments and/or improvements of the former are necessary?)
- Does the post-calculation system still hold? Have new questions arisen that require a further development of the system and if so, what does this amount to?

CHAPTER SUMMARY

Throughout this entire research, various questions have been formulated that form the ground of its execution.

At its core lies the problem of...

Core problem

“Employees’ (latent) desires are not met”.

...from which the following main problem is derived:

Main problem

“How can (latent) desires be met, upon which not only the employees themselves benefit, but MeMon as a whole as well?”

The latter is tackled in parts by finding solutions to specific sub-problems...

Sub-problems

“How can the accounting system be improved?”

“How can the improvements of the accounting system be successfully implemented?”

“What general adjustments need to be made to Exact Globe?”

...and by combining and integrating these individual sub-solutions, the final solution, i.e. the answer to the main problem, is constructed as follows:

Final solution

A system developed within Microsoft Access, presented as a user-form from which personnel can specify exactly what results they want to see, the latter of which is tied to numerous different queries and databases that serve as its foundation. Its main goal is to be both aimed at end-users (i.e. ease of use), as well as being able to generate results that can be relied on (i.e. accurate and trustworthy).

The thesis is concluded by addressing both final recommendations, as well as possibilities for future research:

Final Recommendations

- Educate and train people through Exact courses
- Finalize contract administration (extra knowledge of Exact would be beneficial here as well)
- Clear communication regarding possibilities (and added benefits) of the post-calculation system

Future Research (based on recommendations)

- Assessment of whether or not current knowledge regarding Exact Globe is sufficient (and if not, where is it lacking?)
- With contract administration finalized, can the remaining desires of table 15 be met (and if not, what adjustments and/or improvements of the former are necessary?)
- Does the post-calculation system still hold? Have new questions arisen that require a further development of the system and if so, what does this amount to?

References

An overview of the literature used throughout this entire report can be found below.

Books

Sutton, T. (2004). *Corporate Financial Accounting and Reporting second edition*. Prentice Hall.

Popper, K. (1959). *The Logic of Scientific Discovery*. Reprinted (2004) by Routledge, Taylor & Francis.

Ackroyd, S. & Hughes, J.A. (1981). *Data Collection in Context*. Longman.

Berry, A. & Jarvis, R. (2006). *Accounting in a business context, 4e*. Thomson Learning, High Holborn.

Articles & Publications

Umble, E.J., Haft, R.R. & Umble, M.M. (2003). *Enterprise resource planning: Implementation procedures and critical success factors*. European journal of operational research, Elsevier Science. (1)

Loizos, C. (1998). *ERP: it is the ultimate software solution*. Industry week.

Dillon, C. (1999). *Stretching toward enterprise flexibility with ERP*. APICS – The Performance Advantage (October), p. 38-43.

Ptak, C. & Schragenheim, E. (2000). *ERP: tools, techniques, and applications for integrating the supply chain*. St. Lucie Press, Boca Raton, FL.

Stein, T. (1999). *Making ERP add up—companies that implemented enterprise resource planning systems with little regard to the return on investment are starting to look for quantifiable results*. Information week 24, 59.

Cliffe, S. (1999). *ERP implementation*. Harvard Business Review 77, p. 16-17.

Krupp, J. (1998). *Transition to ERP implementation*. APICS–The performance advantage (October), p. 4-7.

Latamore, G. (1999). *Flexibility fuels the ERP revolution*. APICS–The performance advantage (October), p. 44-50.

Schragenheim, E. (2000). *When ERP worlds collide*. APICS–The performance advantage (February), p. 55-57.

Travis, D. (1999). *Selecting ERP*. APICS–The performance advantage (June), p. 37-39.

Davis, B. & Wilder, C. (1998). *False starts, strong finishes—companies are saving troubled IT projects by admitting their mistakes, stepping back, scaling back and moving on*. Information Week 30 (November), p. 41-43.

Sherrard, R. (1998). *Enterprise resource planning is not for the unprepared*. ERP World Proceedings, August.

- Laughlin, S. (1999). *An ERP game plan*. Journal of Business Strategy (January–February), p. 32-37.
- Minahan, T. (1998). *Enterprise resource planning*. Purchasing 16, p. 112-117.
- Stedman, C. (1999). *ERP can magnify errors*. Computerworld 19, 1.
- Hutchkins, H. (1998). *7 key elements of a successful implementation, and 8 mistakes you will make anyway*. APICS International Conference Proceedings, Falls Church, VA, p. 356-358.
- McCaskey, D. & Okrent, M. (1999). *Catching the ERP second wave*. APICS–The Performance Advantage (December), p. 34-38.
- Volwer, J. (1999). *Learning in the play pit*. Computer Weekly 27, 34.
- Langenwalter, G. (2000). *Enterprise Resource Planning and beyond: Integrating your entire organization*. St. Lucie Press, Boca Raton, FL.
- Oden, H., Langenwalter, G. & Lucier, R. (1993). *Handbook of material and capacity requirements planning*. McGraw-Hill, New York.
- Allen, D. (1997). *Multisite implementation: Special strategies*. APICS International Conference Proceedings, Falls Church, VA, p. 551-555.
- Cooper, R. & Kaplan, R.S. (1987). *How cost accounting systematically distorts product costs*. Accounts and Management: Field Study Perspectives (eds Bruns, W.J. & Kaplan, R.S.), Harvard Business School.
- Davenport, T. (1998). *Putting the enterprise into the enterprise system*. Harvard Business Review 76, (4), p. 121-132.
- Sandretto, M.J. (1986). *Definition and measurement of Direct Material Cost*. Institute of Management Accountants, National Association of Accountants.

Online articles

Shankarnarayanan, S. (n.d.). *ERP systems – Using IT to gain a competitive advantage*. Obtained at August 06, 2013, via <http://expressindia.indianexpress.com/newads/bsl/advant>

Other online sources

<http://www.dsij.in/article-details/articleid/4979/top-ten-companies-with-high-debt-to-equity-ratio.aspx>

<http://www.investopedia.com/university/ratios/>

http://www.readyratios.com/reference/analysis/most_important_financial_ratios.html

<http://biz.yahoo.com/p/112qpmu.html>

<http://seekingalpha.com/article/1219821-liquidity-analysis-of-agricultural-chemical-companies>

Postface

Closing remarks

This report is the final product of my master thesis for Financial Engineering & Management, a specific track within the overarching master Industrial Engineering & Management. I am confident that it is a good representation of everything that I have learned not only during these past two years of following this trajectory, but for my time as a college student at the University of Twente in general.

I am glad that I have been given the opportunity to apply my knowledge in practice via this research.

I sincerely hope that by reading this report, you too have been part of this wonderful and certainly educational experience.

Thank you very much for your time and interest!

APPENDIX

Balance Sheet & Income Statement MeMon, 31 May 2013



Income Statement

The income statement is A financial statement that measures a company's financial performance over a specific accounting period.

Financial performance is assessed by giving a summary of how the business incurs its revenues and expenses through both operating and non-operating activities. It also shows the net profit or loss incurred over a specific accounting period, typically over a fiscal quarter or year.

Balance Sheet

The balance sheet is a financial statement that summarizes a company's assets, liabilities and shareholders' equity at a specific point in time.

These three balance sheet segments give investors an idea as to what the company owns and owes, as well as the amount invested by the shareholders.

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Bedrijf 001 MeMon BV

Balans - Bj 2013

Op rapportage datum

Vanaf rapportage 1-1-2013
T/m 31-5-2013
Onverwerkt Ja

Vanaf GB-rekening Alle
T/m

Valuta EUR x 1

	Saldo 31 mei 2013		Saldo 31 mei 2012		
	Debet	Credit	Debet	Credit	Afwijking %
Activa-Balans					
Vaste Activa					
Financiële Vaste Activa					
0010 Deelneming Hummo B.V.	341.963		341.963		
Totaal Financiële Vaste Activa	341.963		341.963		
Immateriële Vaste Activa					
0180 Merkenrecht	24.852		24.852		
0190 Afschrijving merkenrecht		6.375		6.375	
Totaal Immateriële Vaste Activa	18.476		18.476		
Materiële Vaste Activa					
0440 Inventarissen	43.835		41.796		5%
0450 Afschrijving inventarissen		31.155		31.155	
0460 Computers en software	2.334		2.025		15%
0470 Afschrijving computers en software		1.013		1.013	
Totaal Materiële Vaste Activa	14.002		11.654		20%
Totaal Vaste Activa	374.441		372.093		1%
Vlottende Activa					
BTW					
1500 Af te dragen BTW in Nederland		88.986		71.684	24%
1510 Af te dragen MwSt in DE		207.888		146.195	42%
1511 Afgedragen MwSt in DE	191.458		141.122		36%
1520 Te vorderen BTW in Nederland	213.744		287.552		-26%
1530 Te vorderen MwSt in DE	183.882		129.352		42%
1531 Gevorderde MwSt in DE		168.486		124.735	35%
1590 Tot. te ontvangen BTW 2008		0		0	
1591 Ontvangen BTW		0		0	
1595 Te betalen MwSt in DE		23.283		16.699	39%
1596 Betaalde MwSt in DE	25.241		17.502		44%
Totaal BTW	125.681		216.216		-42%
Debiteuren					
0720 Voorziening oninbare debiteuren		35.355		35.355	
1300 Debiteuren	3.611.811		2.906.096		24%
3300 Vooruitbetalingen leveringen		174.836		1.281	13.548%
Totaal Debiteuren	3.401.619		2.869.460		19%
Liquide middelen					
1100 Rabobank	245.251		92.003		167%
1101 Rabobank Dollarsrekening	98		343		-71%
1102 Rabobank Pondenrekening	351.355		77.511		353%
1120 Bedrijfsspaarrekening	912.061		1.864.686		-51%
1130 Zwitser Leven RCO	3.810		6.520		-42%
1140 Deutsche Bank Nederland N.V.	101.696				
1141 Deut. Bank Kwartaal Sparen P	366.486				
Totaal Liquide middelen	1.980.758		2.041.064		-3%
Overige vorderingen					
0510 Vordering aan deelneming	229.999		229.999		
Totaal Overige vorderingen	229.999		229.999		
Tussenrekeningen					
1410 Af te dragen loonheffing	40.418		4.238		854%
1450 Af te dragen pensioenpremies	2.437		1.948		25%
1780 Af te dragen sociale lasten		37.903		18.254	108%
1830 Bijdrage ZVW		25.136		11.801	113%

Bedrijf 001 MeMon BV

Balans - Bj 2013

Op rapportage datum

Vanaf rapportage 1-1-2013
T/m 31-5-2013
Onverwerkt Ja

Vanaf GB-rekening Alle
T/m

Valuta EUR x 1

	Saldo 31 mei 2013		Saldo 31 mei 2012		Afwijking %
	Debet	Credit	Debet	Credit	
1901 Nog te betalen VPB	215.000		135.290		-259%
2003 Kruisposten	6.644		4.525		47%
2010 Betalingen onderweg		638	1.175		-46%
2024 Euro's doorberekend Hubun		0	0		
2090 Verkeerde betalingen		15.492	0		
2100 Nog te boeken kosten	5.167		4.987		4%
2101 Geboekte kosten/ opbrengsten		65.135	108.995		-40%
2110 Uit te betalen nettolonen		132	0		
2200 Nog te ontvangen facturen/goederen		26.194	112.079		-77%
2340 Reservering vakantiegeld	0		0		
Totaal Tussenrekeningen	99.036		371.896		-127%
Voorraden					
0400 Tussenrekening: Logistiek (SS)	0		0		
0401 Productie: OHW	35.574		919		3.770%
3000 Voorraad handelsgoederen	261.903		311.169		-16%
3100 Voorraad diensten derden		1.321	616		-314%
3900 Diverse voorraad incurant		3.928	3.928		
Totaal Voorraden	292.229		308.776		-5%
Totaal Vlottende Activa	6.129.322		5.293.619		16%
Totaal Activa-Balans	6.503.764		5.665.712		15%
Passiva-Balans					
Eigen vermogen					
Aandelenkapitaal					
0700 Aandelenkapitaal		1.418.063	1.418.063		
0701 Aandelen in portefueille	1.077.728		1.077.728		
0702 Ingekochte aandelen	56.269		56.269		
Totaal Aandelenkapitaal		284.066	284.066		
Reserves					
0710 Agio		1.388.631	1.888.630		-26%
0740 Wettelijke reserve		341.963	341.963		
0830 Resultaat voorgaande jaren		988.652	988.652		
Totaal Reserves		2.719.245	3.219.244		-16%
Totaal Eigen vermogen		3.003.312	3.503.310		-14%
Kort Vreemd Vermogen					
Crediteuren					
1600 Crediteuren		1.869.872	1.322.174		41%
1601 Vooruitbetaling crediteuren	7.476		133.297		-106%
Totaal Crediteuren		1.862.396	1.455.471		28%
Totaal Kort Vreemd Vermogen		1.862.396	1.455.471		28%
Totaal Passiva-Balans		4.865.708	4.958.782		-2%
Vorig jaar Onverwerkt Winst/verlies		981.092			
Winstsaldo		656.963	706.931		-7%
Totaal Balans	6.503.764	6.503.764	5.665.712	5.665.712	

Bedrijf 001 MeMon BV

Winst & Verlies - Bj 2013

Op rapportage datum

Vanaf rapportage 1-1-2013
T/m 31-5-2013
Onverwerkt Ja

Vanaf GB-rekening Alle
T/m

Valuta EUR x 1

	Saldo 31 mei 2013		Saldo 31 mei 2012		
	Debet	Credit	Debet	Credit	Afwijking %
Resultaten Rekening					
Baten					
Bijzondere baten					
9000 Buitengewone baten		12.683	10.275		23%
9130 Rentebaten		2.704	611		342%
9300 Valutaverschillen	5.734		10.818		-153%
Totaal Bijzondere baten		9.653	21.704		-56%
Omzet regulier					
8000 Opbrengst verkopen		9.806.709	10.265.555		-4%
9420 Betalingsverschillen bij verkoop		7			
Totaal Omzet regulier		9.806.715	10.265.555		-4%
Omzet overig					
8900 Overige opbrengsten (MSD)		20.874	19.329		8%
Totaal Omzet overig		20.874	19.329		8%
Totaal Baten		9.837.242	10.306.587		-5%
Directe kosten					
Kostprijs verkopen					
7000 Kostprijs verkopen	8.922.923		9.152.648		-3%
7200 Prijsverschillen voorraad	155.802		100.237		55%
7210 Prijsverschillen diensten derden		224.083	2.401		-9.434%
9004 Productie: resultaten		5.970	21.295		-128%
9200 Rekenverschillen	800		61		1.209%
9410 Kortingen bij inkoop		2.750		3.799	-28%
Totaal Kostprijs verkopen	8.846.722		9.272.843		-5%
Transportkosten, overigen					
5102 Kosten speciaal transport	24.787		3.009		724%
5103 Wachturen transport	1.122		1.179		-5%
Totaal Transportkosten, overigen	25.910		4.188		519%
Verkoopkosten					
5540 Variabele commissies	10.111		7.900		28%
5541 Exportdocumenten leveringen	5.323		4.126		29%
9400 Kortingen bij verkoop	7.262		13.521		-46%
Totaal Verkoopkosten	22.697		25.548		-11%
Totaal Directe kosten	8.895.328		9.302.578		-4%
Indirecte kosten					
Huisvestingskosten					
5500 Huisvestingskosten	20.429		20.373		0%
Totaal Huisvestingskosten	20.429		20.373		0%
Organisatiekosten					
5520 Kantoorbenodigdheden	14.450		5.781		150%
5521 Portokosten	4.831		4.749		2%
5522 Telefoon/faxkosten	4.094		4.695		-13%
5523 Advies-/ondersteuningskosten	22.365		13.343		68%
5524 Lidmaatschaps- en abonneer	299		909		-67%
5560 Bankkosten	4.335		3.111		39%
5561 Verzekeringskosten	7.370		6.908		7%
5562 Accountantskosten	708		1.781		-60%
Totaal Organisatiekosten	58.453		41.277		42%
Overige kosten					

Bedrijf 001 MeMon BV

Winst & Verlies - Bj 2013

Op rapportage datum

Vanaf rapportage 1-1-2013
T/m 31-5-2013
Onverwerkt Ja

Vanaf GB-rekening Alle
T/m

Valuta EUR x 1

	Saldo 31 mei 2013		Saldo 31 mei 2012		
	Debet	Credit	Debet	Credit	Afwijking %
5570 Kosten speciaal onderzoek	11.230		9.759		15%
5590 Diverse kosten	385		3.222		-88%
Totaal Overige kosten	11.615		12.981		-11%
Personeelskosten					
4000 Brutolonen	140.657		153.085		-8%
4060 Vergoeding ZVW		201	10.135		-102%
4100 Kosten inhuur Agro Consult			28.361		-100%
4141 Reservering vakantiegeld		14.389		14.084	2%
4150 Sociale lasten werkgeversdeel	22.493		10.530		114%
4160 Pensioenpremies werkgever	4.846		8.305		-42%
4176 Reiskostenvergoeding woon/w	1.529		2.781		-45%
4200 Cursussen en opleidingen	1.134				
Totaal Personeelskosten	156.069		199.113		-22%
Promotiekosten					
5542 Promotiekosten	5.494		6.613		-17%
5543 Relatiekosten	1.546		2.500		-38%
5544 Kosten clichés zakgoed	8.353		5.424		54%
5545 Kosten beurzen	17.492		771		2.170%
5549 Sponsoring en goede doelen	600				
Totaal Promotiekosten	33.484		15.307		119%
Reis- en verblijfskosten					
5530 Reis- en verblijfskosten	4.881		5.981		-18%
Totaal Reis- en verblijfskosten	4.881		5.981		-18%
Totaal Indirecte kosten	284.932		295.032		-3%
Rentekosten					
Rentekosten					
9140 Rentelasten	19		2.047		-99%
Totaal Rentekosten	19		2.047		-99%
Totaal Rentekosten	19		2.047		-99%
Totaal Resultaten Rekening		656.963		706.931	-7%
Winstsaldo	656.963		706.931		-7%
Totaal Winst & Verlies	656.963	656.963	706.931	706.931	
Totaal Balans + Winst & Verlies	7.160.727	7.160.727	6.372.643	6.372.643	

Questionnaire and filled out results



Filled out results

The questionnaire has been sent to all of MeMon's employees via e-mail. Filled out forms have been retrieved and are displayed in their original format (Dutch).

Besides that, included is a copy of the questionnaire itself as well, also in its original format (Dutch).

Questionnaire

A questionnaire is a list of research or survey questions asked to respondents, and designed to extract specific information. It serves four basic purposes:

- (1) Collect the appropriate data.
- (2) Make data comparable and amendable to analysis.
- (3) Minimize bias in formulating and asking questions.
- (4) To make questions engaging and varied.

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II.

Naam: [NAAM]

Afdeling: [AFDELING]

Functie en (dagelijkse) taken:

[TYP HIER]

Het doel van deze korte vragenlijst is het achterhalen van uw persoonlijke mening wat betreft de huidige staat en het algehele gebruik van Exact binnen de onderneming. Resultaten zullen worden gebruikt om een nauwkeurig beeld te scheppen over complicaties die momenteel aanwezig zijn en de gewenste verbeterpunten.

Het invullen kost slechts enkele minuten van uw tijd. Bedankt voor uw deelname.

VRAGEN

1. Wat zijn hoofdzakelijk de werkzaamheden waarvoor U Exact gebruikt en/of toepast? (korte beschrijving van gebruik van applicaties, functies, wat voor formulieren of gegevens Exact levert etc.).

[TYP HIER]

2. Wat zijn voor U obstakels bij het huidige gebruik van Exact voor uw dagelijkse werkzaamheden en wat is de eventuele oorzaak hiervan? (zijn er dingen die ontbreken, dingen die omslachtig of zelfs helemaal niet goed werken etc.).

[TYP HIER]

3. Hoe worden dergelijke obstakels momenteel door U omzeild? (o.a. het gebruikmaken van alternatieve applicaties zoals Word, Excel of eventueel het gebruik van Exact grotendeels vermijden waar mogelijk).

[TYP HIER]

4. Wat zou U zelf graag veranderd willen zien met betrekking tot Exact? (extra functionaliteit die het werk vergemakkelijken, meer informatie beschikbaar na specifieke taken zoals het inkopen van goederen etc.).

[TYP HIER]

SCORES

1. In welke mate maakt U gebruik van Exact voor uw dagelijkse werkzaamheden? Geef een score van (zeer weinig) 1 – 5 (zeer veel).

Score:

2. Hoe beoordeelt U de moeilijkheidsgraad met betrekking tot het gebruik van Exact om uw dagelijkse werkzaamheden te ondersteunen? Geef een score van (zeer makkelijk) 1 – 5 (zeer moeilijk).

Score:

3. In welke mate is het gebruik van Exact vereist/onvermijdelijk voor uw dagelijkse werkzaamheden? Geef een score van (nauwelijks vereist) 1 – 5 (zeer vereist).

Score:

4. Op een schaal van (zeer ontevreden) 1 – 5 (zeer tevreden), hoe tevreden bent U over het huidige gebruik van Exact met betrekking tot uw eigen werkzaamheden?

Score:

EXTRA OPMERKINGEN

Heeft U eventuele extra op- of aanmerkingen die buiten deze vragenlijst vallen? Geeft U deze dan hieronder weer.

[EXTRA OP- OF AANMERKINGEN]

Naam: Ulrike Meyer-Reiners
Afdeling: Verkoop buitendienst
Functie en (dagelijkse) taken:

Productmanager
Ontwikkelen nieuwe producten, zoeken+beoordelen nieuwe grondstoffen, begeleiding Duitse klanten

Het doel van deze korte vragenlijst is het achterhalen van uw persoonlijke mening wat betreft de huidige staat en het algehele gebruik van Exact binnen de onderneming. Resultaten zullen worden gebruikt om een nauwkeurig beeld te scheppen over complicaties die momenteel aanwezig zijn en de gewenste verbeterpunten.

Het invullen kost slechts enkele minuten van uw tijd. Bedankt voor uw deelname.

VRAGEN

1. Wat zijn hoofdzakelijk de werkzaamheden waarvoor U Exact gebruikt en/of toepast? (korte beschrijving van gebruik van applicaties, functies, wat voor formulieren of gegevens Exact levert etc.).

Sterker nog: ik gebruik Exact helemaal niet, vandaar dat ik alle volgende vragen ook niet kan beantwoorden

2. Wat zijn voor U obstakels bij het huidige gebruik van Exact voor uw dagelijkse werkzaamheden en wat is de eventuele oorzaak hiervan? (zijn er dingen die ontbreken, dingen die omslachtig of zelfs helemaal niet goed werken etc.).

Introductiecursus

3. Hoe worden dergelijke obstakels momenteel door U omzeild? (o.a. het gebruikmaken van alternatieve applicaties zoals Word, Excel of eventueel het gebruik van Exact grotendeels vermijden waar mogelijk).

[TYP HIER]

4. Wat zou U zelf graag veranderd willen zien met betrekking tot Exact? (extra functionaliteit die het werk vergemakkelijken, meer informatie beschikbaar na specifieke taken zoals het inkopen van goederen etc.).

[TYP HIER]

SCORES

1. In welke mate maakt U gebruik van Exact voor uw dagelijkse werkzaamheden? Geef een score van (zeer weinig) 1 – 5 (zeer veel).

Score:

2. Hoe beoordeelt U de moeilijkheidsgraad met betrekking tot het gebruik van Exact om uw dagelijkse werkzaamheden te ondersteunen? Geef een score van (zeer makkelijk) 1 – 5 (zeer moeilijk).

Score:

3. In welke mate is het gebruik van Exact vereist/onvermijdelijk voor uw dagelijkse werkzaamheden? Geef een score van (nauwelijks vereist) 1 – 5 (zeer vereist).

Score:

4. Op een schaal van (zeer ontevreden) 1 – 5 (zeer tevreden), hoe tevreden bent U over het huidige gebruik van Exact met betrekking tot uw eigen werkzaamheden?

Score:

EXTRA OPMERKINGEN

Heeft U eventuele extra op- of aanmerkingen die buiten deze vragenlijst vallen? Geeft U deze dan hieronder weer.

[EXTRA OP- OF AANMERKINGEN]

Naam: Ella Rijnsent

Afdeling: Sales

Functie en (dagelijkse) taken:

Manager internal sales department

Het doel van deze korte vragenlijst is het achterhalen van uw persoonlijke mening wat betreft de huidige staat en het algehele gebruik van Exact binnen de onderneming. Resultaten zullen worden gebruikt om een nauwkeurig beeld te scheppen over complicaties die momenteel aanwezig zijn en de gewenste verbeterpunten.

Het invullen kost slechts enkele minuten van uw tijd. Bedankt voor uw deelname.

VRAGEN

1. Wat zijn hoofdzakelijk de werkzaamheden waarvoor U Exact gebruikt en/of toepast? (korte beschrijving van gebruik van applicaties, functies, wat voor formulieren of gegevens Exact levert etc.).

Aanmaken artikelen en prijslijsten, maken afname overzichten

2. Wat zijn voor U obstakels bij het huidige gebruik van Exact voor uw dagelijkse werkzaamheden en wat is de eventuele oorzaak hiervan? (zijn er dingen die ontbreken, dingen die omslachtig of zelfs helemaal niet goed werken etc.).

Maken overzichten, bijhouden afnamehoeveelheden (nog geen contractadministratie operationeel binnen exact)

3. Hoe worden dergelijke obstakels momenteel door U omzeild? (o.a. het gebruikmaken van alternatieve applicaties zoals Word, Excel of eventueel het gebruik van Exact grotendeels vermijden waar mogelijk).

Word en Excel worden gebruikt

4. Wat zou U zelf graag veranderd willen zien met betrekking tot Exact? (extra functionaliteit die het werk vergemakkelijken, meer informatie beschikbaar na specifieke taken zoals het inkopen van goederen etc.).

Contractadministratie, eenvoudiger overzichten kunnen genereren

SCORES

1. In welke mate maakt U gebruik van Exact voor uw dagelijkse werkzaamheden? Geef een score van (zeer weinig) 1 – 5 (zeer veel).

Score: 5

2. Hoe beoordeelt U de moeilijkheidsgraad met betrekking tot het gebruik van Exact om uw dagelijkse werkzaamheden te ondersteunen? Geef een score van (zeer makkelijk) 1 – 5 (zeer moeilijk).

Score: 3 (maar weet ook te weinig van wat allemaal mogelijk is, geen cursus gehad)

3. In welke mate is het gebruik van Exact vereist/onvermijdelijk voor uw dagelijkse werkzaamheden? Geef een score van (nauwelijks vereist) 1 – 5 (zeer vereist).

Score: 5

4. Op een schaal van (zeer ontevreden) 1 – 5 (zeer tevreden), hoe tevreden bent U over het huidige gebruik van Exact met betrekking tot uw eigen werkzaamheden?

Score: 3 (heeft te maken met score bij vraag 2)

EXTRA OPMERKINGEN

Heeft U eventuele extra op- of aanmerkingen die buiten deze vragenlijst vallen? Geeft U deze dan hieronder weer.

Volgens mij is er veel meer uit exact te halen voor onze organisatie dan wij tot nu toe doen. Is te wijten aan gebrek aan kennis over de mogelijkheden

Naam: Marijke Zilverberg
Afdeling: Internal Sales dept.
Functie en (dagelijkse) taken:

Afhandelen van orders. Van binnenkomst tot levering. Documenten verzorgen. Inkoop zakgoed.

Het doel van deze korte vragenlijst is het achterhalen van uw persoonlijke mening wat betreft de huidige staat en het algehele gebruik van Exact binnen de onderneming. Resultaten zullen worden gebruikt om een nauwkeurig beeld te scheppen over complicaties die momenteel aanwezig zijn en de gewenste verbeterpunten.

Het invullen kost slechts enkele minuten van uw tijd. Bedankt voor uw deelname.

VRAGEN

1. Wat zijn hoofdzakelijk de werkzaamheden waarvoor U Exact gebruikt en/of toepast? (korte beschrijving van gebruik van applicaties, functies, wat voor formulieren of gegevens Exact levert etc.).

Invoeren orders, produceren en inkopen op orders. Terugmelden van orders (na levering). Zakgoedinventarisaties maken. Inkopen van zakgoed.

2. Wat zijn voor U obstakels bij het huidige gebruik van Exact voor uw dagelijkse werkzaamheden en wat is de eventuele oorzaak hiervan? (zijn er dingen die ontbreken, dingen die omslachtig of zelfs helemaal niet goed werken etc.).

Mn inkoop van transport dat de bestelling niet goed gevuld wordt. Missen van prijzen. Missen van artikelen.

3. Hoe worden dergelijke obstakels momenteel door U omzeild? (o.a. het gebruikmaken van alternatieve applicaties zoals Word, Excel of eventueel het gebruik van Exact grotendeels vermijden waar mogelijk).

Handmatig erbij schrijven bij inkoop transport wat ik mis. Word gebruiken om toch order te kunnen bevestigen en transport in te kunnen kopen als dat niet kan in Exact bij missen artikelen of prijzen.

4. Wat zou U zelf graag veranderd willen zien met betrekking tot Exact? (extra functionaliteit die het werk vergemakkelijken, meer informatie beschikbaar na specifieke taken zoals het inkopen van goederen etc.).

Erger me dat de transportbestellingen niet goed gevuld worden. Dat we apostroffen ed kunnen gebruiken in Exact zonder dat hier last van ondervonden wordt.

SCORES

1. In welke mate maakt U gebruik van Exact voor uw dagelijkse werkzaamheden? Geef een score van (zeer weinig) 1 – 5 (zeer veel).

Score: 5

2. Hoe beoordeelt U de moeilijkheidsgraad met betrekking tot het gebruik van Exact om uw dagelijkse werkzaamheden te ondersteunen? Geef een score van (zeer makkelijk) 1 – 5 (zeer moeilijk).

Score: 2

3. In welke mate is het gebruik van Exact vereist/onvermijdelijk voor uw dagelijkse werkzaamheden? Geef een score van (nauwelijks vereist) 1 – 5 (zeer vereist).

Score: 5

4. Op een schaal van (zeer ontevreden) 1 – 5 (zeer tevreden), hoe tevreden bent U over het huidige gebruik van Exact met betrekking tot uw eigen werkzaamheden?

Score: 3

EXTRA OPMERKINGEN

Heeft U eventuele extra op- of aanmerkingen die buiten deze vragenlijst vallen? Geeft U deze dan hieronder weer.

[EXTRA OP- OF AANMERKINGEN]

Naam: Rembert

Afdeling: [AFDELING]

Functie en (dagelijkse) taken:

Supply chain management

Het doel van deze korte vragenlijst is het achterhalen van uw persoonlijke mening wat betreft de huidige staat en het algehele gebruik van Exact binnen de onderneming. Resultaten zullen worden gebruikt om een nauwkeurig beeld te scheppen over complicaties die momenteel aanwezig zijn en de gewenste verbeterpunten.

Het invullen kost slechts enkele minuten van uw tijd. Bedankt voor uw deelname.

VRAGEN

1. Wat zijn hoofdzakelijk de werkzaamheden waarvoor U Exact gebruikt en/of toepast? (korte beschrijving van gebruik van applicaties, functies, wat voor formulieren of gegevens Exact levert etc.).

Management info zoeken, receptnummers zoeken, prijsafspraken zoeken, problemen andere gebruikers oplossen

2. Wat zijn voor U obstakels bij het huidige gebruik van Exact voor uw dagelijkse werkzaamheden en wat is de eventuele oorzaak hiervan? (zijn er dingen die ontbreken, dingen die omslachtig of zelfs helemaal niet goed werken etc.).

Exact is nog niet volledig geïmplementeerd.

3. Hoe worden dergelijke obstakels momenteel door U omzeild? (o.a. het gebruikmaken van alternatieve applicaties zoals Word, Excel of eventueel het gebruik van Exact grotendeels vermijden waar mogelijk).

Deel van processen gaat via access database.

4. Wat zou U zelf graag veranderd willen zien met betrekking tot Exact? (extra functionaliteit die het werk vergemakkelijken, meer informatie beschikbaar na specifieke taken zoals het inkopen van goederen etc.).

Meer gebruik maken van werkstroken in Synergy
Managementinfo via MS reporting

SCORES

1. In welke mate maakt U gebruik van Exact voor uw dagelijkse werkzaamheden? Geef een score van (zeer weinig) 1 – 5 (zeer veel).

Score: 2

2. Hoe beoordeelt U de moeilijkheidsgraad met betrekking tot het gebruik van Exact om uw dagelijkse werkzaamheden te ondersteunen? Geef een score van (zeer makkelijk) 1 – 5 (zeer moeilijk).

Score: 3

3. In welke mate is het gebruik van Exact vereist/onvermijdelijk voor uw dagelijkse werkzaamheden? Geef een score van (nauwelijks vereist) 1 – 5 (zeer vereist).

Score: 3

4. Op een schaal van (zeer ontevreden) 1 – 5 (zeer tevreden), hoe tevreden bent U over het huidige gebruik van Exact met betrekking tot uw eigen werkzaamheden?

Score: 3

EXTRA OPMERKINGEN

Heeft U eventuele extra op- of aanmerkingen die buiten deze vragenlijst vallen? Geeft U deze dan hieronder weer.

Er is behoefte aan een meer eenduidige werkwijze in Exact

Naam: Christian de Vos
Afdeling: Financiële administratie
Functie en (dagelijkse) taken:

Boekhouder, fin. administratie, belastingaangiften, salarisadmin.

Het doel van deze korte vragenlijst is het achterhalen van uw persoonlijke mening wat betreft de huidige staat en het algehele gebruik van Exact binnen de onderneming. Resultaten zullen worden gebruikt om een nauwkeurig beeld te scheppen over complicaties die momenteel aanwezig zijn en de gewenste verbeterpunten.

Het invullen kost slechts enkele minuten van uw tijd. Bedankt voor uw deelname.

VRAGEN

1. Wat zijn hoofdzakelijk de werkzaamheden waarvoor U Exact gebruikt en/of toepast? (korte beschrijving van gebruik van applicaties, functies, wat voor formulieren of gegevens Exact levert etc.).

Inrichting fin. administratie: Financieel, grootboek en Systeem, landen, belastingcodes
Invoeren fin. gegevens: bankboek, inkoopboek, memoriaal
Raadplegen fin. gegevens; Debiteuren en crediteuren
Aanmaningen; Debiteuren, te vorderen, ouderdomsanalyse
Factureren: Factuur, invoer, verwerken
Voorraadcontrole; Voorraadposities, artikelbeheer en Systeem, Logistiek Herwaardering en afstemmen voorraad; Voorraad, magazijnbeheer, afstemmen
Betalingen verrichten; Cashflow
Belastingaangiften; Financieel, invoer, verwerken en Financieel, BTW
Spilanalyses; Financieel, verslagen; Facturering Agro Bodemvoeding, CBS en ICP_aangifte, div. probleemgevallen
Analytisch boekhouden, analyseren div. probleemgevallen
Diagnose systeem, oplossen kleine sys.problemen; Systeem, controles, diagnose

2. Wat zijn voor U obstakels bij het huidige gebruik van Exact voor uw dagelijkse werkzaamheden en wat is de eventuele oorzaak hiervan? (zijn er dingen die ontbreken, dingen die omslachtig of zelfs helemaal niet goed werken etc.).

Mogelijkheid ontbreekt om hoeveelheden uit contracten bij te houden in Exact.

Ontbrekende overzichten:

- marge per vracht, per klant
- afzet klant bij een bepaalde leverancier

3. Hoe worden dergelijke obstakels momenteel door U omzeild? (o.a. het gebruikmaken van alternatieve applicaties zoals Word, Excel of eventueel het gebruik van Exact grotendeels vermijden waar mogelijk).

Zelf overzichten bijhouden in Excell, schatten van marges. Maak gebruik van info van derden, bv. resterende contracthoeveelheid vermeld op inkoopfacturen.

4. Wat zou U zelf graag veranderd willen zien met betrekking tot Exact? (extra functionaliteit die het werk vergemakkelijken, meer informatie beschikbaar na specifieke taken zoals het inkopen van goederen etc.).

Misschien moet Exact eenvoudiger worden ingericht zodat betreffende overzichten eenvoudiger te maken zijn.
Gebruik maken van optie raamcontracten in Exact.

SCORES

1. In welke mate maakt U gebruik van Exact voor uw dagelijkse werkzaamheden? Geef een score van (zeer weinig) 1 – 5 (zeer veel).

Score: 4

2. Hoe beoordeelt U de moeilijkheidsgraad met betrekking tot het gebruik van Exact om uw dagelijkse werkzaamheden te ondersteunen? Geef een score van (zeer makkelijk) 1 – 5 (zeer moeilijk).

Score: 5

3. In welke mate is het gebruik van Exact vereist/onvermijdelijk voor uw dagelijkse werkzaamheden? Geef een score van (nauwelijks vereist) 1 – 5 (zeer vereist).

Score: 5

4. Op een schaal van (zeer ontevreden) 1 – 5 (zeer tevreden), hoe tevreden bent U over het huidige gebruik van Exact met betrekking tot uw eigen werkzaamheden?

Score: 3

EXTRA OPMERKINGEN

Heeft U eventuele extra op- of aanmerkingen die buiten deze vragenlijst vallen? Geeft U deze dan hieronder weer.

[EXTRA OP- OF AANMERKINGEN]

Naam: Carola

Afdeling: Binnendienst

Functie en (dagelijkse) taken:

Hoofdzakelijk het inplannen van orders

Het doel van deze korte vragenlijst is het achterhalen van uw persoonlijke mening wat betreft de huidige staat en het algehele gebruik van Exact binnen de onderneming. Resultaten zullen worden gebruikt om een nauwkeurig beeld te scheppen over complicaties die momenteel aanwezig zijn en de gewenste verbeterpunten.

Het invullen kost slechts enkele minuten van uw tijd. Bedankt voor uw deelname.

VRAGEN

1. Wat zijn hoofdzakelijk de werkzaamheden waarvoor U Exact gebruikt en/of toepast? (korte beschrijving van gebruik van applicaties, functies, wat voor formulieren of gegevens Exact levert etc.).

Het CRM en het invoeren van orders

2. Wat zijn voor U obstakels bij het huidige gebruik van Exact voor uw dagelijkse werkzaamheden en wat is de eventuele oorzaak hiervan? (zijn er dingen die ontbreken, dingen die omslachtig of zelfs helemaal niet goed werken etc.).

Niet alles wordt genoteerd in Exact, en het niet goed "vullen" van de gegevens, geen genoeg ruimte om notities te kunnen maken.

3. Hoe worden dergelijke obstakels momenteel door U omzeild? (o.a. het gebruikmaken van alternatieve applicaties zoals Word, Excel of eventueel het gebruik van Exact grotendeels vermijden waar mogelijk).

Inderdaad het gebruiken van Word of Excel of met de hand

4. Wat zou U zelf graag veranderd willen zien met betrekking tot Exact? (extra functionaliteit die het werk vergemakkelijken, meer informatie beschikbaar na specifieke taken zoals het inkopen van goederen etc.).

Dat offertes gekoppeld worden, wanneer prijsafspraken aflopen er een pop-up binnenkomt bijv.

SCORES

1. In welke mate maakt U gebruik van Exact voor uw dagelijkse werkzaamheden? Geef een score van (zeer weinig) 1 – 5 (zeer veel).

Score: 5

2. Hoe beoordeelt U de moeilijkheidsgraad met betrekking tot het gebruik van Exact om uw dagelijkse werkzaamheden te ondersteunen? Geef een score van (zeer makkelijk) 1 – 5 (zeer moeilijk).

Score: 3

3. In welke mate is het gebruik van Exact vereist/onvermijdelijk voor uw dagelijkse werkzaamheden? Geef een score van (nauwelijks vereist) 1 – 5 (zeer vereist).

Score: 1

4. Op een schaal van (zeer ontevreden) 1 – 5 (zeer tevreden), hoe tevreden bent U over het huidige gebruik van Exact met betrekking tot uw eigen werkzaamheden?

Score: 3

EXTRA OPMERKINGEN

Heeft U eventuele extra op- of aanmerkingen die buiten deze vragenlijst vallen? Geeft U deze dan hieronder weer.

[EXTRA OP- OF AANMERKINGEN]

Naam: Simone Dekker

Afdeling: Verkoop

Functie en (dagelijkse) taken: Marketing /Sales Manager

Ik ben verantwoordelijk voor Marketing en Verkoop. Het grootste deel van mijn tijd besteed ik aan het onderhouden van contacten met klanten (telefonisch en per e-mail), het maken van calculaties en het uitbrengen van offertes, het benaderen van potentiële klanten en het bezoeken van bestaande en nieuwe contacten in binnen- en buitenland. Daarnaast verricht ik allerlei marketingactiviteiten zoals het ontwikkelen van een nieuwe website, het ontwerpen van folders en zakgoed en andere marketingcommunicatie-uitingen. Vragen vanuit de markt tav nieuwe producten bespreek ik met mijn collega's Ulrike (product manager) en Jan (technical director).

Het doel van deze korte vragenlijst is het achterhalen van uw persoonlijke mening wat betreft de huidige staat en het algehele gebruik van Exact binnen de onderneming. Resultaten zullen worden gebruikt om een nauwkeurig beeld te scheppen over complicaties die momenteel aanwezig zijn en de gewenste verbeterpunten.

Het invullen kost slechts enkele minuten van uw tijd. Bedankt voor uw deelname.

VRAGEN

1. Wat zijn hoofdzakelijk de werkzaamheden waarvoor U Exact gebruikt en/of toepast? (korte beschrijving van gebruik van applicaties, functies, wat voor formulieren of gegevens Exact levert etc.).

Opzoeken:

- CRM-gegevens (naam, telefoonr, adres, kredietlimiet etc.)
- Afzetcijfers klanten (hoeveel van welke producten in een bepaalde periode)
- Afzetcijfers producttypen (hoeveel KMPK is er in totaal afgezet in periode X)
- Voorraadcijfers zakgoed
- Orderportefeuille (hoeveel KMPK orders zijn er ingepland voor maand X)
- Openstaande posten debiteuren (totaal, vervallen)
- RvN heeft een aantal rapportageoverzichten in Access gemaakt (koppeling EXACT) waar ik met name voor het maken van prognoses gebruik van maak.

2. Wat zijn voor U obstakels bij het huidige gebruik van Exact voor uw dagelijkse werkzaamheden en wat is de eventuele oorzaak hiervan? (zijn er dingen die ontbreken, dingen die omslachtig of zelfs helemaal niet goed werken etc.).

- Te weinig kennis van de mogelijkheden van EXACT. Tot op heden geen uitleg of opleiding gehad.
- Foutgevoeligheid; er hoeft maar 1 vakje niet goed aangevinkt te zijn en er komt een getal uit dat niet correct is voor mijn analyse. Daarom zouden er voor alle overzichten die de verkoop nodig heeft standaard rapportages moeten komen met simpele keuzemenu's.
- Ik mis de koppeling tussen inkoop en verkoop. (In periode X (01-08-2012 / 31-07-2013) heeft leverancier Y (SNP) aan klanten XYX (Compo, GPI, Weibulls) producten XYZ (koemestpellet, koemestkruimel, kippenmestpellet) geleverd.
- Ik krijg niet eenvoudig inzicht in inkoop- en verkoopprijzen in een bepaalde periode voor een bepaald product

- Tot op heden geen nacalculatie via EXACT mogelijk. Dat kan pas als alle kostencomponenten die op een levering van toepassing zijn worden verbijzonderd. Is dit überhaupt mogelijk?
- Top op heden geen contracten of prognoses in EXACT (Klant X koopt 500 ton product Y in periode X – hoeveel heeft hij per vandaag afgenomen van het lopende contract en wat zijn de inkoop- en verkoopprijzen behorende bij dit contract?)

3. Hoe worden dergelijke obstakels momenteel door U omzeild? (o.a. het gebruikmaken van alternatieve applicaties zoals Word, Excel of eventueel het gebruik van Exact grotendeels vermijden waar mogelijk).

- Via omwegen de benodigde informatie bij elkaar zoeken – inefficiënt
- Voorcalculatie via excell – nacalculatie op basis van persoonlijke schattingen van de daadwerkelijke kosten
- Gebruik rapportages RvN Access
- Specifieke vragen leg ik neer bij CdV (kost hem soms weinig, soms veel tijd)

4. Wat zou U zelf graag veranderd willen zien met betrekking tot Exact? (extra functionaliteit die het werk vergemakkelijken, meer informatie beschikbaar na specifieke taken zoals het inkopen van goederen etc.).

- standaard rapportages voor alle voor de verkoop benodigde informatie (zie punt 2 en 3)
- gebruik van prognose- en contractenmodules
- opleiding over mogelijkheden EXACT op mijn functie toegespitst
- betrouwbaarheid systeem vergroten door een analyse van de huidige invoer van gegevens en het toekomstige volgens nieuwe procedures vastleggen van gegevens
- verbijzondering van kosten naar leveringen tbv een goede nacalculatie

SCORES

1. In welke mate maakt U gebruik van Exact voor uw dagelijkse werkzaamheden? Geef een score van (zeer weinig) 1 – 5 (zeer veel).

Score:

2

2. Hoe beoordeelt U de moeilijkheidsgraad met betrekking tot het gebruik van Exact om uw dagelijkse werkzaamheden te ondersteunen? Geef een score van (zeer makkelijk) 1 – 5 (zeer moeilijk).

Score: 3

3. In welke mate is het gebruik van Exact vereist/onvermijdelijk voor uw dagelijkse werkzaamheden? Geef een score van (nauwelijks vereist) 1 – 5 (zeer vereist).

Score: 3 (+ een dosis gezond verstand)

4. Op een schaal van (zeer ontevreden) 1 – 5 (zeer tevreden), hoe tevreden bent U over het huidige gebruik van Exact met betrekking tot uw eigen werkzaamheden?

Score: 2

EXTRA OPMERKINGEN

Heeft U eventuele extra op- of aanmerkingen die buiten deze vragenlijst vallen? Geeft U deze dan hieronder weer.

Ik zou graag willen weten welke input ik jou kan geven voor een optimale uitvoering van jouw project.

Naam: Jan Haandrikman

Afdeling: Directie

Functie en (dagelijkse) taken:

Productie en financiën.

Het doel van deze korte vragenlijst is het achterhalen van uw persoonlijke mening wat betreft de huidige staat en het algehele gebruik van Exact binnen de onderneming. Resultaten zullen worden gebruikt om een nauwkeurig beeld te scheppen over complicaties die momenteel aanwezig zijn en de gewenste verbeterpunten.

Het invullen kost slechts enkele minuten van uw tijd. Bedankt voor uw deelname.

VRAGEN

1. Wat zijn hoofdzakelijk de werkzaamheden waarvoor U Exact gebruikt en/of toepast? (korte beschrijving van gebruik van applicaties, functies, wat voor formulieren of gegevens Exact levert etc.).

-
- Balans V&W
 - Overzichten orders/bestellingen/productieorders
 - Statistieken verkoop en inkoop
 - Artikelgegevens
 - CRM-gegevens
-

2. Wat zijn voor U obstakels bij het huidige gebruik van Exact voor uw dagelijkse werkzaamheden en wat is de eventuele oorzaak hiervan? (zijn er dingen die ontbreken, dingen die omslachtig of zelfs helemaal niet goed werken etc.).

Wat ik zelf erg storend vind is dat er veel te veel keuzemogelijkheden zijn voor overzichten die (voor ons) absoluut niet relevant zijn.

Verder worden aanpassingen die ik aan rapporten maak niet vast gelegd, zodat ik ze elke keer opnieuw moet aanpassen.

Rapport-opmaak binnen Exact is een Spartaans systeem

3. Hoe worden dergelijke obstakels momenteel door U omzeild? (o.a. het gebruikmaken van alternatieve applicaties zoals Word, Excel of eventueel het gebruik van Exact grotendeels vermijden waar mogelijk).

Voor database-achtige toegevoegde gegevens zijn er een aantal Acces-databases opgezet. Deze kunnen waarschijnlijk beter in SQL worden vastgelegd, maar daarmee is rapportage weer lastiger, omdat we met de tools daarvoor niet bekend zijn.

Ik zie bij MeMonners de neiging om gegevens die in Exact zitten niet te gebruiken omdat ze moeilijk toegankelijk zijn. In plaats daarvan ontstaan er dan weer allerlei eigen lijsten in Excel met alle extra werk en kans op fouten vanden.

4. Wat zou U zelf graag veranderd willen zien met betrekking tot Exact? (extra functionaliteit die het werk vergemakkelijken, meer informatie beschikbaar na specifieke taken zoals het inkopen van goederen etc.).

Belangrijkste is m.i. dat Exact-Globe en Synergy zoveel mogelijk gebruikt wordt als enige plek waarin alle gemaakte afspraken, contracten (inkoop en verkoop) en gerealiseerde orders worden vastgelegd.

Ook zouden alle gemaakte prognoses in Exact vastgelegd moeten worden en wel op zo'n manier dat voortdurend plannen, afspraken en realisatie tegen elkaar kunnen worden afgezet, zodat we eenvoudig kunnen zien waar we staan.

SCORES

1. In welke mate maakt U gebruik van Exact voor uw dagelijkse werkzaamheden? Geef een score van (zeer weinig) 1 – 5 (zeer veel).

Score: 2

2. Hoe beoordeelt U de moeilijkheidsgraad met betrekking tot het gebruik van Exact om uw dagelijkse werkzaamheden te ondersteunen? Geef een score van (zeer makkelijk) 1 – 5 (zeer moeilijk).

Score: 4

3. In welke mate is het gebruik van Exact vereist/onvermijdelijk voor uw dagelijkse werkzaamheden? Geef een score van (nauwelijks vereist) 1 – 5 (zeer vereist).

Score: 3

4. Op een schaal van (zeer ontevreden) 1 – 5 (zeer tevreden), hoe tevreden bent U over het huidige gebruik van Exact met betrekking tot uw eigen werkzaamheden?

Score: 2

EXTRA OPMERKINGEN

Heeft U eventuele extra op- of aanmerkingen die buiten deze vragenlijst vallen? Geeft U deze dan hieronder weer.

[EXTRA OP- OF AANMERKINGEN]

Naam: Gosse Kaastra

Afdeling: NVT

Functie en (dagelijkse) taken:

Inkoop logistieke diensten, coördineren import, contact persoon diverse overheidsdiensten (o.a. Douane, KVK)

Het doel van deze korte vragenlijst is het achterhalen van uw persoonlijke mening wat betreft de huidige staat en het algehele gebruik van Exact binnen de onderneming. Resultaten zullen worden gebruikt om een nauwkeurig beeld te scheppen over complicaties die momenteel aanwezig zijn en de gewenste verbeterpunten.

Het invullen kost slechts enkele minuten van uw tijd. Bedankt voor uw deelname.

VRAGEN

1. Wat zijn hoofdzakelijk de werkzaamheden waarvoor U Exact gebruikt en/of toepast? (korte beschrijving van gebruik van applicaties, functies, wat voor formulieren of gegevens Exact levert etc.).

Voor het aanmaken, invoeren en uitvoeren van orders (OBI). Opzoeken van adressen en namen. Vastleggen van transport artikelen. Overzicht maken transport artikelen.

2. Wat zijn voor U obstakels bij het huidige gebruik van Exact voor uw dagelijkse werkzaamheden en wat is de eventuele oorzaak hiervan? (zijn er dingen die ontbreken, dingen die omslachtig of zelfs helemaal niet goed werken etc.).

Gebrek aan basiskennis van Exact. Gebrek aan kennis voor het maken van goede overzichten. Het systeem is niet hufter proof, kan zeer makkelijk worden veranderd. Het systeem vult slecht vaste informatie. Er moet veel handmatig worden bijgevuld. Koppelingen werken slecht waardoor overzichten niet betrouwbaar zijn. Geen eenheid van invoer en uitvoering. Digitale output werkt zeer omslachtig.

3. Hoe worden dergelijke obstakels momenteel door U omzeild? (o.a. het gebruikmaken van alternatieve applicaties zoals Word, Excel of eventueel het gebruik van Exact grotendeels vermijden waar mogelijk).

Via access worden de meeste overzichten gedraaid. In Excel houd ik mijn transportoverzicht bij omdat dat nu niet eenduidig uit Exact komt.

4. Wat zou U zelf graag veranderd willen zien met betrekking tot Exact? (extra functionaliteit die het werk vergemakkelijken, meer informatie beschikbaar na specifieke taken zoals het inkopen van goederen etc.).

Een doorontwikkeling van de werkstromen. Kritisch kijken naar de order invoer en de doorontwikkeling daarvan. Meer gebruik van de rapportage functies binnen exact. Meer een dashboard krijgen van de lopende informatie. Dit zodat het overzicht wordt verbeterd en dat er geen gebruik meer wordt gemaakt van allerlei andere applicaties.

SCORES

1. In welke mate maakt U gebruik van Exact voor uw dagelijkse werkzaamheden? Geef een score van (zeer weinig) 1 – 5 (zeer veel).

Score: 3

2. Hoe beoordeelt U de moeilijkheidsgraad met betrekking tot het gebruik van Exact om uw dagelijkse werkzaamheden te ondersteunen? Geef een score van (zeer makkelijk) 1 – 5 (zeer moeilijk).

Score: 4

3. In welke mate is het gebruik van Exact vereist/onvermijdelijk voor uw dagelijkse werkzaamheden? Geef een score van (nauwelijks vereist) 1 – 5 (zeer vereist).

Score: 3

4. Op een schaal van (zeer ontevreden) 1 – 5 (zeer tevreden), hoe tevreden bent U over het huidige gebruik van Exact met betrekking tot uw eigen werkzaamheden?

Score: 2

EXTRA OPMERKINGEN

Heeft U eventuele extra op- of aanmerkingen die buiten deze vragenlijst vallen? Geeft U deze dan hieronder weer.

We maken op dit moment slechts gebruik van een tipje van de ijsberg van Exact. Veel binnen het systeem wordt nu (nog) niet gebruikt. Door gebrek aan kennis van de medewerker blijven er veel mogelijkheden nu onbenut. Ook is het jammer dat het verkrijgen van betrouwbare overzichten niet direct mogelijk is uit Exact.

Case Study: Huck International, Inc.



Case Study

Case studies are analyses of persons, events, decisions, periods, projects, policies, institutions, or other systems that are studied holistically by one or more methods. The case that is the subject of the inquiry will be an instance of a class of phenomena that provides an analytical frame — an object — within which the study is conducted and which the case illuminates and explicates.

About Huck

Huck International, Inc. successfully implemented an ERP system during 1998 and 1999. This case study is a description of their implementation, including an indication of the degree to which they adhered to the critical success factors and implementation procedures.

Huck International, Inc. designs, manufactures and distributes a wide range of proprietary commercial-, industrial- and aerospace fastening systems.

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III.

ERP implementation at Huck International, Inc

Huck International, Inc. successfully implemented an ERP system during 1998 and 1999. This case study is a description of their implementation, including an indication of the degree to which they adhered to the critical success factors and implementation procedures described in the previous section (Umble et al, 2003).

About Huck International, Inc

Huck International, Inc. designs, manufactures and distributes a wide range of proprietary commercial-, industrial- and aerospace fastening systems. At the start of the ERP implementation, Huck was comprised of three aerospace fastener plants, two industrial fastener plants, one installation tool manufacturing plant, corporate headquarters and lastly, five international sales- and distribution sites. Regarding the latter, one of the sites also manufactured aerospace fasteners, while another produced industrial fasteners. During the implementation, acquisitions and consolidations significantly changed the company structure; the original twelve sites were consolidated to ten, and an additional ten were added through acquisition.

The legacy system at all of Huck's North American and European sites was CA/ManMan, a classic mini-computer based MRP II system³⁹. Although the latter was ancient by IT standards, Huck had implemented an extensive local area network. Most users accessed the main computer through the network and were familiar with windows-based applications. Also, network-based information sharing was widely used by most key personnel.

Critical ERP implementation factors: Huck International, Inc

As stated, throughout literature, a variety of factors have been identified that are deemed crucial to the success of an ERP implementation. Here, it is discussed whether or not Huck has adhered to these criteria and if so, to what extent.

Clear understanding of strategic goals

Several factors combined initiated the move to ERP, Y2K incompatibility⁴⁰ being the key issue. Multiple upgrades and recreation of site-specific modifications would have been required to become Y2K compliant, the total costs and business disruption of which would have been dramatic. Seeing as the base software had not been significantly enhanced in recent years, the expense and effort would, at best, achieve no functional improvement. In addition, the business environment was rapidly changing to encourage more intimate business-to-business transactions with key customers, and the old system was simply not compatible with the newer ones that were being installed in the customer base. Future enhancements to the existing system were not expected, and Huck did not want to maintain in-house information system resources to develop the new capabilities and interfaces that would be required. Overall, it is clear that the organization had a clear vision of the goals they wanted to achieve, which served as the origin for implementing the new ERP system.

³⁹ Manufacturing Resource Planning (MRP II) is defined as a method for the effective planning of all resources of a manufacturing company. Ideally, it addresses operational planning in units, financial planning and even has a simulation capability to answer "what-if" questions and extensions of closed-loop Materials Requirements Planning (MRP). Furthermore, this is not exclusively a software function. Instead, it focuses on managing people skills, dedication to database accuracy and computer resources. Overall, it is a total company management concept for using human resources more productively.

⁴⁰ Y2K is an abbreviation for "year 2000." As that year approached, many feared that computer programs storing year values as two-digit figures (such as 99) would cause problems. Many programs written years ago (when storage limitations encouraged such information economies) are still being used. The problem was that when the two-digit space allocated for "99" rolled over to 2000, the next number was "00." Frequently, program logic assumes that the year number gets larger, not smaller - so "00" was anticipated to wreak havoc in a program that hadn't been modified to account for the millennium.

Commitment by top management

Huck's CEO issued a directive that the company would move toward a single information system for all current and future sites. This was strongly supported by top management. However, during the implementation, a realignment of the executive staff somewhat affected the continuity of executive support. More significantly, the closing of two sites, the acquisition of ten new ones and unprecedented record sales distracted top management to the extent that appropriate executive level support was somewhat sporadic. At the very least, it was certainly less visible than might have been desired.

Excellent project management

The new system was expected to replace all current ManMan functions. The implementation strategy was to develop model processes at the primary site and rollout to subsequent establishments in order to create a framework on which to build. This would provide learning curve benefits, as well as efficient resource utilization as support personnel could move from site to site as the timeline rolled forward. Furthermore, as part of the multi-site implementation process, a Project Management Office was established. This function was charged with communication and coordination of resources, whilst the forward transfer of lessons learned from early implementations to later ones was another major responsibility.

Organizational change management

Long before the ERP implementation was undertaken, Huck had developed a company culture that was receptive to change. For several years, the company had embraced a program of monthly "kaizen⁴¹ breakthrough events" in the pursuit of lean manufacturing. These events occupy teams – composed of six to ten shop floor employees, local- and corporate executives, customers and suppliers – who are charged with the analysis, redesign and implementation of improvements in specific business- or manufacturing processes. Teams frequently install/move/modify equipment, rewrite procedures, change work assignments, set local operations policy and otherwise make changes as required to achieve their designated goals. In addition, Huck has numerous self-directed, permanent cross-functional teams that are charged with continuous improvement in a variety of areas. Overall, Huck was well positioned to implement and accept the changes brought about by the ERP implementation.

A great implementation team

The implementation team was selected from all functional disciplines. At the primary site, twelve of the most capable and knowledgeable people were chosen. However, for some members, a full-time commitment was added to their continuing daily duties and responsibilities. In hindsight, a better approach would have been to assign a smaller team, the individuals of which would be completely free of day-to-day interruptions (for instance, a team consisting of six multi-discipline members). Such an arrangement would have likely been more productive, the premise of which is supported by results obtained from the conference room pilot. During this phase, significant improvements were generated by team members that had sufficient time available to explore alternate process strategies. In contrast, functional areas represented by individuals that had inadequate time to dedicate to the pilot typically resulted in a substandard replication of the old legacy system processes.

Data accuracy

Once the pilot was approved, the conversion process was tested. While moving data is easy, the difficulty lies in validating that the information is both accurate and complete. Huck's conversion strategy included numerous checks for line counts of sales orders, purchase orders, work orders

⁴¹ Kaizen, also known as continuous improvement, is a long-term approach to work that systematically seeks to achieve small, incremental changes in processes in order to improve efficiency and quality. Kaizen can be applied to any kind of work, but it is perhaps best known for being used in lean manufacturing and lean programming. If a work environment practices kaizen, continuous improvement is the responsibility of every worker, not just a selected few.

and other assorted categories of dynamic data. Furthermore, inventory revaluation is a huge concern when cost accounting systems are changed and in the case of an ERP implementation, it is generally unavoidable. To avoid any serious complications, a process was developed to export real-time data from the converted database and compare the cost variances. Also, stress tests were conducted on the new system as soon as a converted database was available; the project team simulated full business operations by initiating multiple processes and performing system-intensive procedures while simultaneously running CPU-intensive utilities.

Extensive education and training

Education and training were conducted by the implementation team. Step-by-step preparations were created during the pilot, which also included detailed screen shots with valid company data in all fields. These were imported to Word documents, which eventually consisted of both instructions and written procedures. Training materials were available in hard copy for classroom and individual guidance and could also be accessed on the project website. As for the training strategy; the goal was to concentrate first on key users, work group leaders and supervisors. Remaining personnel were gradually brought on to the new system, thus reducing startup problems from poor training and/or learning and hence facilitating the track-down and correction of process errors. Even though education and guidance were well taken into account by the organization for the ERP implementation, Huck did run into a training issue. The project team focused on schooling users in areas where the processes had altered. Those individuals needed specific instructions detailing how to use the new system to perform their daily tasks. However, some business processes remained unaffected and unchanged by the introduction of the new ERP system. When resolving cutover issues, the team discovered that some users who, since they had not been shown a new way to do something, just stopped doing it altogether. In hindsight, to counter a problem such as this one, the team should have compiled and distributed a list of processes that were not changing and needed to be continued as usual.

Focused performance measures

Huck utilizes a number of highly focused performance- and incentive-based measures, including a profit sharing program. When the ERP project began, the involved middle managers' objectives were changed to the single goal of successful system implementation. Additional specific performance measures were developed to measure and motivate the entire work force during the implementation, even as previous goals and objectives were maintained. The expectation was that the increased efficiency due to the new system would more than offset implementation costs.

Interview and responses



Responses

The interview has been conducted with each individual employee of MeMon. Responses given have been noted and are processed in order to display each person's unique view regarding specific subject matters.

Also, included is a copy of the interview itself as well (original Dutch format).

Interview

An interview means a face-to-face interaction between the interviewer and the candidate/candidates so as to obtain desired information from him/them.

It can also be defined as a way of exchanging meanings between individuals by using a common set of symbols. Interviews generally need a preparation. Job interviews seem frightening, even if the individual is well prepared. Interviews have a definite structure. Clear communication should take place during an interview. All interviews have a definite purpose familiar to the interviewer and the candidate/interviewee.

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IV.

Het interview

Het doel van dit interview is het achterhalen van uw persoonlijke mening en aandeel wat betreft de huidige staat van kostencalculaties binnen Exact. Tevens is dit een uitbreiding op de korte vragenlijst die eerder door U is ingevuld. Resultaten zullen worden gebruikt om een concrete afbakening te creëren waarop mijn onderzoek zich zal richten, evenals de verbeteringen die teweege zullen worden gebracht.

Alvast bedankt voor uw deelname.

ALGEMENE OPBOUW + VRAGEN

Introductie + aanleiding interview.

Inl.

Uitleg over het opgestelde “Framework van Profit Margins” binnen de organisatie.

- 1.** Op welke combinatie van niveau/dimensie is informatie voor U benodigd en wat houdt deze informatie precies in?

Afhankelijk van de functie binnen het bedrijf kan informatie voor de één cruciaal zijn, terwijl een ander er juist helemaal geen waarde aan hecht. De essentie van deze vraag is het achterhalen op welk gedeelte van het framework uiteindelijk moet worden gericht en welke aspecten eventueel achterwege zullen worden gelaten.

- 2.** Is deze informatie momenteel in voldoende mate voor U aanwezig? Zo niet, wat ontbreekt er nog?

Verschillende combinaties binnen het framework vereisen ook verschillende soorten informatie, waarbij wederom een onderscheid aanwezig kan zijn afhankelijk van het individu in kwestie. De essentie van deze vraag is het achterhalen welke data prioriteit hebben binnen de organisatie, en welke van minder belang zijn (of in ieder geval met betrekking tot dit onderzoek).

- 3.** Wat is in uw opzicht de belangrijkste combinatie van niveau/dimensie voor de organisatie in het geheel, en wat is in uw opzicht de minst cruciale?

Afhankelijk van de functie binnen het bedrijf kan men een bepaald perspectief ontwikkelen over welke processen en/of activiteiten essentieel zijn voor de onderneming in het geheel. De essentie van deze vraag is het achterhalen van deze verschillende visies per werknemer, opdat wederom kan worden vastgesteld op welke combinaties moet worden gericht en welke eventueel buiten beschouwing worden gelaten.

- 4.** Terugkomend op de korte vragenlijst die eerder door U is ingevuld; uit de resultaten blijkt dat men over het algemeen Exact nog niet ideaal vindt werken (omslachtig, ontbreken van data, gebruik van het systeem omzeilen). Met betrekking tot het framework; hoe ziet voor U de ideale indeling van Exact eruit? Welke gegevens moeten waar/wanneer beschikbaar komen, en voor/door wie?

Hoewel er momenteel al veel dingen gebeuren met behulp van Exact en sinds kort raamcontracten eveneens hun intrede maken binnen de organisatie, blijft het voor een ieder verschillend hoe een optimaal systeem eruit ziet. De essentie van deze vraag is het achterhalen

van specifieke wensen/voorkeuren van individuen, opdat een vergelijking kan worden gemaakt met hetgeen men verlangt en wat ook daadwerkelijk haalbaar is binnen Exact (eventueel welke compromissen moeten worden gemaakt, trade-offs).

5. Wat is naar uw mening de combinatie van niveau/dimensie waarop momenteel nog informatie tekort komt? Wat voor gevolgen heeft dit voor uw activiteiten, en de organisatie als geheel?

Op dit moment zijn er verscheidene aspecten binnen het bedrijf die zeker nog te verbeteren zijn, aldus de directie. De essentie van deze vraag is het achterhalen welke specifieke punten dit zijn, en of dit eventueel ook daadwerkelijk door een ieder als zijnde een echt "probleem" wordt geacht.

6. Terugkomend op een overgang naar een ideale indeling en werking van het systeem; wat zijn naar uw mening de belangrijkste complicaties die zich eventueel kunnen voordoen en wat zijn uw inziens mogelijke oplossingen?

Er zijn verscheidene dingen die men graag verbeterd wil zien binnen de organisatie. Echter, deze veranderingen zullen hoogstwaarschijnlijk ook andere (ongewenste) effecten teweeg brengen. De essentie van deze vraag is het achterhalen van de individuele gedachten en perspectieven over deze mogelijke gevolgen en hoe deze al dan niet verholpen kunnen worden.

7. Lettend op de complicaties die zich momenteel voordoen binnen de organisatie en het veranderen van het systeem buiten beschouwing latend; wat zijn naar uw mening acties die nu al ondernomen kunnen worden?

Momenteel vinden er al meerdere activiteiten plaats binnen het bedrijf met als doel een hogere mate van Exact utilisatie. Echter, men loopt veelal aan tegen interne weerstand; iedereen wil verbetering, maar vaak is men nog niet volledig bereid om alles te veranderen. De essentie van deze vraag is de bewustwording van personeel; is men hiervan zelf op de hoogte en zo ja, wat zijn eventuele handelingen die een oplossing bieden?

8. Tot slot; hoe positief bent U over alle verbeteringen die men wil bereiken? Is het naar uw inziens daadwerkelijk haalbaar (wat wel/niet) en wat is volgens U het belangrijkste waar men op moet letten om het tot een succes te volbrengen?

Binnen de organisatie zijn er meerdere verbeteringen die men wil aandragen met betrekking tot het gebruik van Exact. De essentie van deze vraag is het achterhalen hoe men individueel hier tegen aankijkt; hoe ziet de realiteit eruit en wat is volgens het personeel het belangrijkste waar men zich op moet richten, niet alleen om de veranderingen door te kunnen voeren, maar ook om op de lange termijn daadwerkelijk de positieve effecten te kunnen ondervinden?

PERSOONS-SPECIFIEKE VRAGEN/AANDACHTSPUNTEN

Naam: Gosse Kaastra

Afdeling: NVT

- * Inkoop van transport: welke kosten spelen een rol (toeslagen), hoe worden dergelijke kosten toegekend tijdens de voorcalculatie en wat gebeurt hiermee tijdens de nacalculatie?
- * Met betrekking tot de korte vragenlijst: uw antwoord op de vraag wat U zelf graag veranderd zou willen zien omtrent Exact was *“Een doorontwikkeling van de werkstromen. Kritisch kijken naar de order invoer en de doorontwikkeling daarvan. Meer gebruik van de rapportage functies binnen exact. Meer een dashboard krijgen van de lopende informatie”*. Hoe vertaalt dit zich naar het besproken framework?

Naam: Ella Rijnsent

Afdeling: Internal Sales Department (manager)

- * Inkoop van goederen: welke kosten spelen een rol, hoe worden dergelijke kosten toegekend tijdens de voorcalculatie en wat gebeurt hiermee tijdens de nacalculatie?
- * Met betrekking tot de korte vragenlijst: als extra opmerking heeft U aangegeven *“Volgens mij is er veel meer uit exact te halen voor onze organisatie dan wij tot nu toe doen. Is te wijten aan gebrek aan kennis over de mogelijkheden.”* Hoe vertaalt dit zich naar het besproken framework?

Naam: Christian de Vos

Afdeling: Financiële Administratie

- * Boekhoudkundige activiteiten: welk onderscheid bestaat er met uw activiteiten vergeleken met de taken van de rest van de organisatie (nadruk op kostenverwerking binnen Exact)?
- * Met betrekking tot de korte vragenlijst: uw antwoord op de vraag wat U zelf graag veranderd zou willen zien omtrent Exact was *“Misschien moet Exact eenvoudiger worden ingericht zodat betreffende overzichten (marges) eenvoudiger te maken zijn”*. Hoe vertaalt dit zich naar het besproken framework?

Naam: Carola Karelse

Afdeling: Binnendienst

- * Inkoop van transport: welke kosten spelen een rol (toeslagen), hoe worden dergelijke kosten toegekend tijdens de voorcalculatie en wat gebeurt hiermee tijdens de nacalculatie?
- * Met betrekking tot de korte vragenlijst: uw antwoord op de vraag wat U zelf graag veranderd zou willen zien omtrent Exact was *“Een doorontwikkeling van de werkstromen. Kritisch kijken naar de order invoer en de doorontwikkeling daarvan. Meer gebruik van de rapportage functies binnen exact. Meer een dashboard krijgen van de lopende informatie”*. Hoe vertaalt dit zich naar het besproken framework?

Naam: Marijke Zilverberg

Afdeling: Internal Sales dept.

- * Inkoop van transport: welke kosten spelen een rol (toeslagen), hoe worden dergelijke kosten toegekend tijdens de voorcalculatie en wat gebeurt hiermee tijdens de nacalculatie?
- * Met betrekking tot de korte vragenlijst: uw antwoord op de vraag wat U zelf graag veranderd

zou willen zien omtrent Exact was *“Een doorontwikkeling van de werkstromen. Kritisch kijken naar de order invoer en de doorontwikkeling daarvan. Meer gebruik van de rapportage functies binnen exact. Meer een dashboard krijgen van de lopende informatie”*. Hoe vertaalt dit zich naar het besproken framework?

EXTRA OPMERKINGEN

Heeft U eventuele extra op- of aanmerkingen die buiten deze vragenlijst vallen? Geeft U deze dan hieronder weer.

We maken op dit moment slechts gebruik van een tipje van de ijsberg van Exact. Veel binnen het systeem wordt nu (nog) niet gebruikt. Door gebrek aan kennis van de medewerker blijven er veel mogelijkheden nu onbenut. Ook is het jammer dat het verkrijgen van betrouwbare overzichten niet direct mogelijk is uit Exact.

RESULTS

This section shows the results that have been gathered from the interviews. During the individual sessions with the employees, the questions formulated beforehand have either been asked literally or used as guidelines. Furthermore, notes were taken to capture the essence of each response given. Data have been categorized based on personnel, displayed not on a question-answer format, but instead only representing the key annotations to each interview.

GOSSE KAASTRA

Framework + Transport

Regarding transport; there are 3 main movements. First, there is transportation over roads. Next, sea is another possibility and finally, deep sea is the last category. While the first two possibilities have costs independent of quantity (price agreements, duration lasting a year or three months, respectively), transportation costs for deep sea rely solely on the amount that needs to be shipped (i.e. per container). Because of this, in case of the latter, small mutations may occur. In essence, transport is purchased using a pre-determined budget (say, \$500,- max. for a specific project). Gosse then looks over the different possibilities, eventually settling for the lowest price that is within budget. However, with deep sea transport, due to the costs always changing and not being fixed like a shipment via the other two methods, it is possible that at the time of purchase (and consequently, the moment costs are directed to the customer) and the payment date (i.e. the actual shipping to the customer), prices have altered yet again. These mutations affect the organization on a transaction basis; the costs of a project have changed, resulting in either a slightly higher or lower profit margin at this level. In practice, although these costs are initially recognized as direct costs in the pre-calculation, they tend to wind up as indirect during the post-calculation, along with invoices paid for legal documentation, certificates, courier expenses etc. Even though these differences exist, they are but a very small amount of the total transaction (xx's vs. xxx.xxx's) and hence, should not be deemed all that significant.

"As a starting point, transport is a service that we offer. No margin is made".

-G. Kaastra, MeMon BV

In contrast, more important are the costs that occur when a shipment is (partially) delayed; it is not uncommon for one or more containers to be held up at customs. However, when this happens, the respective containers are thoroughly examined, always resulting in added costs due to inspection, processing and possibly even leading to a fine that needs to be paid. In comparison, these costs may end up topping the amount paid to ship the container in the first place, hence definitely being deemed significant. Currently, at the transaction level where all of this takes place, there is undoubtedly room for improvement. At the pre-calculation side, due to the unknown probability of these cost occurring (i.e. whether or not a container will be held up), it may be less of an issue. Regarding post-calculation however, these costs directly affect the profit margin, seeing as they all come at the expense of MeMon. It is here, the indirect costs comprising the transaction level, that more information is required; were extra costs made and if so, what kind, how many and to which project do they relate? All questions to which the answers are currently unavailable and/or unknown.

With respect to all other dimensions and levels within the framework; enough clarity is present. For Gosse's daily activities, everything is recorded using Exact. Hence, he can always trace back costs to their respective projects. Only when "something goes wrong", i.e. the hold-up of containers, is when things start to get messy.

Complications

Regarding the current complications utilizing Exact; established links are being broken. Back in the early days of MeMon, everything was as easy as can be, thus requiring no more than a single Excel spreadsheet to keep it all organized. A product is purchased at a supplier and then sold to a customer, all without it actually having to arrive at MeMon. Nowadays, things are much more complicated, with a multitude of different activities taking place before an order is successfully delivered to a client. Still, some of those simple goods remain, "druivenpulp" being the main example. However, even these products are not as easy as they used to be; whereas "druivenpulp" used to only go to customer X, an entire network of different clients is now tied to the product. In essence, the process remains the same; "druivenpulp" is purchased at a supplier and then delivered to whomever MeMon sold it to, all without the actual product having to pass the organization itself. Due to the multitude of different customers however, a simple Excel spreadsheet no longer sufficed. Instead, a link is made between Exact and Access to maintain an overview of the most important aspect; volume sold to each client (seeing as in essence, there are no other factors that influence profit for this product). However, somewhere along the line of processing within Exact, the connection with Access is lost. Consequently, orders have to be checked individually to look for a link with their respective project via a project number, which is of course very time consuming. From the perspective of these types of products, improvements on order/project levels are strongly needed as well.

Change & Resistance

Overall, Gosse is positive towards choosing Exact Globe when the organization decided to implement an ERP system.

"I think it was definitely the best choice out of all possible candidates. I thought so back then, and I still do now".

-G. Kaastra, MeMon BV

However, the system does seem to be focused a lot on accounting practices ("boekhouding"), which came as somewhat of a surprise. In its current state, people are just not familiar how to make optimal use of Exact. When the new system was introduced, no one received training or education on it. Instead, people were just forced to make the best of it on their own. Now, because of this, there is no distinct method of "how things should be done" within the organization. For successful completion of a project/transaction, an "order procedure list" is available, detailing specific things that need to be finished. However, nowhere is it specified exactly how these requirements need to be fulfilled. Overall, people just do not have enough knowledge of Exact, resulting in them just "doing whatever works for them", as long as the needed outcome is achieved. To illustrate this; Exact is a very graphical system. Step-by-step, the system displays what one needs to complete in order for a project/transaction to be successfully finished. However, regarding this, the end-user has too much power over the system. It is very easy to overrule things, or to modify them just enough so that employee X gets his/her things done, whilst employee Y has to deal with the consequences (which are commonly overlooked).

"I find it strange that things are so complicated. You would expect that the essence of the system is, in a way, to recreate the old times when things were much, much simpler".

-G. Kaastra, MeMon BV

Regarding the consequences that are being overlooked; communication is another aspect that needs to be improved within the organization. Currently, changes in utilizing Exact are already being made, the introduction of "Raamcontracten" being a prime example. Even though people know that it is beneficial and that "things are being improved" with its use, no one knows exactly what is being improved and how it affects them and their colleagues. Personnel need to know the precise changes that are being applied, what differences it may yield for them and overall, they need to see and know the bigger picture. Only through extensive communication can this be achieved, which is also a possible solution to countering the phenomenon of people wanting improvements, but not willing to alter their way of working, simply because the direct effects are not visible; one tends to get stuck in daily routines, doing things like they have always done, whilst not even knowing why they are doing so (usually because they did it once, and then never bothered to stray from it).

ELLA RIJNSENT

Framework

Regarding the framework of profit margins; for Ella, the Contract level and the Article dimension are most important. In light of the former; contracts will be of great help because they display crucial information that is currently lacking. Ella's main activities are comprised of both calculating the prices for products offered to customers and forecasting the volume that will be sold during a specific timeframe (per product per customer). For this, it is essential to know the exact status of running agreements. Let us say that for the year 2013, customer X has agreed to buy 1000 ton product Y from MeMon. With the way things are currently handled, it is unclear as to how much this accord has been settled already.

"Ideally, with a click of a button, we need to know the exact status of running customer agreements; how much has already been sold, how does this relate to previous years etc".

-E. Rijnsent, MeMon BV

As of now, it is not uncommon for Ella to estimate the current status of a specific agreement based purely on her own beliefs and experiences. However, due to the fact that she cannot be involved extensively with every single project, errors are very plausible. Referring back to the example addressed above; if 400 ton of the agreement would still remain un-purchased by the end of the year, it is very unlikely that the respective client will honor the terms. For MeMon, this will have a multitude of negative consequences; resources may have been bought in advance in order to produce the final product (and are now wasted/unnecessary costs), the organization is seemingly losing a client or his/her interest in the product is fading (and more importantly, why?) and of course, profit is being forfeited. If more information were available on a contract level, scenarios such as these may very well be prevented due to a constant up-to-date status of running agreements; by viewing it, appropriate actions can be taken. Also, situations in which the opposite happens may occur; clients who purchase too many products. Usually, this would not be a problem (the more sales, the better). However, in case of scarcity (either resources needed to produce the final product or the latter itself) it is crucial that MeMon knows exactly what it has promised to sell, and whether or not this amount has been surpassed.

“Having but a limited amount of good X available, we try to keep everyone happy by offering customers their own share. Of course, this happiness will soon disappear if we, be it unknowingly, supply client Y with a surplus, whilst diminishing client Z’s purchasing quantity”.

-E. Rijnsent, MeMon BV

Overall, information on the level of contracts is required to be used as guiding elements; which customers need extra attention and what actions should be taken (e.g. the client is not purchasing sufficient amounts as per the agreement and consequently, the company needs to be alerted). Currently, such data are simply not present.

Regarding the article dimension; it is important that data are being input correctly here, seeing as they directly affect further levels within the organization. Right now, it is not as much a complication of needing more information, but rather to what extent is it actually relevant for the company. In essence, it is possible for Ella to make a lot of distinctions on the dimension of articles. However, doing so requires a lot of work; not only initially, but also when all these different articles need updating. Currently, articles are input in Exact specifically tailored to customers; even when customer X and Y receive the same physical product, different articles are created, detailing inequalities in transport, packaging, custom notifications etc., respectively. As of now, the organization is aiming to find the perfect balance between the added work associated with further specifying articles and the benefits they create.

Change & Resistance

Regarding the current state of Exact and its complications; as of now, knowledge is lacking. People have their own tasks and in essence, that is all they do. Because of this, the bigger picture is missing;

“People have no idea of the consequences their actions create”.

-E. Rijnsent, MeMon BV

In reality, everyone has knowledge of only a specific part of Exact; while it is not much, it is just enough for everyone to perform his/her daily activities. How everything is connected beneath the surface however, remains blurry to each individual. Because of this, MeMon is also somewhat afraid to implement new changes; though everything may appear to work just fine, who is to say that it has been actually done correctly? Even though it may not be possible to take every small detail into account and consequently, “one has to start somewhere”, the overview of exactly what people do and more importantly, why they do it, should be clear to everyone within the organization.

Ideal system

Ideally, there should be one distinct way of working within the organization regarding Exact. Basically, a “manual” needs to be present, explicitly stating what one needs to do when facing a specific situation and/or problem. This way, a more ambiguous way of working can be established within the company. Of course, there will always be some external factors that need to be taken into account that may cause some alterations (e.g. an updated version of Exact Globe), but what is important is that the overall foundation needs to be crystal clear. Having this in place, tasks can be distributed more evenly as well (not placing too heavy a burden on one individual, simply because he/she is most acknowledged of what needs to be done). Moreover, having a clear, basic understanding of all activities within the organization, people can serve as each other’s “backups” (e.g. absence in case of sickness, vacation). Finally, distinct levels of authorization within the system need to be present; not everyone should be allowed to manipulate data to which he or she has no involvement with (which is currently the case,

causing potential complications for others, even if done unintentionally). Also, regarding these authorizations; it should be clear that everything needs to be input correctly as well, thus requiring certain methods or persons that perform (periodic) routine checks and/or verifications.

CHRISTIAN de VOS

Framework

Regarding the framework of profit margins; for Christian, the focus lies on importance at the project level. First of all, it should be noted that the indirect costs that are comprised in the transaction level are not always impossible to trace back to their respective project. In essence, with the use of a project number, some form of link is maintained, allowing the origin display of the costs in question. However, this information is not always available; sometimes because things went wrong within the organization, other times it is completely outside of MeMon's power entirely. From Christian's perspective, in light of his daily activities, data at the level of projects should always be within reach;

"I often get asked things like "What did we earn on that shipment of containers?", "How much profit did we make from that particular customer?", "What are the earnings during this month?". These are all questions that can only be answered if I know the exact details (costs) of the respective projects".

-C. de Vos, MeMon BV

Furthermore, if such information is not present, more often than not it results in errors being made, the consequences of which are usually only noticed at later stages of order processing. For Christian's accounting activities, normally, this translates to entries being made on "Prijsverschillen" (price mutations). Of course, this happening is not desirable; if everything were to be simply booked onto this post, it would only create "one big pile of costs", the individual entries' ties to projects long being gone. As a practical example; due to some confusion or any other type of error, an article, order or anything similar can be input incorrectly into Exact. As a result, it may lead to a project generating an X amount of profit, while there are absolutely no costs taken into account. The system may think that everything is fine and that things are just as they should be, but in reality, Christian knows that costs have most definitely been made. Consequently, he ends up manually correcting data that should have been input properly in the first place. Another, less extreme possibility is when costs are made and the system indeed recognizes them, but the amount is incorrect. In this case, even though things still need to be adjusted afterwards, the real problem is the "surprise" of finding out things were not a truthful depiction of the events that have taken place. All in all, situations such as these only lead to extra work that could (and should) have been prevented, as well as increase the risk of more errors (confusion, surprises).

"The system itself should be established correctly (e.g. correct data input). If you find yourself adjusting mistakes afterwards, then it is already too late".

-C. de Vos, MeMon BV

Basically, if one discovers an error within the system, the priority should be correcting it before continuing the order process. In practice, however, this does not happen; instead, people tend to work their way around it. While this may yield the "direct outcome" one is looking for, further along the line, things may get messy, which is one of the primary reasons Christian keeps

adjusting and correcting. In essence, this is all work that could have been prevented if the initial error was fixed before continuing in the first place. Overall, information at the project level is crucial, not only in answering questions such as “How much profit did we make from customer X?”, but also in fixing and preventing errors within the system; errors that, if left untouched, only create an extra workload of having to adjust things afterwards.

Ideal system

Regarding the ideal way of working within the organization and an optimal use of Exact; everybody should have a clear understanding of the system itself and things need to be input correctly. In light of errors remaining untouched and having to make adjustments afterwards; it is not always the case that people simply continue working as if nothing goes wrong. Currently, everyone is doing their best to fix things. However, this “fixing” may solve one problem, whilst creating a new one.

“I think we need to make sure everything is done via Exact. Upon order processing, if we run into an error or complication, that needs to be fixed first before continuing. Seeing as we do not know if fixing the issue will create new problems further along the line, to me, the ideal process is iterative; we do it again and again until we get it right”.

-C. de Vos, MeMon BV

In practice, changing things may not be so easy; people want to make improvements, but due to the fact that things are always too hectic within the organization, it is hard to actually push these alterations.

“MeMon always wants to keep going”.

-C. de Vos, MeMon BV

Regarding the overall knowledge within the company; it is unclear to people as to what is the bigger picture. Personnel are performing their own tasks, whilst barely knowing how their actions will affect their colleagues’ jobs. In short; everyone should have a better understanding of the whole process that takes place when handling a project, not just their own part.

“I think that the ideal system, described by me, should very well be doable; in essence, it can be considered a learning process and if there is one thing MeMon employees want, it is learning new things regarding Exact (granted that it would make things better and/or easier)”.

-C. de Vos, MeMon BV

Finally, the focus on what is important within the company needs to be adjusted; it is not relevant to know exactly where every “euro” ends up or comes from. Instead, a more general view of critical activities should be in place. Translating this into practice; the focus needs to shift from asking questions such as “What were the exact costs of that shipment?” to “Which shipments are currently abnormally costly?” (what are key levels/dimensions where profit margins are dropping, how is the organization as a whole affected by this and what can be done to solve it).

CAROLA KARELSE

Framework

Regarding the framework of profit margins; for Carola, the involvement with actual prices and costs is limited. Basically, she gets handed certain prices (Gosse responsible for transportation part, Ella for the actual product) and then has to deal with further processing. An emphasis on project and/or transaction level should be present, especially in light of scenarios when things either go wrong or at the very least, deviate from the usual. To illustrate this with a practical example; shipping products to clients does not always go as smoothly as planned. Sometimes, delays occur, resulting in extra costs made for putting the driver on hold. Other times, detours are inevitable, resulting in more money being spent on the actual transport than initially calculated. All of these costs are billed by MeMon and while they are not deemed all that significant when compared to the shipment as a whole, it is still important to be able to trace them back to their respective project. The main reason behind this is to answer the question of “Why?”; why do we have to pay for these costs, why were extra costs made in the first place etc.

“I often get asked by Christian (he is the one who pays the invoices) “Where do these costs come from?” or, “Why did you do?”. Although the answers to these question often remain in the back of my head, in the long run, it is pretty hard to keep track of everything”.

-C. Karelse, MeMon BV

Overall, it is definitely necessary to record everything on a project and/or transaction level (i.e. the extra costs made from deviating from the “normal situation”). Currently, although a lot is known by certain employees themselves, not much of it is actually registered within Exact. As a result, things are either forgotten after a while or can be easily confused, the latter causing an inaccurate depiction of events that took place. In practice, roughly 90 percent of all orders processed are “standard” and do not experience any difficulties/deviations. For deep sea shipments, however, this value may strongly vary due to the presence of more external factors and because it is “out of MeMon’s hands”. Finally, the phenomenon of not enough information being present at the project/transaction level is further strengthened by certain activities not being performed at all. A prime example of this would be the creation and processing of a complaints form that is tied to a sales order; what were some of the things that went wrong, what caused trouble etc. Currently, this does not happen (or at least, not to the degree that is required) and instead, it is again mostly done “in the back of one’s head”.

Ideal system & Resistance to change

Regarding the ideal way of working within the organization and an optimal use of Exact; the system should be more prepared for things that are known to happen.

“Between the months of January – May, sales are at their peak. Lots of different goods are being sold, lots of different sales prices specific to this time frame need to be recorded. Ideally, after the high season has passed, Exact should automatically take note of this event, reverting back to normal prices. In reality, however, things do not go as smoothly as one would desire, often resulting in the wrong price being used for a certain product”.

-C. Karelse, MeMon BV

Also, it would be best if Exact was used for processing as much as possible; currently, a lot of activities take place in the back of people’s heads. Regulating this, eventually creating some form of fixed procedure one needs to perform, will not only create more clarity (e.g. why perform this

task, what are the consequences of this action) but also help people act as backups for one another.

"The creation and input of a new article in Exact is only permitted by a select few individuals. Obviously, they cannot always be present (sickness, vacation, day-off). To illustrate it with a practical example; the task of inputting the right sales price of a product within Exact is primarily performed by Ella. If she is not around when a customer has specific questions regarding such a matter and I do not know the answer, I either have to make an estimate to the best of my knowledge or, I have to apologize and tell him/her to call back until I have a definitive answer. Either way, the customer suffers and thus, we, MeMon, suffer".

-C. Karelse, MeMon BV

Furthermore, there just is not enough knowledge present regarding Exact; functions within the system are either used inefficiently ("wrong"), or possibilities are completely overlooked/not utilized altogether. In a way, the small size of the company may have some effect on this as well; although people want to learn and improve the current state of the system, it just takes a lot of time with both the limited personnel and even more limited knowledge that is present.

"I think it would be very beneficial if we really put some effort into accomplishing the things we want. Sure, it may take like $\frac{3}{4}$ of a year, but in my opinion, we would benefit 5 years from it (give or take)".

-C. Karelse, MeMon BV

Regarding change in general; resistance is another important aspect that needs to be taken into account if the organization wants to be successful in improving its current state of operations.

"Within MeMon, I can see a clear distinction between people more acceptable of starting to do things differently, and people who are more prone to resistance".

-C. Karelse, MeMon BV

Currently, Piet, the director, is not a big fan of using Exact. Usually, he tells people what to do, and then they are just on their own (i.e. they need to make it happen). While things do tend to get done eventually, the way it is achieved and the overall involvement of Exact is questionable; a lot of struggling takes place before the needed outcomes are generated. Again, the phenomenon of resistance to change is clearly present here; people want things to change (i.e. no more struggling with Exact), but in a way, they are scared or at the very least, somewhat hesitant to actually stray from their normal routines. A simple illustration in practice; currently, a lot of paperwork is still being processed via hardcopies (e.g. invoices, bills, order confirmations). While in essence, there is nothing wrong with keeping actual paper files of events, it does tend to pile up after a while and eventually, it even becomes counterintuitive; a lot of time is wasted going through all the files just to find one specific piece of paper. Also, in reality, the latter is not even required all that often, thus making the effort of storing and even keeping hardcopy backups somewhat redundant. Still, even if the advantages of "going digital" are very clear to some, others are still resistant to the very idea itself, which, in essence, can all be traced back to just not being comfortable yet to alter their routine way of working. Furthermore, this also affects the organization on a larger scale; year after year, MeMon tends to do business with the same customer base (i.e. the same "big clients"). Although there is nothing wrong with maintaining a good and strong relationship with your clients (and thus ensuring

their interest in years to come), MeMon also strives for more growth. However, this cannot be achieved if the company always “plays it safe”. In a way, even at the larger scale, the company is somewhat stuck in routines and sticking to what they are familiar and comfortable with. Of course, it is not to say that MeMon never gets new customers, but even they are often the result of them approaching the organization, while it should be the other way around.

“I would love to see the company attract new clients, either by approaching them directly, or perhaps even by presenting our products at fairs and the like”.

-C. Karelse, MeMon BV

Overall, even though a lot of improvements are desired within the organization, it seems as though the phenomenon of resistance to change may play a greater role than expected. Whatever the case, it is most definitely something that needs to be addressed before actual big alterations can be made.

MARIJKE ZILVERBERG

Framework

Regarding the framework of profit margins; for Marijke, the involvement with actual prices and costs is limited. Her daily activities can be described as being more of a management type; having to deal with information (prices) that are being handed to her. Consequently, there is no big focus on the levels within the framework, although projects/transactions may play some part. Again, the main drive behind this has to do with the indirect costs that, at the pre-calculation, are directly attributed to projects while at the post-calculation, they tend to wind up at one big pile. Even though the latter does not necessarily happen always, still, a “Letter of Credit” (LC) is a good example of costs that tend to disappear (i.e. it can no longer be traced back exactly to the project of origin). While the project/transaction level can be considered to be of some importance, in comparison, more emphasis should be put on the dimension of articles. Regarding extra costs that are made when things go wrong; currently, ties to the project of origin are usually lost. However, this does not need to happen, especially if one were to already account for the possibility of it happening in the first place.

“I think it would be a good idea to create and input new articles in Exact that embody the extra costs possible when things go wrong; costs per day of a container being stuck at customs, putting the driver on hold due to delays, the price of a detour are all possibilities of added expenses when things do not go as we had planned. Right now, these costs are simply paid. More often than not, ties to the original project or the whole reason behind having to deal with them often disappear. Taking this into account and having such articles already present in Exact, we could simply “buy them” when needed in order to ensure a link to the project is both created and maintained”.

-M. Zilverberg, MeMon BV

Overall, improving the dimension of articles could be a solution to scenarios when things deviate from the standard; although it would not aid in actually preventing the latter, it would most definitely serve as a helpful tool in dealing with the consequences, both on a short- and long term.

Current complications + Resistance to change

Regarding the current complications of utilizing Exact; there is no clear way of how to do things right. Also, the system itself simply is not organized properly; data are either missing or incorrect, leaving personnel with extra work by either having them find a workaround or adjusting previous entries, respectively (in some cases, due to crucial information such as prices missing, they cannot continue further processing at all).

"I think we can get a lot more done with Exact than we are currently doing".

-M. Zilverberg, MeMon BV

Also, another issue is the overall lack of trust in Exact; usually, people can utilize the system to obtain the results they need. However, it is not uncommon for different people to work with different methods within the ERP. As a result, one might get a different outcome, depending on who was responsible for obtaining the information in the first place. To illustrate a scenario such as this one with a practical example; it may be the case that Marijke needs to figure out how many of resource X has been purchased in the time frame of the past three months. Using Exact as a tool, she will be able to get the answer she is looking for. However, with the multitude of possible options within the system and not knowing which one is relevant, it may very well be plausible that the result she derives differs from the one, say, Simone, obtains due to her using an alternative working method.

"Using Exact, I am able to get the specific outcome I am looking for. However, when asked if someone else could do it, his/her result may differ from that of mine. Who is to say which one is right?"

-M. Zilverberg, MeMon BV

In essence, it is simply unknown what to do in situations such as these. Now, in the case of actually wanting to know how much of resource X has been purchased during a specific timeframe, there is the possibility of simply checking it with the supplier of the good. However, clearly, MeMon should not always have to rely on external actors and instead, if the company wants to know the answer to these questions, it should be able to obtain them via internal means. Other current complications are more esthetically related, e.g. slowness of the overall system, bugs that are present. Regarding the resistance to change; the bigger picture is missing, causing people to remain somewhat skeptical, rather than experiencing full acceptance of altering their way of work. On a larger scale; MeMon itself is excited to change (in the form of more growth). However, in practice, the organization remains somewhat "narrow" and hence, causing nothing short of a paradox, eventually resulting in the aforementioned resistance under their employees.

Ideal system

Regarding the ideal way of working within the organization and an optimal use of Exact; more activities should be performed via fixed and predetermined procedures. This way, even if people are not fully knowledgeable regarding a specific situation, they can simply "look up" on how to deal with it properly. Doing so will result in more information actually being recorded in Exact and more importantly, in a proper manner, whereas now, people just "do whatever they think is best" (which, unfortunately, is not always the best).

"I think we need to create more trust regarding Exact's use. Having procedures in place and knowing what to do in specific situations will definitely help in recording data properly in the system. In the long run, this will create efficiency (e.g. time savings)".

-M. Zilverberg, MeMon BV

Right now, due to the messy layout of information within Exact, it is often the case that output is used to check whether or not input has been correct (e.g. viewing a particular stock of goods from which one already has a good indication of what amount it should be and based on the actual number displayed by the system, one can determine if data input to derive this information has been correct). Of course, ideally, it should work the other way around; proper data entries should result in the right information one wants to obtain. Also, in general, Exact needs to be utilized to a higher extent (granted that proper knowledge is in place). Currently, the use of alternative applications is more than just a little present. Now, the primary reason for this is again because personnel do not know how to do the same, but using Exact instead. Ideally, a uniform method of working is in place, utilizing the ERP system as its main tool and other applications only if there is absolutely no (efficient) workaround. Doing so will ensure everyone having access to the information they need, whereas currently, because of the many, different applications in place, data tend to get "lost".

REMBERT van NOORT

Framework

Regarding the framework of profit margins; for Rembert, the emphasis lies on the contract- and order level, although it is not uncommon for a proper connection between the two being necessary (i.e. which orders are tied to which contract). As of now, in conjunction with Ella, contracts are already being introduced and implemented within the organization's system. Still, there are a lot of things that need further improvement, even regarding the latter. Currently, Exact is not reacting to the changes as was initially expected. To illustrate this with a practical example; as of now, there are instances when a contract is not available for selection, even though it should be. To satisfy customer demand (i.e. a sales order), a production order is created. Often, the latter requires the purchase of resources via a purchase order. With contracts in place, changes are made not only regarding sales, but purchases as well; both should now have the option to perform the respective activities via an agreement specifying price, buyer/supplier identification, total- and remaining quantity and the overall time span the aforementioned applies to. However, as of now, it just does not work as intended. Regarding the purchase order contracts; there is the possibility of the contract not showing up at all. Now, what this means is that when the resources are purchased outside of the agreement, the remaining contract quantity agreed upon does not decrease. Obviously, this is counterproductive and may even result in higher costs, as contracts could have been formed specifying a discounted price. In other instances, it may be the case that multiple contracts are available for selection when making resource purchases; if a scenario such as this were to take place, it is crucial that whoever is taking care of it, chooses the right contract. Currently though, it is hard to know exactly which is the right choice to make. Other complications related to purchase contracts are the incorrect processing of prices (i.e. contracts and/or prices getting mixed up by the system itself). Overall, much change is needed if one wants the implementation of contracts within Exact to be actually successful and of use to the organization; benefits can be achieved in the form of reduced errors (e.g. no more choosing the wrong contract) and in short, the tasks of the employees need to be facilitated. Ideally, the administrative activities of contracts need to be 1:1 regarding sales and purchase. Now, in practice, this would translate to the following; if for customer X a sales contract were to be in place that is tied to a specific purchase contract, ideally, these would be similar in most aspects. For example; customer X purchases 100 ton of

product Y and this sale is recorded via a sales contract. Now, in order to produce Y, resources need to be purchased of the same amount and let us assume that this is done via a purchase contract. In the example mentioned above, this would mean that this purchase contract also lists the purchase of 100 ton resources. Ideally, whenever an amount of product Y is delivered to the customer, both the sales- and purchase contracts need to be updated accordingly on a 1:1 basis, hence ensuring that enough resources are available at all times in order to satisfy another part of the sale. Overall, more information and improvements are required on the contract level in order to achieve all of this. Also, the dimension of articles is taken into account as well. Currently, distinct agreements are made within the organization as to how these entities are implemented within Exact; articles are specifically tailored to customers, not suppliers (i.e. the product that is supplied to customer X is article 1 and the one supplied to customer Y is article 2, even if it is the same physical good. The same does not hold for suppliers). However, with changes on a contract level being imminent, articles themselves may need to be adjusted as well.

Current complications + Resistance to change

Regarding the current complications of utilizing Exact; the costs that are direct at the pre-calculation, but indirect at the post-calculation remain somewhat vague or at least, in light of how they should be processed within the system itself. Extra costs related to transport, for instance, although not completely “hidden” from Exact, still remain hard to properly enter into the ERP. A practical example of this would be whether or not sales prices include these premiums; some of them do, while others do not. This distinction remains somewhat unclear and currently, workarounds such as an extra note added to the respective product are being used. However, with no real solution in place, confusion and/or mistakes are imminent. Also, other costs that fall into the category mentioned above include costs of requiring documents, certificates, stamps etc. While these may not be of a significant size individually, especially when compared to a total project, shipment and the like, still, all of them put together may require some extra attention; a thing that currently, does not happen to the right extent. A simple solution to this may be to estimate and account for a fixed amount of costs in order to cover these occurrences. Furthermore, more and more customers request analyses that be performed before products are shipped, whether it be for quality checks or other purposes.

“As of now, we see a trend in more and more people asking us to perform analyses on products before we ship them out. Even though we already performed such tasks for internal purposes (e.g. quality control), it is not comparable to the extent we are facing now. With analyses already being pretty expensive and with products themselves becoming more and more complex, I think these costs are another good example of things that need to be processed (or at least taken into account) within Exact”.

-R. van Noort, MeMon BV

Regarding the overall resistance to change; fixed procedures need to be in place. Currently, there is just too much confusion and/or obscurity surrounding Exact; people do not know the consequences of their actions, why things need to be done a certain way, what changes are planned etc. If one, clear way of working were to exist, not only would it create a more reliable database within Exact (i.e. people do not input information incorrectly anymore), but it would also counter the errors that are now made due to miscommunication (i.e. to different methods of working). Of course, such changes should be considered an iterative process; MeMon needs to continue improving and more importantly, checks need to be in place in order to ensure that whatever has been agreed upon internally, actually gets done.

"I think that Orbis, a tool in the form of a task manager, may prove very helpful in our organization. Using such an application may facilitate the checks that need to be executed. As a simple example; it may display a simple list of things that need to be performed before a specific task can be considered completed".

-R. van Noort, MeMon BV

Ideal system

Regarding the ideal way of working within the organization and an optimal use of Exact; the contract aspect has already been discussed in the framework section. Further optimization come in the form of a better connection between sales order and purchase order (which is in fact also a part of contracts). As of now, data are often lacking in crucial parts, often resulting in connections such as these being lost. Currently, in order to fill these gaps of information, too much adjustments need to be made, eventually resulting in performance results (reports) to be very obscure or non-feasible altogether. Ideally, the links between crucial parts of order processing remain intact, hence having no gaps to fill in the first place. Also, the system should be able to alert when obvious things go wrong or are out of the ordinary.

"It would be great if Exact could highlight projects that have a negative result (i.e. the ones where more costs are made compared to the profit it generates)".

-R. van Noort, MeMon BV

Finally, from the old days, within MeMon, things are not finalized until the customer actually places an order. Whenever a client wants to do business with the company, more often than not, a lot of different products are being offered. However, of all of these, only a few are actually bought by the respective customer. As of now, even when it has been agreed upon what products will be bought, the price, quantity, time span of purchases made etc., nothing is actually considered "complete" or "final" until the client actually makes his/her first purchase. Now, because it is not uncommon for months to pass between the latter actually happens, it sometimes occurs that things are simply forgotten (i.e. what exact agreements have been made). In such instances, if there is really no other solution, people have to re-contact the customer in order to sort things out, which of course comes off as very unprofessional. Also, due to the finalization being so "late" in the overall processing, things such as order confirmations are also sent somewhat overdue to the customer. Overall, there are distinct advantages to be achieved when this moment of finalization gets moved to an earlier stage: the moment a customer accepts the offer and agreements have been made. This way, no things can be forgotten (everything is already documented and processed within the system) and there are no more needless delays whenever the client actually decides to start buying. However, there are also very clear benefits tied to the way things are being handled right now. Due to the possibility of a customer waiting a long, indefinite amount of time before actually making a purchase, a lot of things may have already changed; maybe he or she wants to alter quantities, add new products or remove old ones. All of these things require extra work if things were indeed already "set in stone" whereas currently, there is a lot of flexibility.

"I can see the benefits that are tied to using either moment of finalization. It is because of this that we should really discuss what we want to focus on as a organization; do we want to keep the level of flexibility that we have now, or do we put more emphasis on clarity and speed?"

-R. van Noort, MeMon BV

In essence, the aforementioned situation is a clear example that an ideal system should not only focus on one perspective but instead, take distinct pros and cons of different views into account.

JAN HAANDRIKMAN

Framework

Regarding the framework of profit margins; for Jan, the combination of customer/product and period is most important. In essence, things at the order level of the organization need to be flawless in order to truly understand what happens with each client, the sales made to them and the associated profits/costs. Overall, it is perhaps desirable to not view everything on an individual transaction basis but instead, steer towards a more “project level perspective”, seeing as the former may require a lot of work and the gained results may not be worth it.

“Going into too much detail may require a lot of work and I doubt it would be worth all the extra trouble. Honestly however, I simply do not know whether or not much needs to be done in order to view all these in depth data; we just have to figure out what we want and how much effort we can afford to put into it”.

-J. Haandrikman, MeMon BV

Currently, a lot of questions remain regarding the pre-calculation phase; which costs should be taken into account (fixed/variable), what is possible within the limitations of the system itself, what is important for the organization etc. In order to truly answer these, a better emphasis should be put on the level of orders and/or projects.

Current complications + Resistance to change

Regarding the current complications of utilizing Exact; there are simply too many things that need to be adjusted manually. Because very little is actually input and recorded correctly into the system, even the easiest of tasks require an unnecessary amount of extra work. Also, it causes distortion between employees; no one knows exactly what is going on, what needs to be done, what has been finished already etc. In essence, people need to fully comprehend and make use of the system that is present, even if certain things are not ideally tailored to MeMon itself (i.e. to some extent, personnel need to “adapt” themselves to Exact). Furthermore, performance reports are of high importance to MeMon. With complications such as the aforementioned being present during the initial stages of order processing, it will undoubtedly affect these reports on a negative basis as well.

“Although we are currently not utilizing performance reports to a high extent, it is certainly something we want to achieve in the near future. With the click of a button, we need to know the current status of critical details such as sales, profit, client database etc. In order to make this a reality, it is important that all the activities that lead up to these reports (i.e. the input) are performed correctly”.

-J. Haandrikman, MeMon BV

Regarding the overall resistance to change within the organization; more clarity needs to be present within the company.

"I think that as long as people see the actual use/benefits of change, they will be willing to do so. People need clarity, they require guidance. Unfortunately, even though we are already working on it, it is exactly these things that are still lacking within the organization".

-J. Haandrikman, MeMon BV

Ideal system

Regarding the ideal way of working within the organization and an optimal use of Exact; a lot more focus should be put on the activities that take place during order processing and how it affects tasks later on, the performance reports being the most crucial outcome. In an ideal system, everything is "oversimplified". Employees should not be faced with options or functionality that are not relevant to them; it would needlessly make things more complex. Seeing as people are currently already overwhelmed by the many capabilities of Exact (and consequently, do not always know what to do or what is even possible), it would be very helpful if options were stripped down to the bare minimum of what is needed. Also, some form of standardization needs to be in place. In order to achieve this, MeMon needs to be clear in what it wants to achieve, how it is planning to do so and finally, when all of this is known, it all needs to be automated, hence preventing errors made during tasks that should in fact be very "basic" to perform. As of now, however, because of missing procedures and a lack of overall clarity, even the simplest of tasks can go wrong. Of course, mistakes can always be made, even if the system were perfectly designed. To account for this, some form of problem solving needs to be in place. Of course, where possible, this needs to be standardized as much as possible as well.

"I think it is important that everyone is accustomed to and knowledgeable about the basic tasks within the organization. Then, if a scenario were to occur where things go wrong, people need to make sure it is being dealt by whomever is appointed as "problem-solver". To me, I think the latter (i.e. the appointment of a fixed person that always acts as a problem-solver) is especially helpful in ensuring that things go according to one, strict method of working whereas currently, especially when dealing with unknown situations, people tend to improvise a lot. While it may solve the problem on the short term, in the long run, more complications may have been created, especially when you factor in the fact that everyone has their own preference of problem solving, eventually causing a lot of confusion along the way as well".

-J. Haandrikman, MeMon BV

Also, to counter the problem of lacking knowledge regarding the use of Exact itself; training may be a good solution, although there are some distinct disadvantages tied to it as well.

"Training is pretty expensive. Although I do think it may be helpful, I am confident that we first need to know exactly what it is we want to know or learn, before we start participating in education. Otherwise, it would only be counterproductive; money would be wasted and even worse, the result could be more knowledge regarding things we do not even use or apply in our organization".

-J. Haandrikman, MeMon BV

Overall, with people gaining more knowledge about the bigger picture and how the essential tasks within the organization are (or should be) performed, the result will be a lesser reliance on colleagues to obtain information. Consequently, a better and faster workflow is created, no longer experiencing hold-ups or delays due to "waiting for others". Finally, a better interaction with Synergy may be of some use, especially when considering the performance reports MeMon

wants to achieve. In essence, it is an application that is rendered in a web-based environment, it already has a strong integration with Exact and it is focused on workflows, which is actually ideal for recording procedures (e.g. events that took place, things that went wrong). Of course, in turn, the latter is required to generate complete and faithful reports detailing the organization's performance.

"A lot of the things we are doing or implementing right now also take the future generation of performance reports into account. Even though much remains to be done, I think that we are already off to a good start. As long as we make sure that everything is recorded and input correctly into Exact, whatever output we desire should be feasible".

-J. Haandrikman, MeMon BV

SIMONE DEKKER

Framework

Regarding the framework of profit margins; for Simone, more information at the project/transaction level is required in order to properly calculate sales prices of products. In essence, the entire process of getting in touch with a customer, creating the offer and finally, sending it out to the client, should all be automated. At the very least, the aforementioned activities should be structured in such a way that there is absolutely no confusion as to how each of them should be performed. Currently, however, this is not the case, especially when viewing the major differences that set the project- and transaction level apart; the costs that are processed directly at first (project level), but end up in the indirect category afterwards (transaction level).

"It would be great if we had proper post-calculation in place. Right now though, due to certain costs not being taken into account correctly and/or recorded into Exact, this is not yet possible. I think that by structuring projects/transactions in a rightful manner, it will allow us to gain insight in things such as profit margin per customer/per period/per shipment etc. Consequently, having these data will allow us to make important management decisions; knowing which products or clients, for instance, yield relatively high/low margins against a low/high amount of work will help us focus on those that are most beneficial to MeMon".

-S. Dekker, MeMon BV

To illustrate these costs that are not yet being processed properly with examples from practice; expenses for both a Letter of Credit (LC) and deep sea transport are estimated, rather than taken into account precisely. Now, regarding the former, this is done via utilizing averages and/or historical figures. For deep sea transport, not knowing the precise costs is related to the fact that payments are made in dollars, rather than Euros. Because of this, due to fluctuations that can occur between the moment of transport purchase (i.e. when taking the expenses into account and calculating the total price for the customer) and the actual time of payment (i.e. when the goods are shipped to the client), Simone uses an estimated currency. Of course, the actual rate may differ (usually slightly, but huge differences are theoretically possible), hence causing differences in pre- and post-calculations that may already have an impact on managerial decisions. Overall, not having such expenses processed correctly into the system may result in scenarios where the reality differs tremendously from one's expectations at the pre-calculation phase. As might already be the case, this will lead to an incorrect focus on customers, specific products and the like, thinking that they yield high margins of profit while in reality, they are simply not worth the effort.

Current complications + Resistance to change

Regarding the current complications of utilizing Exact; there are simply too many things left unknown within the organization. As has been addressed already under the section of framework, these problems are mostly related to unsupported/unjustified decision making; with so many customers to provide goods to and without a proper processing of project/transaction costs, it often because hazy as to what has been done, why, and what still needs to happen. Also, with no real fixed procedures in place, it becomes very hard to substitute tasks of one another. Still, at times, this is inevitable, resulting in only more things being processed “wrongfully” and thus only adding to the overall confusion.

“With none of the activities being fixed, replacing colleagues or taking over their tasks becomes an almost impossible duty. If some form of procedures were to be in place, not only would it facilitate the latter but also, it would act as a form of guidance for the employees themselves; knowing what to do in which situation”.

-S. Dekker, MeMon BV

Regarding the overall resistance to change; people need to be well-informed as to what happens, how they are affected by it and the general consequences for the company as a whole.

“I think it is very important to really get the people involved whenever change takes place. Also, honesty is crucial. With so many alterations being made, undoubtedly, some individuals end up with having to perform a few more extra tasks. Personally, I know that with some of the changes that are being made (or are even already being implemented), I get a lot more on my plate as well. However, I know that with the extra effort that I have to put in initially, later on, it will result in a lot more time saved. I think that this will apply to everyone; we just have to make sure that everyone actually knows and understands this (i.e. what are the benefits gained), rather than only looking at it from a perspective of having to do more work.”

-S. Dekker, MeMon BV

Ideal system

Regarding the ideal way of working within the organization and an optimal use of Exact; everything should be recorded via one method at one place. Also, one distinct method of working should be in place, thus eliminating the phenomenon of people no longer knowing what to do and minimizing confusion regarding order processing. Furthermore, with fixed procedures in place, no longer are crucial tasks such as the input/creation of a new article within Exact the responsibility of a sole person but instead, everyone can do it. Next, an ideal system would be one that is focused on management and/or performance reports; using a very simplistic user interface (e.g. clickable options to determine outcomes such as client, period), data should be obtained that allow for guidance of activities. Also, managerial overviews should be present, detailing information such as the current status of specific activities and the like.

“Currently, there are still a lot of things that need to be done. While the inclusion of functionality that allows for the generation of managerial reports would be great, I think we need to focus first on creating a good post-calculation process. As of now, the latter is completely absent, although an overview regarding sales volume is already included in the system. Still, even this is far from perfect or completed (I would estimate it at around 30%) and in general, it could all be a bit more easy and accessible.”

-S. Dekker, MeMon BV

PIET SCHIMMEL

Ideal system, current complications and wishes

Regarding the crucial information that should be available; for Piet, the owner of the company, things need to be kept simple. In essence, from a customer point of view, it is necessary to know exactly what they have done this year compared to previous ones, volume wise. Going into a little more detail, it is then useful to know what products have been sold. Now, it is possible to look even further and analyze the materials used for packaging the aforementioned. However, there is not much relevance gained by doing so, as no profit is made on this part.

“Basically, I want to distinguish quantities; how much has the client bought this year compared to last year? After knowing this, it is useful to view the exact products that make up for this amount, e.g. 30 percent consists of product X and the remaining part is product Y. Although it should be possible to look at some more details like packaging, for me, these two components are the driving factors for successfully performing my business processes”.

-P. Schimmel, MeMon BV

Current complications of the system are actually related to having too much details. Regarding the quantities that have been purchased by a specific customer; Exact shows the different products, but the amount is further specified by packaging (e.g. product X in big bags, 25 kg bags). Now, this results in a lot of manual labor in order to derive what one wants to know; if a client has but a short overview, this should be doable, but there are instances where an extensive list is in place and consequently, time is needlessly wasted just by having to figure out the precise amount of products purchased.

“Right now, it is not uncommon for me to either waste time figuring things out myself or asking others to do it for me. In essence, I just want to know the total amount per product that has been sold to a customer during a specific timeframe (e.g. seasonal, yearly) and while this information can in fact be derived from the system, it is just a hassle to get it all out (i.e. manually having to add product X in big bags, product X in 25 kg bags etc., just to know the total quantity of product X sold). This is absolutely ridiculous, seeing as the point of having an ERP in the first place is to make things easier, not having it counter the things I want to do or see”.

-P. Schimmel, MeMon BV

If all of the data regarding quantities per product for a specific client are known, further information can be derived; what are the profits made, what are the costs incurred etc., although these aspects are of course currently being improved as well.

All of the above applies by viewing things from a customer perspective; a process consisting of purchasing resources, performing a production order on them to create the requested product and finally, delivery to the client. Of course, the same should be applicable when taking the point of view from producers/suppliers, the only difference now being that MeMon purchases resources at a certain location and having that delivered straight to the customer, without any process or “transformation” in between. In essence, for these cases, one too wants to know what product has been sold, in what quantity and more importantly, where it ends up. Eventually, by having these data available, one can derive the earnings made, expenses occurred and so on.

Regarding current complications; it should be clear that the majority is related to the system simply presenting things in a format which is needlessly complex, rather than keeping things plain and simple. Consequently, it makes it all the harder to eventually derive the (true) margins on products sold, earnings per client and the like. Now, another issue is related to the scenario of

viewing things from the aforementioned producer/supplier perspective; due to the complex network that is in place (i.e. one supplier can deliver to multiple clients, a client can be supplied by multiple suppliers or any combination of the two), it is hard to keep track of the exact events that took place (e.g. what products end up where). Again, the system that is in place should ensure that it solves such issues, but the reality suggest otherwise; the needed information is simply not obtainable, or one has to put in a lot of effort to force it out. In practice, purchases made by MeMon's clients are often used in order to backwards-derive the production/output of a specific location. Of course, this should not be required; one should be able to view the output of a production site directly and where these goods eventually end up (and hence, a true perspective from producers is taken into account). Furthermore, as of now, the general status of running agreements remains somewhat vague. Of course, with the current efforts of implementing contract administration, an attempt is already made to counter this. Basically, it is necessary to know the history that is tied to a specific customer; elements such as necessary resources purchased, transportation and finally, the sale that is made to conclude the process, all have aspects associated with them (e.g. expenses, quantity).

"Back in the early days of the company, both the current status of a client and his/her historical data were readily available. Basically, everything was much simpler then, thus also requiring a system that was a lot easier to deal with. Nowadays, the different elements of a customer's history (purchase, transport, sale) are all strangely connected to all sorts of things within Exact, eventually leaving us with more questions than answers when trying to view the client's status. There have even been instances where we had to contact a customer personally in order to deduce the quantity that he/she has bought so far and thus, being able to determine the amount that was still left for him/her to buy. Of course, having to resort to such "solutions" is simply unacceptable".

-P. Schimmel, MeMon BV

Finally, regarding the implementation of the existing ERP system; when Exact was introduced, the efforts required to properly set it up within the organization were very underestimated. In essence, choices made were based on what the system could provide, not if that output or its capabilities were applicable to MeMon in the first place.

"When we chose to implement Exact, we made the mistake of focusing too much on what was possible with it, not on what we, as an organization, truly wanted or needed. I think this is the problem with most software; it is always designed based on a fixed image of what the maker thinks works best or is important, thus not taking into account what is actually relevant for companies. Of course, we ourselves should have known this beforehand and we should have used this knowledge to choose a fitting system accordingly, which, unfortunately, is not what really happened. Consequently, during the first year Exact was implemented, a lot of friction developed; things were too complicated and people just did not have an idea of what was going on or what the meaning was of output generated by the system. Also, a lot of good things that were in place when utilizing our old system were now gone (e.g. the simplistic overview of purchase, transport, sale). Nowadays, everything has improved a lot and yet, more is continuously being done to further find a proper balance between the ERP system and the way MeMon works, although we still have a long way ahead of us before everything is perfect".

-P. Schimmel, MeMon BV

Graphical depiction per stage (order processing)



Format

The graphical analysis of each stage follows a distinct format, consisting of:

- Valuation of costs
- Accounts
- Exact Database
- Complications
- Extra activities (exceptions)

Order processing

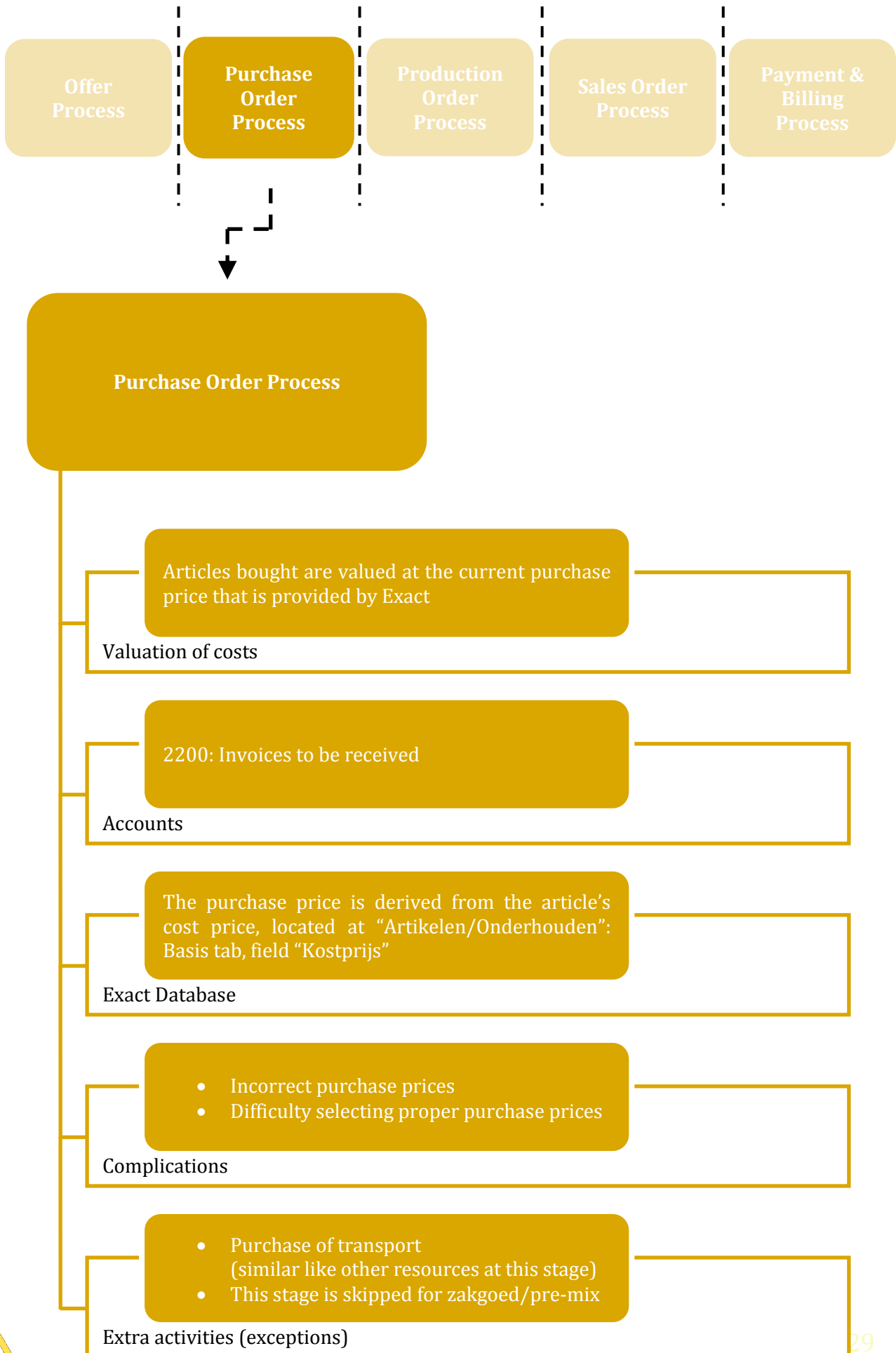
When a new order is received, different processes are completed in sequence upon the former can be finalized:

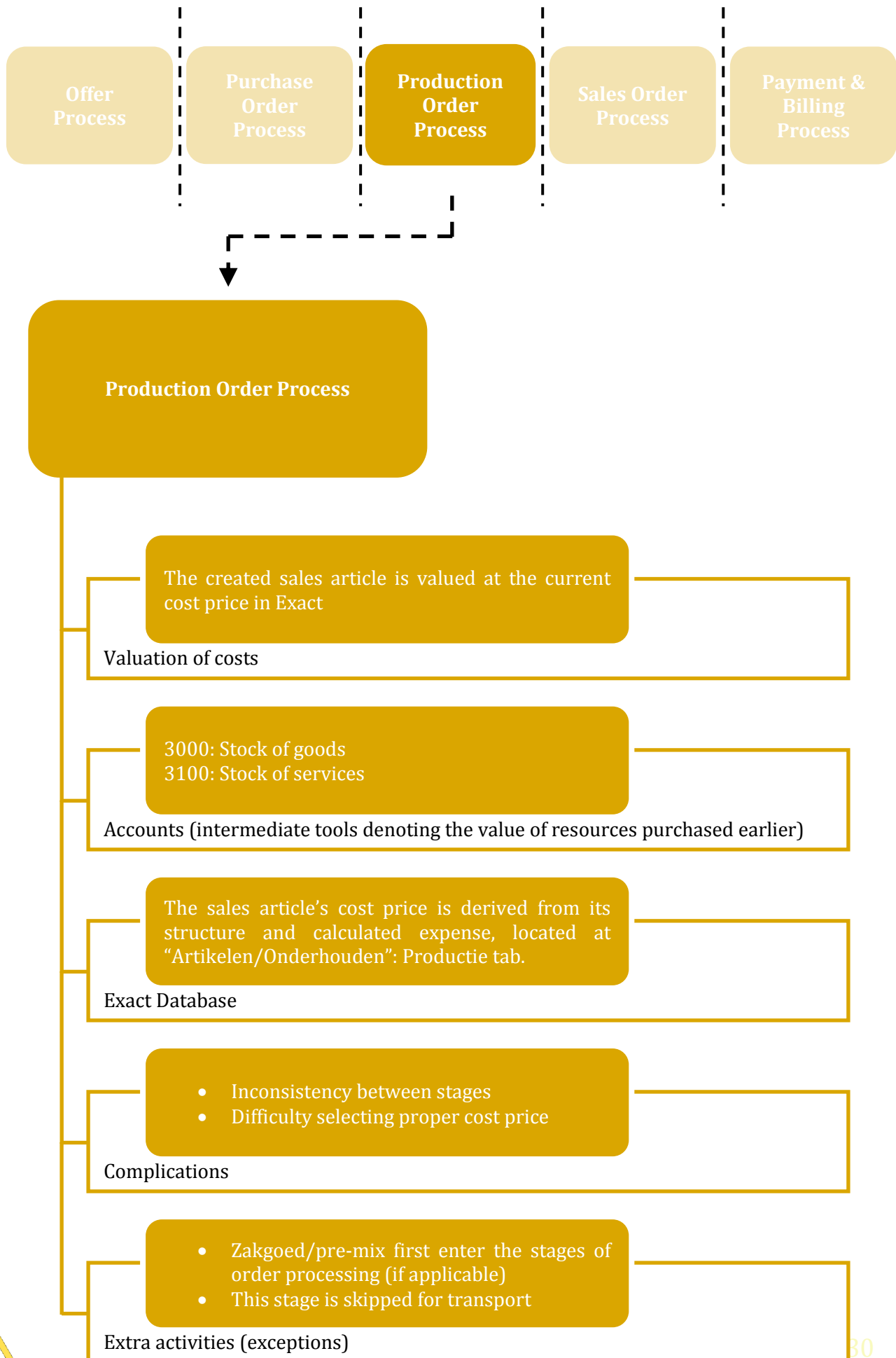
- (1) Offer Process
- (2) Purchase Order Process
- (3) Production Order Process
- (4) Sales Order Process
- (5) Payment & Billing Process

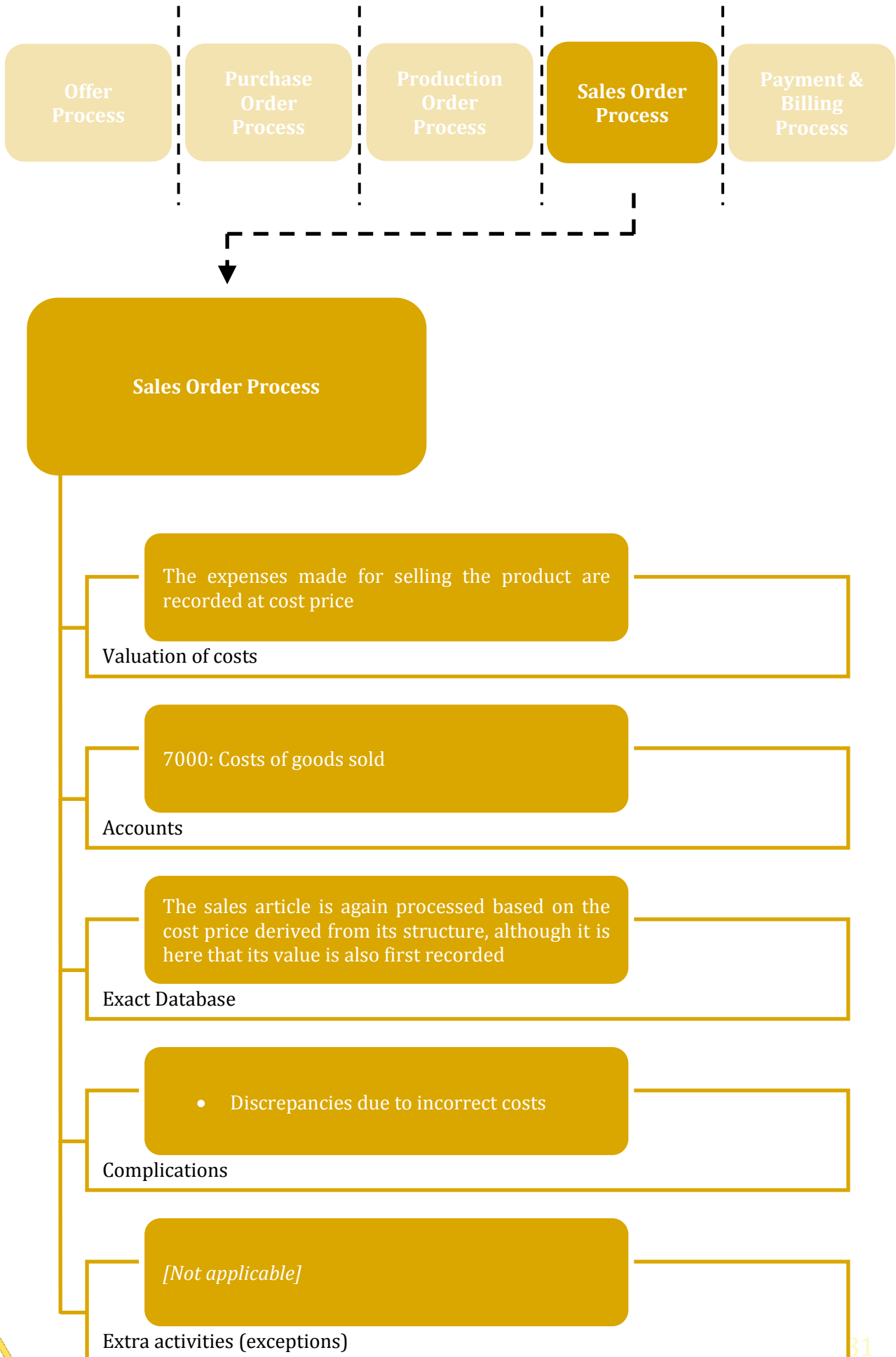
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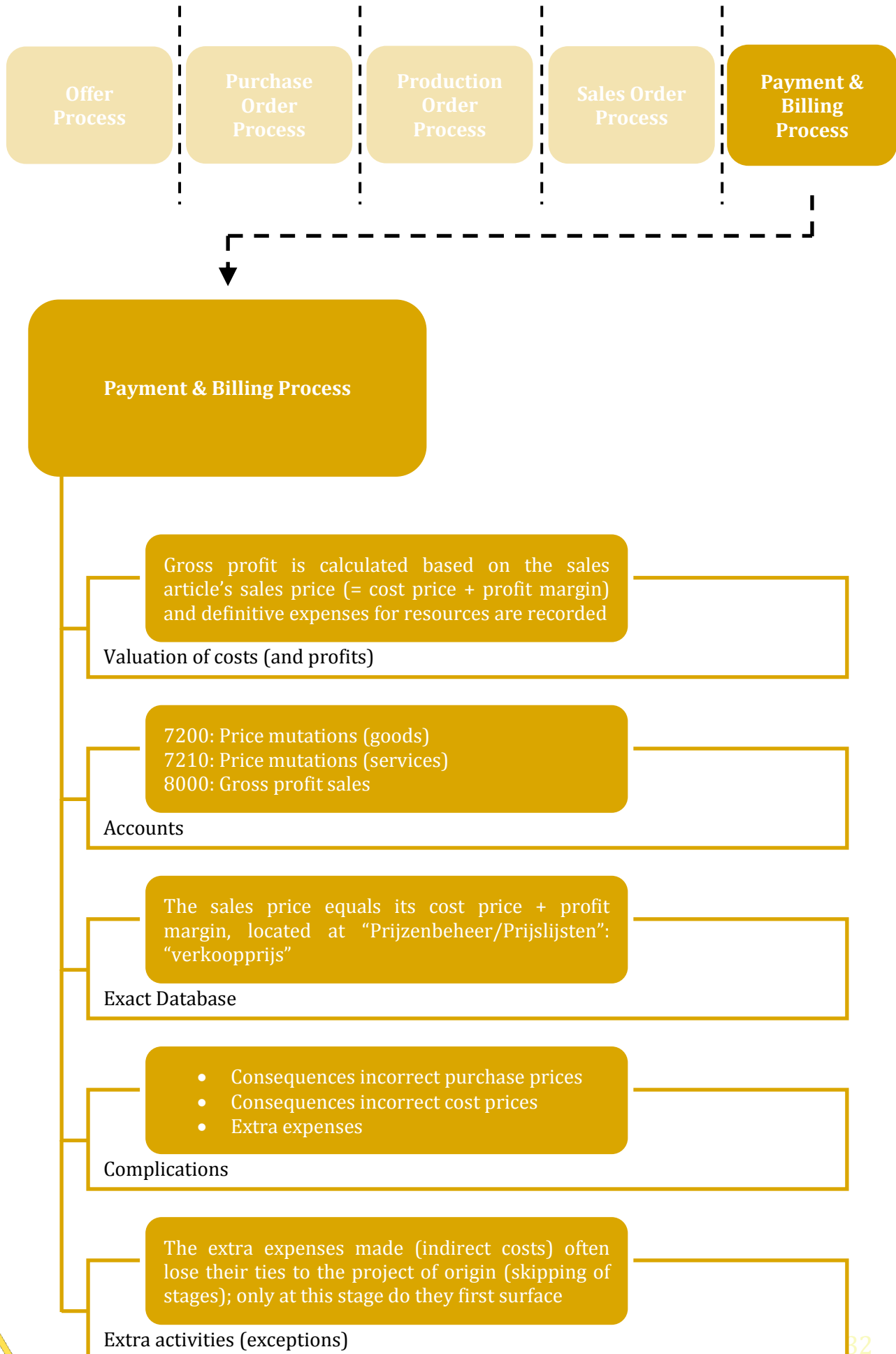
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V.









Revised offer process (courtesy of Vinh)



Flow Chart

A flowchart is a type of diagram that represents an algorithm or process, showing the steps as boxes of various kinds, and their order by connecting them with arrows.

They are used in analyzing, designing, documenting or managing a process or program in various fields.

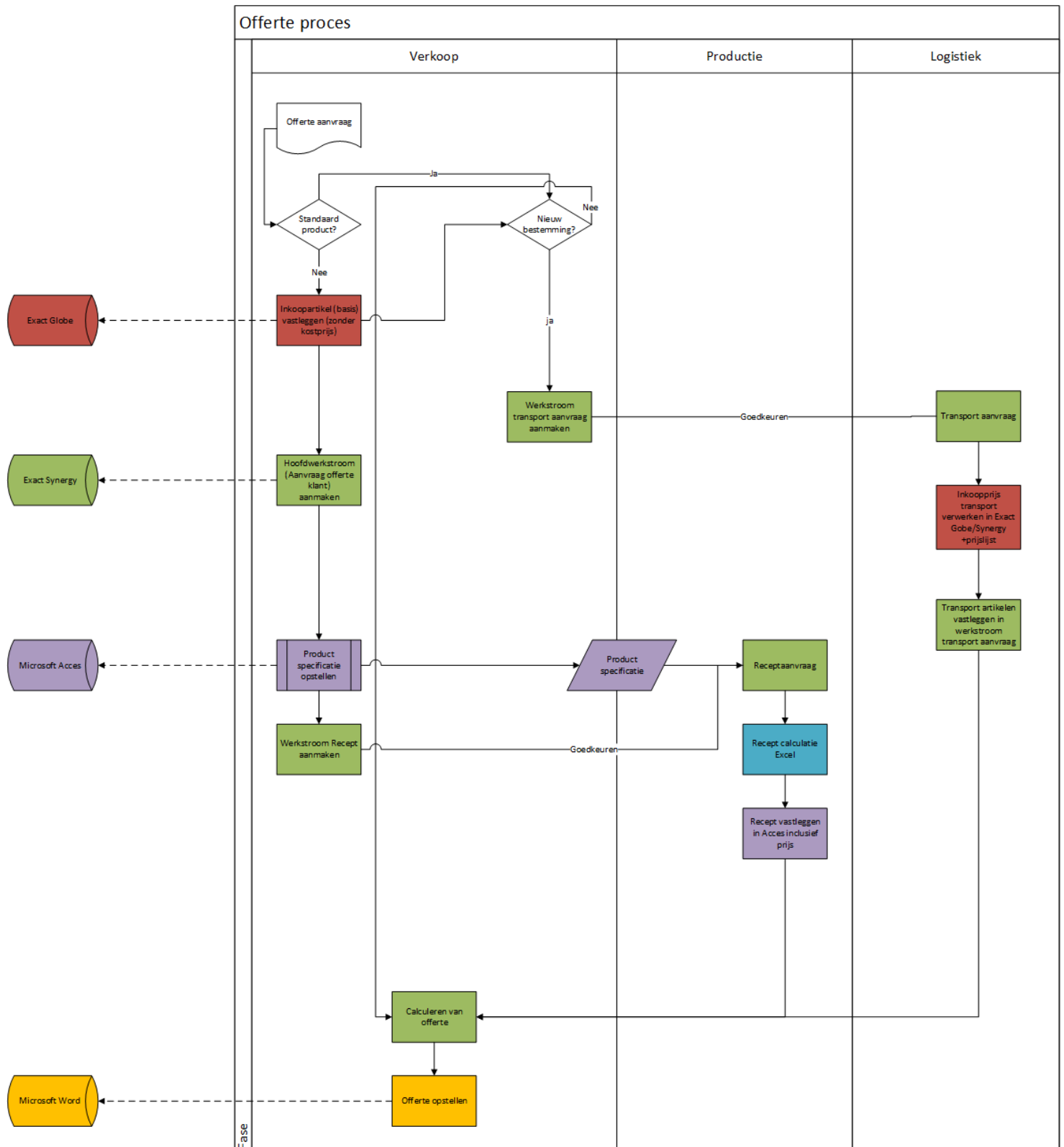
Offer Process

This is the stage where initial agreements between the company, MeMon, and the customer are first settled. Here, whenever a client approaches MeMon due to interest in a certain product, the organization starts processing said request; by taking into account expenses made for securing resources, producing the final product and costs of delivery to the client, an offer is created by MeMon and sent back to the customer.

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VI.



Detailed Scenario Analysis



Analysis

1. a systematic examination and evaluation of data or information, by breaking it into its component parts to uncover their interrelationships.
2. an examination of data and facts to uncover and understand cause-effect relationships, thus providing basis for problem solving and decision making.

Scenario

1. an outline of the plot of a dramatic work, giving particulars as to the scenes, characters, situations, etc.
2. the outline or the manuscript of a motion picture or television program, giving the action in the order in which it takes place, the description of scenes and characters, etc.
3. an imagined or projected sequence of events, especially any of several detailed plans or possibilities.

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VII.

Post-calculation Scenario I

Client | Terrasan
Product | Org. min 15-5-5 + 2 MgO – kruimel
Amount | 24 ton
Sales Order | 11301796

		Offer €		Exact €		Actual €	Comments
Total “te ontvangen facturen”		8568		8568		8604	
Comprised of							
Base article	24*310	7440	24*310	7440	24*310	7440	
Big bags 1000 kg	24*11	264	24*11	264	26*11	264	1100 kg BB are used
Transport	24*36	864	24*36	864	1*900	900	Under-absorption
Total costs of goods sold		8568		8568		8604	transport
Total Earnings	24*377	9048	24*377	9048	24*377	9048	
Total Profit		480		480		466	
Profit Margin (per ton)		20		20		19.42	

PROFIT MARGIN ANALYSIS

Profit Margin Goal : 20.00 per ton							
True Profit Margin	444/24	18.50	444/24	18.50	444/24	18.50	
Deviation (in % from goal)		-7.50		-7.50		-7.50	

Post-calculation Scenario II

Client | Agro CS
Product | Steamed Horn 0-3 mm
Amount | 18 ton (15 x 1200 kg)
Sales Order | 11301855

		Offer €		Exact €		Actual €	Comments
Total “te ontvangen facturen”		9090		9141		9141	
Comprised of							
Base article	18*505	9090	18*494.50	8901	18*494.50	8901	
Big bags 1200 kg		-	18*11/1.2	165	15*11	165	
Blokpallet		-	18*5/1.2	75	15*11	75	
Total costs of goods sold		9090		9141		9141	
Total Earnings	18*545	<u>9810</u>	18*548	<u>9864</u>	18*550	<u>9900</u>	Sales price increase
Total Profit		720		723		759	
Total price mutations					+	9	
Comprised of							
Product exchange					-	437.75	
Product exchange					+	437.75	
Discount invoices					+	9	
					+	9	True expenses less than initially forecasted
New Total Profit		720		723		768	
Profit Margin (per ton)		40		40.17		42.67	

PROFIT MARGIN ANALYSIS

Profit Margin Goal : 40.00 per ton

True Profit Margin	678/18	37.67	732/18	40.67	768/18	42.67
Deviation (in % from goal)		-5.83		+1.67		+6.67

Client	Agrotheek
Product	NPK 12-4-9
Amount	5.75 ton
Sales Order	11301297

		Offer €		Exact €		Actual €	Comments
Total “te ontvangen facturen”		2933.75		777.50		777.50	
Comprised of							
Siforga	5.75*90.00	517.50	5.75*90.00	517.50	5.75*90.00	517.50	
Pre-mix	5.75*378.00	2173.50	in stock	-	in stock	-	no need to be purchased
Blending	5.75*10.00	57.50	5.75*25.00	143.75	5.75*25	143.75	
Zakgoed	5.75*12.00	69.00	in stock	-	in stock	-	no need to be purchased
Handling zakgoed	5.75*15	86.25	5.75*15	86.25	5.75*15	86.25	
Blokpallet	6*5	<u>30.00</u>	6*5	<u>30.00</u>	6*5	<u>30.00</u>	
		2933.75		777.50		777.50	
Adjustments pre-mix		-	5.75*379.50	2182.13	5.75*379.50	2182.13	pre-mix taken from stock
Adjustments zakgoed		-	5.75*8	<u>46.00</u>	5.75*8	<u>46.00</u>	zakgoed taken from stock
		2933.75		3005.63		3005.63	
Separately billed							
Transportation		-	6*40.50	<u>243.00</u>	6*23.35	<u>140.10</u>	transport is billed separately
Total costs of goods sold		2933.75		3248.63		3145.73	
Sales Revenue	5.75*585	3363.75	5.75*598	3438.50	5.75*585	3363.75	
Transportation coverage		-	6*40.50	243.00	6*23.35	140.10	
Total Earnings		<u>3363.75</u>		<u>3681.50</u>		<u>3503.85</u>	
Total Profit		430.00		432.87		358.12	
Total price mutations						-	
Comprised of							

Deviation forecast
Deviation forecast
Deviation forecast



New Total Profit	430.00	432.87	358.12
Profit Margin (per ton)	74.78	75.28	62.28

PROFIT MARGIN ANALYSIS

Profit Margin Goal : 75.00 per ton

True Profit Margin	<i>358.12/5.75</i>	62.28	<i>432.87/5.75</i>	75.28	<i>358.12/5.75</i>	62.28
Deviation (in % from goal)		-16.96		+0.37		-16.96

Derivation of Profit Margin Formula



Analysis

1. a systematic examination and evaluation of data or information, by breaking it into its component parts to uncover their interrelationships.
2. an examination of data and facts to uncover and understand cause-effect relationships, thus providing basis for problem solving and decision making.

Profit Margin

A ratio of profitability calculated as net income divided by revenues, or net profits divided by sales. It measures how much out of every dollar of sales a company actually keeps in earnings.

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VIII.

VOORCALCULATIE

REALISATIE

Opbrengsten

Gerealiseerde Omzet	$\sum_{i=1}^n (\text{te verkopen hoeveelheid}_i \times \text{verkoopprijs v. a.}_i)$	$\sum_{i=1}^n (\text{verkochte hoeveelheid}_i \times \text{factuurprijs v. a.}_i)$
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Kosten

Structuur	$\sum_{i=1}^n \sum_{j=1}^m (\text{in te kopen hoeveelheid}_{ij} \times \text{inkoopprijs i. a.}_{ij})$	$\sum_{i=1}^n \sum_{j=1}^m (\text{ingekochte hoeveelheid}_{ij} \times \text{hist. kostprijs i. a.}_{ij})$
Transport	$\sum_{i=1}^n \left(\frac{\text{Tonnage v. a.}_i}{\sum \text{Tonnage v. a.}_i} \times \text{inkoopprijs transport} \right)$	$\sum_{i=1}^n \left(\frac{\text{Tonnage v. a.}_i}{\sum \text{Tonnage v. a.}_i} \times \text{hist. kostprijs transport} \right)$
Extra Kosten (LC, documentatie ...)	$\sum_{i=1}^n \left(\frac{\text{Tonnage v. a.}_i}{\sum \text{Tonnage v. a.}_i} \times \text{inkoopprijs "kosten"} \right)$	$\sum_{i=1}^n \left(\frac{\text{Tonnage v. a.}_i}{\sum \text{Tonnage v. a.}_i} \times \text{hist. kostprijs "kosten"} \right)$
Voorraadartikel: zakgoed	$\sum_{i=1}^n (\text{te verbruiken hoeveelheid}_i \times \text{inkoopprijs z. g.}_i)$	$\sum_{i=1}^n (\text{verbruikte hoeveelheid}_i \times \text{hist. kostprijs z. g.}_i)$
Voorraadartikel: pre-mix	$\sum_{i=1}^n (\text{te verbruiken hoeveelheid}_i \times \text{inkoopprijs p. m.}_i)$	$\sum_{i=1}^n (\text{verbruikte hoeveelheid}_i \times \text{hist. kostprijs p. m.}_i)$

Prijsverschillen

Goederen	n.v.t.	$\sum_{i=1}^n \sum_{j=1}^m (\text{ingekochte hoeveelheid}_{ij} \times \text{hist. kostprijs i. a.}_{ij})$ $- \sum_{i,j=1}^n \text{factuurwaarde}_{ij}$
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Diensten	n.v.t.	$\sum_{i=1}^n \sum_{j=1}^m (\text{ingekochte hoeveelheid}_{ij} \times \text{hist. kostprijs i. a.}_{ij})$ $- \sum_{i,j=1}^n \text{factuurwaarde}_{ij}$
Voorraadartikel: zakgoed	n.v.t.	n.v.t. / niet te realiseren
Voorraadartikel: pre-mix	n.v.t.	n.v.t. / niet te realiseren

Marge

Verkoopartikel _i	$\frac{\text{Opbrengsten}_i - \text{Kosten}_i}{\text{verkochte hoeveelheid}_i}$	$\frac{\text{Opbrengsten}_i - \text{Kosten}_i + \text{Prijsverschillen}_i}{\text{verkochte hoeveelheid}_i}$
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Eenheden

Hoeveelheid (ingekocht/verkocht)
 Prijzen (inkoop/verkoop/factuur/kost)
 Extra kosten
 Transport

Ton
 Ton
 Per Stuk
 Per Stuk, omgerekend naar Ton

Afkortingen (en betekenis)

v.a.
 i.a.
 z.g.
 p.m.
 hist. kostprijs

verkoopartikel
 inkoopartikel
 zakgoed
 pre-mix
 historische kostprijs (kostprijs op het moment van boeken)

REALISATIE

Opbrengsten

Gerealiseerde Omzet	Waarde te vinden op: Details:	Rekening 8000 (Totaal Credit) Verkoopartikel (nummer) vermeld op regelniveau, Rek. 8000
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Kosten

Structuur	Waarde te vinden op: Details:	Rekening 2200, regelniveau Individuele artikelen (nummers) vermeld op regelniveau, Rek. 2200
Transport	Waarde te vinden op: Details:	Rekening 2200, regelniveau Transportartikel (nummer) vermeld op regelniveau, Rek. 2200
Extra Kosten (LC, documentatie ...)	Waarde te vinden op: Details:	Rekening 2200, regelniveau Extra Kosten (nummers) vermeld op regelniveau, Rek. 2200
Vorraadartikel: zakgoed	Waarde te vinden op: Details:	
Vorraadartikel: pre-mix	Waarde te vinden op: Details:	

Prijsverschillen

Goederen	Waarde te vinden op: Details:	Rekening 7200 (Totaal Credit) – Rekening 7200 (Totaal Debet) Individuele mutaties (nummers) vermeld op regelniveau, Rek. 7200
Diensten	Waarde te vinden op: Details:	Rekening 7210 (Totaal Credit) – Rekening 7210 (Totaal Debet) Individuele mutaties (nummers) vermeld op regelniveau, Rek. 7210
Vorraadartikel: zakgoed	Waarde te vinden op: Details:	n.v.t. niet te realiseren op projectniveau
Vorraadartikel: pre-mix	Waarde te vinden op: Details:	n.v.t. niet te realiseren op projectniveau

Marge

Verkoopartikel _i	$\frac{\text{Opbrengsten}_i - \text{Kosten}_i + \text{Prijsverschillen}_i}{\text{verkochte hoeveelheid}_i}$
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APPENDIX END