Cost price calculation for Zuivelhoeve – Finding the most appropriate method

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Preface

This thesis is written to be able to graduate for my master Business Administration with the specialization Financial management at University of Twente. The research for this thesis was conducted at Zuivelhoeve in Hengelo. This graduation period is divided into two parts. Part 1 is written from May 2019 to August 2019. Part 2 is written from October 2019 to February 2020. My first supervisor, Dr. Ir. W.J.A. van Heeswijk supported me during this period. He answered my questions so that I would continue with my research. Hereby, I would like to thank him in particular. His supervisory role have been of great value during my graduation period because of his help and critical view.

Moreover, I would like to thank the financial director of Zuivelhoeve. He gave me the opportunity to write this thesis at Zuivelhoeve (a company), which was very constructive. After conducting the interviews I was able to answer the research question. That is why I also want to thank the people with whom I was allowed to do an interview.

Sjanne Hofman
February 7th, 2020.

Executive Summary

Zuivelhoeve is a production company for custard, yogurt, curd cheese and porridge. Having insight into the cost price helps in setting a good sales price in order to make a profit. Currently, Zuivelhoeve uses the direct costing method. This method is a calculation method whereby only the variable costs that are directly attributed to a product are included in the cost price. However, because a number of changes has taken place in recent years, the current cost system may no longer correspond to reality: there has been a change of management, a warehouse has been added and changes have been taken place in the factory. In addition, it can bring advantages to include indirect costs in the cost price. Therefore, the aim of this study is to investigate what the most suitable cost price calculation is within Zuivelhoeve. The research question of this study is therefore: *What is the most suitable cost allocation method for Zuivelhoeve to get a more accurate overview of the costs?*

In order to answer this main question, first desk research is done into various cost price methods. It has been investigated what the various cost price methods entail and what the advantages and disadvantages of these methods are. The cost price methods described in this study are the Direct Costing Method, the Surcharge Percentage Method, the Cost Center Method and Activity Based Costing. Moreover, qualitative research was used to find out what the most suitable cost price method is for Zuivelhoeve. For this, interviews were held with directors, managers and employees from different departments.

Because the former financial director was positive about Activity Based Costing, I first investigated whether this cost method is most suitable for Zuivelhoeve. However, qualitative research has shown that Activity Based Costing is difficult to apply within Zuivelhoeve and is therefore not the most suitable cost method for this company. The main reason for this is that activities cannot be properly attributed to specific products within Zuivelhoeve. It has become clear from this research that the direct costing method, the cost method that has already been used within Zuivelhoeve, is the most suitable. However, the way this method is used is not very product-specific and therefore not very accurate. That is why I investigated how this method can be made more product-specific. For this reason, the difference steps were analyzed (from the arrival of raw materials to the delivery of the end product to the customer) to see how the costs could be made more product-specific. It has been investigated whether certain costs such as production costs and logistic costs can be made more product-specific by, for example, by finding out what the line speeds are and what the output is per specific product per hour and by calculating the costs for order picking specific products. Based on this, the cost price

can be calculated more product-specific. This can be seen as a form of ABC, but it is not. With the help of ABC the activities of all indirect costs are tracked. In the steps of the proposed solution, people are directly involved with the products. With logistics, the products themselves are picked. The products themselves are also transported. For example, marketing (indirect costs) ensures that the products are actually sold, but these costs are not in the process from the arrival of the raw materials to the delivery of the end product to the customer and are therefore not directly related to the process. Therefore, there is no good insight into all costs, only the costs that are directly related to the product. With the proposed solution, the indirect costs are still allocated on the basis of volume of products, as is the case with all traditional cost systems.

The proposed solution is a process that consists of five steps:

- Step 1: Preparation of basic mix.
- Step 2: Production line (production, cleaning, packaging change).
- Step 3: Value Added Logistics.
- Step 4: Logistics.
- Step 5: Transport.

By allocating costs using these steps, it was possible to allocate the correct costs specifically at product level. This is a proposed cost calculation for Zuivelhoeve.

Based on these results I recommend to Zuivelhoeve to use the proposed cost calculation. However, a part of the input for cost calculations that Zuivelhoeve has is based on assumptions, such as speeds of the machines. Another recommendation is therefore to test these assumptions in the factory. This allows the cost price calculation to become even more accurate. In addition, it is recommended to map out for each customer which (combination of) the following options is expected to yield the most: price increase, price / quality, new concepts, product mix improvement. This allows Zuivelhoeve to see how the most profit can be earned per customer.

Contents

1. Introduction

In this chapter, the aim is to provide information about Zuivelhoeve (the company for which this research is conducted) and describe the problem statement. First, background information about Zuivelhoeve is described. Second, the problem statement is discussed. The discussion of the problem will lead the reader to the research question and the purpose of this study.

1.1. Background information

The Roerink Food Family is a family business (holding company), which includes three subsidiary companies (operating companies). In Figure 1 an overview of the structure is shown.

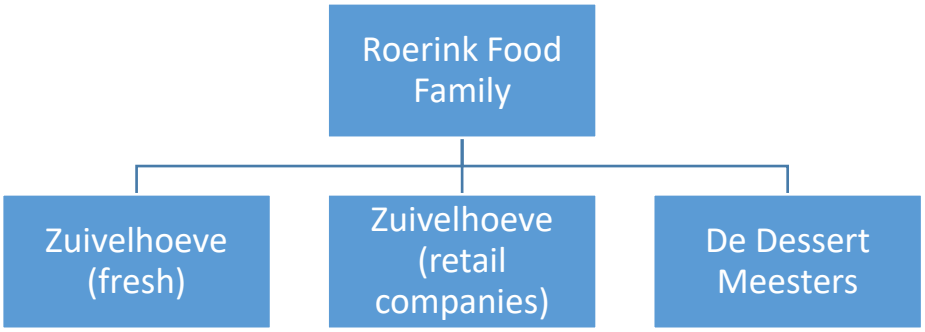

Figure 1. Structure of Roerink Food Family

Roerink Food Family: The staff functions – such as purchasing, finance, HR and IT – work for all three subsidiary companies.

Zuivelhoeve (fresh): A production company where custard, yogurt, curd cheese and porridge is produced.

Zuivelhoeve (retail companies): A trading company with delicatessen shops throughout the Netherlands.

De Dessert Meesters (DDM): A production company where ice is produced.

Zuivelhoeve is known from among other things the “Boer'n Yogurt ®” and “Boer’n Vla ®”. Zuivelhoeve started selling dairy products from the farm in 1981 and has grown into a family business in 35 years. The yogurt and custard are made from meadow milk from farmers in the immediate vicinity of Twekkelo (where the main building and factory of Zuivelhoeve are located). The combination of firm yogurt, fruit and the transparent special packaging makes the products distinctive in the market.

Zuivelhoeve produces both branded and private label products. Boer'n Yogurt from Zuivelhoeve is, for example, a brand product. A brand product is a product that has a high brand awareness and a good reputation. Both the price and the quality of these products is higher compared to non-branded products. A brand product is often advertised to increase brand awareness and to maintain or even strengthen the established reputation. Private brands or Private label products are products that resemble the brand product in terms of packaging design. The name of the supermarket is often on these products. They hitch a ride on the brand's image without the expensive advertising costs. That is why they are usually cheaper. With Zuivelhoeve yogurt, for example, the difference between the branded product and the private label product is also in the yogurt itself. The branded product uses farmer's yogurt, a firm yogurt that has a pure taste. The private label products use semi-skimmed yogurt, a yogurt that is slightly less full of flavor compared to farmer's yogurt.

1.2. Problem statement

The allocation of costs is necessary since companies need and want to determine the cost prices of their products. They do this because, among other things, having insights into the cost price helps in setting a good sales price in order to make a profit. Currently, Zuivelhoeve uses the direct costing model. Direct costing is a cost calculation method whereby only the variable costs that can be directly attributed to a product are included. The advantages of this costing system are that it is inexpensive to implement and that it is relatively simple. However, a disadvantage is that there is no clear overview where the overhead (indirect) costs come from. In other words, overhead costs are not allocated to the products that actually consume the overhead activities (Kaplan & Cooper, 1991). Because several changes have taken place in recent years, the current cost system no longer corresponds to the current process. Changes that have taken place are: there has been a change of management, a warehouse has been added and changes have taken place in the factory. Machines have been added as a result of which the capacity in the factory has become too low. As a result, for example, muesli cups can no longer be made with the machine but must be made manually. Due to these changes, the costs no longer fully correspond to how it was once conceived. In addition, because almost 1/3rd of the costs consist of indirect costs, it may be advantageous to include the indirect costs in a more specific way in the cost price calculation. At this moment all overhead costs are added and subsequently divided by the total number of products. As a result, the current cost price calculation is not very accurate because certain products may cause more (indirect) costs than others. Therefore, the aim of this study is to investigate what the most suitable cost price calculation is within Zuivelhoeve.

The former financial director of Zuivelhoeve spoke positively about Activity Based Costing (ABC). According to this former financial director, ABC is a good and interesting accounting tool

because in comparison to the traditional cost system, it gives a more accurate indication of where the costs come from and therefore better decisions can be made. Therefore, he would like to know whether this cost allocation method is suitable for Zuivelhoeve. ABC can be defined as a costing method that identifies activities in a company and assigns the cost of each activity to all products according to the actual consumption made for the regarding product (Kaplan & Cooper, 1992). In general, a lot of research has been done on ABC. Despite the many benefits that ABC brings, it is complex and time-consuming to implement. The ABC method finds its origin in the industry, and later this cost method is also used in other sectors. That is why it is interesting to see whether ABC has added value for Zuivelhoeve or if it is better to opt for a different cost allocation method. Therefore, the research question is: *What is the most suitable cost allocation method for Zuivelhoeve to get a more accurate overview of the costs?*

This research is structured as follows. First, different cost allocation methods will be described in the literature review. Second, in the methodology, it will be described how the research will be carried out and how the quality of the research can be guaranteed as well as possible in order conclude which cost price calculation is most suitable for Zuivelhoeve.

2. Literature review

In this chapter, the theoretical framework of cost prices is discussed. First, the definition of direct and indirect costs are described. Second, different cost price methods are explained: Direct costing method, Surcharge percentage method, Cost center method and Activity Based Costing (ABC). Because the focus is initially on ABC, this cost method is discussed at a higher level of detail in this chapter.

2.1. Direct and indirect costs

Direct costs are costs that can be directly attributed to different product types, such as material costs and labor costs of production staff. Indirect costs cannot be directly attributed, such as the depreciation costs of a machine that processes several product types or the labor costs of departments outside the production department. Because indirect costs cannot be directly attributed to a product, they are more difficult to allocate to the cost price than the direct costs (Spielman, 2018).

2.2. Direct Costing

In the case of direct costing, only the direct variable costs are allocated to the products. In contrast to the other calculation methods, the indirect costs are not specified, but charged directly to the result. A (contribution) margin is calculated by applying the direct costing method. This margin shows (per product) what the contribution is to cover the indirect costs so that it is clear which products contribute to what extent (Velde, 2011). The advantage of this cost price method is that it is simple and cheap. However, the disadvantages are that this method is not very accurate, so it is not clear where all indirect costs come from. The direct cost method is suitable for product introductions in highly competitive markets and for companies that can distribute the fixed costs over several products.

2.3. Surcharge percentage method

A surcharge is an extra fee, charge or tax that is added on the cost of goods sold, beyond the initially quoted price. In this method, the direct and indirect costs are planned for a certain period of time (Finkler & Ward, 1999). Subsequently, the indirect costs are determined as a percentage of the total direct cost. The integral cost of goods sold is calculated by determining the direct costs for each product plus the amount for direct costs multiplied by the calculated percentage of the indirect costs (Finkler & Ward, 1999). The indirect costs are shared between the departments via a distribution key that represents the number of employees. The surcharge method is a simple method to allocate indirect costs and is relatively cheap, but this method is based on the budgeted direct and indirect costs and is based on the assumption that there is a linear relationship between these two. However,

indirect costs are partly variable and partly fixed, whereas the fixed costs are independent of the volume. If the actual production deviates from the normal production, the cost prices do not match with the reality and an occupancy result on the fixed costs. This occupancy result is created via the formula:

(W-N) x $\frac{C}{N}$ W = actual production | N = normal production | C = total fixed costs

Occupancy result is the profit or loss that a company makes on the total constant costs because the actual production is larger or smaller, respectively, than the normal production. Hereby it is possible to have under occupation or over occupation. Under occupation means that the actual production is smaller than the normal production and therefore not all constant costs are covered. Over occupation is that the actual production is larger than the normal production and therefore more is earned than is necessary to recoup the constant costs.

2.4. Cost center method

Another commonly used allocation method is the cost center method. In contrast to the traditional cost system, the cost center method requires more insight into the costing structure. In this method, indirect costs get assigned to one or two distinct kinds of cost centers: production cost centers and service cost centers.

- Production cost centers (main cost centers) are the business units where the production and selling activities take place (Drury, 2012). In other words, the activities that directly benefit the product. For example, the costs incurred by the logistics department.
- Service cost centers are the business units which support production, for instance, the HR department, the marketing department and the ICT department (Drury, 2012). These costs cannot be directly associated with a particular product, but are important for the entire organization.

Drury (2012) argues that once the costs are assigned to cost centers, service cost centers will be allocated to production cost centers, and possibly allocated to other service cost centers. Finally, the costs within the service cost centers (with possible allocated costs from other service cost centers) will be allocated to the production cost centers. After that, the costs of the production cost centers are allocated based on a distribution key to the cost units and/or products. For example, consider the number of hours of the expedition multiplied by the hourly rate. In Figure 2, an overview is shown.

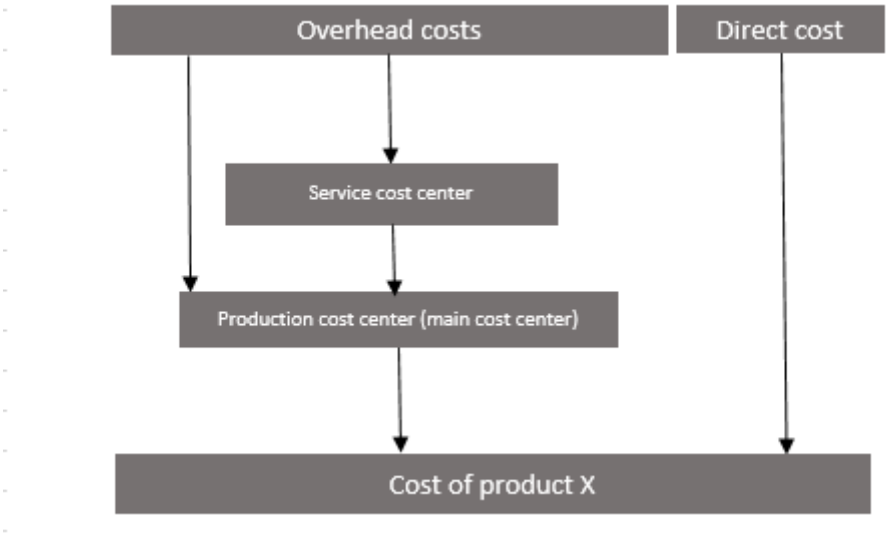

Figure 2. Cost Center Method.

To make it a little clearer an example will be given (shown in Table 1). Company A has two service cost centers: HR department and the ICT department, and two production cost centers: Center X and Center Y. The HR and ICT support each other because HR makes 500 hours for ICT and ICT makes 4000 hours for HRM.

Table 1. An overview of the cost center method.

	Service cost centers		**Production cost centers**		
	HR	ICT	Center X	Center Y	**Total**
HR hours		500	4000	500	**5000**
HR hours (%)		10%	80%	10%	**100%**
ICT hours	4000		6000	10000	**20000**
ICT hours (%)	20%		30%	50%	**100%**

Because of this, the rates can be determined for the cost calculation (Wallenburg, 1998). This method is a way to introduce a system which brings the 'encryption' of the indirect costs. Therefore, an advantage of this method is that the data that are required for cost price calculation can also be used for budgeting the costs per department (Wallenburg, 1998). In the following paragraphs, three different methods of the cost center method will be explained: the direct method, the two-step down method and the reciprocal method.

2.4.1. Cost Center Method: Direct method

The direct method of the cost center method is the most basic out of the three methods. In this method, the service cost centers are only allocated to production cost centers and not to other service cost centers. This method is the most uncomplicated, but also the least accurate cost allocation method according to Horngren (2012). In Table 2 (and Figure 3) an example of this direct cost method is shown based on Table 1. Suppose the yearly costs of the ICT department are 2.000.000 and the yearly costs of the HR department are 500.000. Then the cost allocation will be as follows:

Table 2. Cost center method: Direct method.

	Service cost centers		**Production cost centers**		
	HR	ICT	Center X	Center Y	**Total costs**
Costs	€ 500.000	€ 2.000.000	€ 1.500.000	€ 250.000	**€ 4.250.000**
Allocation HR	€ 500.000		€ 444.444	€ 55.556	
Allocation HR (%)			89%	11%	
Allocation ICT		€ 2.000.000	€ 750.000	€ 1.250.000	
Allocation ICT (%)			38%	63%	
Total costs			€ 2.694.444	€ 1.555.556	**€ 4.250.000**

Allocation HR:

*Center X: 4000/(4000+500) * 500.000*

*Center Y: 500/(4000+500) * 500.000*

Allocation ICT:

*Center X: 6000/(6000+10000) * 2.000.000*

*Center Y: 10000/(6000+10000) * 2.000.000*

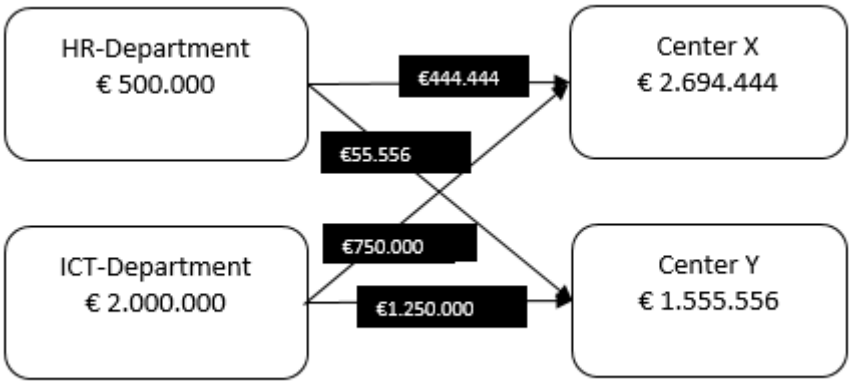

Figure 3. Cost center method: Direct method.

2.4.2. Cost Center Method: Step-down method

In the step-down method, the service cost centers are first ranked. It begins with the allocation of cost of the service department that provides the greatest amount of service to other service departments and ends with the allocation of cost of the service department that provides the least amount of service to other departments (Drury, 2012). In the example above, the IT department provides the greatest

amount of service to other departments. Therefore, part of the costs incurred by the ICT department (from the example) can be allocated to the HR department and a part to the production cost centers. An example can be seen in Table 3 and Figure 4. This allocation is more complex in comparison to the direct method, but the results are more accurate according to Horngren (2012).

Table 3. Example: Cost center method: Step-down method.

	Service cost centers		Production cost centers		
	HR	ICT	Center X	Center Y	Total costs
Costs	€ 500.000	€ 2.000.000	€ 1.500.000	€ 250.000	**€ 4.250.000**
Allocation HR	€ 900.000		€ 800.000	€ 100.000	
Allocation HR (%)			160%	20%	
Allocation ICT	€ 400.000	€ 2.000.000	€ 600.000	€ 1.000.000	
Allocation ICT (%)	20%		30%	50%	
Total costs			€ 2.900.000	€ 1.350.000	**€ 4.250.000**

Allocation HR:

HR-Department: 500.000+400.000

*Center X: 4000/(4000+500) * 900.000*

*Center Y: 500/(4000+500) * 900.000*

Allocation ICT:

*HR: 4000/(4000+6000+10000)*2.000.000*

*Center X: 6000/(6000+4000+10000) * 2.000.000*

*Center Y: 10000/(6000+10000) * 2.000.000*

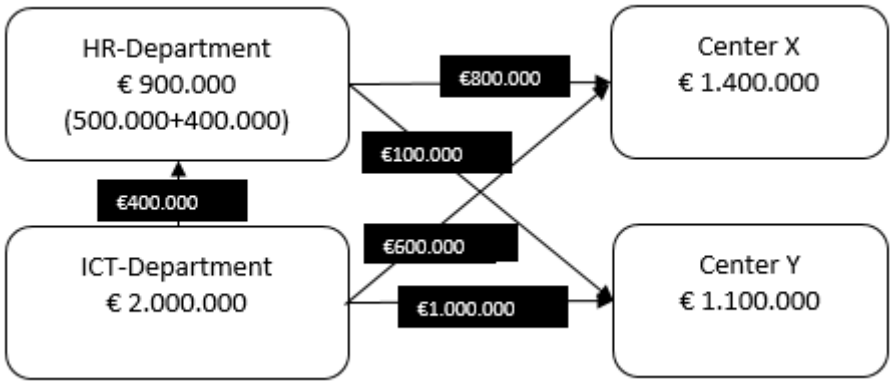

Figure 4. Cost center method: Step-down method.

2.4.3. Cost Center Method: Reciprocal method

The reciprocal method begins by allocating the service cost centers to other service cost centers. After that, the service cost centers are allocated to the production cost centers. To calculate the number of costs which will be allocated from one service cost center to another, the equation of one service cost center is substituting in the other.

Equation (1) HR = 500.000 + (4000/20000) ICT

Equation (2) ICT = 2.000.000 + (500/5000) HR

Calculations:

Equation (1) HR = 500.000 + 0.2 (2.000.000 + 0.1HR)

HR = 500.000 + 400.000 + 0.02HR

0.98HR = 900.000

HR = € 918.367,35

Equation (2) ICT = 2.000.000 + 0.1HR

ICT = 2.000.000 + 0.1 * 918.367,35

ICT = 2.000.000 + 91.836,74

ICT = € 2.091.836,74

Subsequently, the costs of the equations will be allocated to the production costs centers in the same way as the direct method. An overview is shown in Table 4 and Figure 5. This method is most accurate, however, in practice, this method is not used often due to its high complexity.

Table 4. Cost center method: Reciprocal method.

	Service cost centers		**Production cost centers**		
	HR	ICT	Center X	Center Y	**Total costs**
Costs	€ 500.000	€ 2.000.000	€ 1.500.000	€ 250.000	€ **4.250.000**
Allocation HR	918.367,35	91.836,74	€ 734.694	€ 91.837	
Allocation ICT	€ 418.367	2.091.836,74	€ 627.551	€ 1.045.918	
Total costs			€ 2.862.245	€ 1.387.755	€ **4.250.000**

Allocation HR:

*ICT: 500/(4000+500+500) * 918.367,35*

*Center X: 4000/(4000+500) * 918.367,35*

*Center Y: 500/(4000+500) * 918.367,35*

Allocation ICT:

*HR: 4000/(4000+6000+10000)*2.091.836,74*

*Center X: 6000/(6000+4000+10000) * 2.091.836,74*

*Center Y: 10000/(6000+10000) * 2.091.836,74*

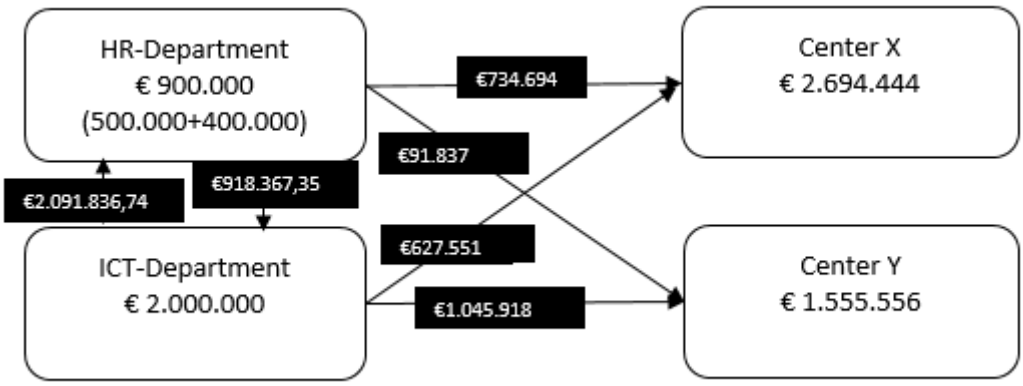

Figure 5. Cost center method: Reciprocal method.

Especially in companies with a varied production program, the cost center method can be beneficial. It is striking, however, that the direct cost method or the surcharge method is used in practice most of the time, also at companies that produce many different products. An advantage of this cost allocation method is that it is more accurate than a traditional cost method. Furthermore, it is easier to manage the costs. However, a disadvantage of this method is that it is complex and entails high costs because per situation it has to be considered how many costs are associated. The cost center method is often used by larger organizations and also by non-profit organizations such as certain government institutions.

2.5. Activity Based Costing

When using ABC, the focus is not on cost centers, but on activities. A lot of activities are being done for products that are not directly related to the product itself (Kaplan & Cooper, 1988). This new system, developed by Kaplan and Cooper, charges cost to activities needed for a final product, whereas traditional methods charge overhead costs based on the use of direct costs as labor or cost centers (Major & Hopper, 2005). According to Kaplan and Cooper (1998), the traditional costing system has two shortcomings. First, the system does not accurately report the costs of different processes and products. It helps to identify variable costs, such as raw materials and packaging materials, of producing one unit. However, the system fails to trace specific costs related to designing, delivering, producing, product development, marketing and selling departments. By using a traditional costing system, these costs are considered as overhead costs instead of cost of goods sold (COGS). This may mean that the cost price of products is underestimated or overestimated; making decisions about the product portfolio can be therefore more difficult. If the profit margin is for example overestimated, then it is likely that managers choose to produce more than they actually should produce. Kaplan and

Cooper (1998) argue that low-volume specialty products will have underestimated costs and high-volume standard products will have overstated costs because fixed overhead costs are shared among all products while making special products is more expensive than making the products that are widely sold. Second, as it is not clear where the overhead costs come from, it is not easy for the management to decide on cost savings. Therefore, the management cannot be provided with accurate, timely and operational measurements of performance, which is needed to improve the performance of the whole company (Cooper & Kaplan, 1998). When a company cannot keep up or stay ahead of its competitors, its future will be uncertain according to Kaplan and Cooper (1998).

These limitations are addressed by the ABC system. In contrast to traditional cost price systems, ABC does establish a causal relationship between the cost drivers and the overhead costs. According to Banton (2019), an activity cost driver causes the cost of an activity to increase or decrease. An example of a cost driver is the number of expected products to be sold. Examples of activities that are considered as overhead costs are design, engineering, purchasing, production, quality control and working time of employees from different departments (Kaplan & Cooper, 1998). With the help of ABC, companies are better able to allocate the (increased) overhead costs in the right way. In addition, because all costs are allocated to activities, management can see which activities were needed for a product and what costs are associated with it. Therefore, by using ABC, managers can see where action is needed to increase profits (Cooper & Kaplan, 1991). In short, ABC provides managers with more information; this makes it possible to calculate the cost price of a product more accurately. The ABC system is presented in Figure 6. As shown in this figure, the overhead costs consist of different activities. These activities entail costs. By multiplying the number of times an activity has been carried out (for a specific product) by the costs that an activity entails, the overhead costs of a product can be calculated.

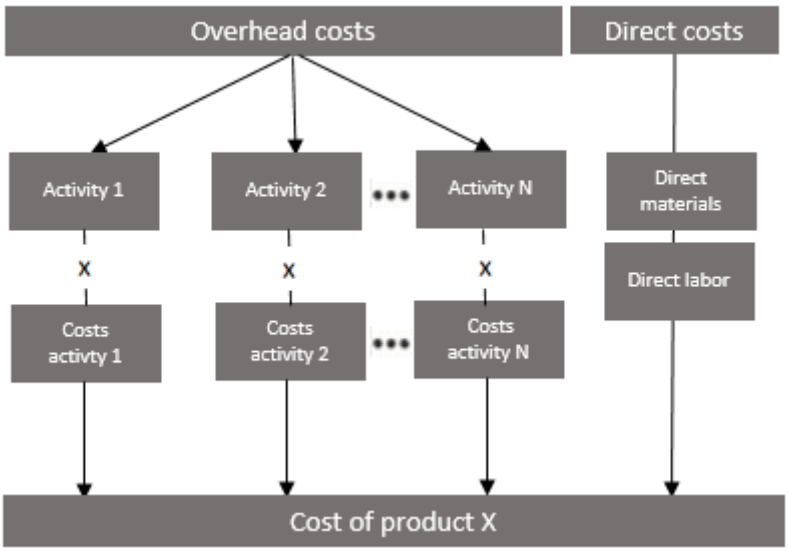

Figure 6. Activity Based Costing System based on Kaplan and Cooper (1998).

2.5.1. The advantages and limitations of ABC

Before implementing ABC, it is relevant to check whether the advantages outweigh the limitations. First, several advantages of ABC will be mentioned. After that, various limitations will be described.

The advantages of ABC

An advantage of ABC is that the cost price is measured more accurately in comparison with traditional cost systems. Because ABC bases its data on the activities needed to create a particular product, the system is able to display exactly what the cost is of each activity. Therefore, ABC provides managers with more accurate information than traditional costing systems do. This accurate information creates other benefits. Many companies desire to create value so they have a strong position in the market through creating financial statements surplus. To achieve this purpose, it is important to identify in detail the prices a company sets for certain work or product. This value creation is possible using ABC (Carlo, Filipo & Emanuala, 2010). In addition, because managers have more accurate information, they are better able to find out where certain costs come from. This allows processes within a company to be organized more efficiently and look for improvements within the production process, which leads to a reduction of unnecessary costs (Cooper & Kaplan, 1998).

Traditional costing systems are mainly focused on the production process of a company. ABC, on the other hand, is applicable to the entire company (Cooper & Kaplan, 1991). Therefore, according to Bhimani and Pigott (1992), ABC can contribute to better cost price calculations for the business strategy on the market. This makes it possible for companies to gain a competitive advantage. Another way for a company to gain a competitive advantage is to offer a wide variety of products; this meets the various demands of customers (Thyssen, Iraelsen & Jorgensen, 2005). However, offering a varied range of products adds costs and activities to the company's production process. Thyssen et al. (2005) argue that ABC helps to expose which activities are needed to deliver a product or service and shows the difference between the most profitable products and the non-profitable products.

The limitations of ABC

ABC also has several limitations. The first limitation is that a lot of information is needed for ABC to operate successfully because it takes a lot of time and money to gather information. Employees must be willing to provide information. Major and Hopper (2005) argue that research has shown that employees do not always show this willingness. One reason for this is that employees are afraid of losing their jobs if the system shows that many processes can be more effective. In addition, it may be hard to find really homogeneous activities. This makes it more difficult to group different activities (Yousif & Yousif, 2011). The second limitation according to Stratton et al. (2009) is that some companies consider ABC to be expensive and complicated to build and maintain. When implementing ABC, a lot of time has to be spent on defining the activities, calculating the cost price of the activities and finding the cost drivers. This requires a company to provide detailed cost information, which leads to a complicated process (Kaplan & Cooper, 1998). The third limitation is that some corporate costs are common costs which cannot be assigned to individual products in a right way. For instance, employees in the finance department are not concerned with specific products when booking invoices. The costs of these departments are still added up and divided by the number of products made. In short, the limitations of ABC are that it takes a lot of time, that it is expensive, and that it can be complex.

2.5.2. Working towards ABC systems

Accounting academics have identified several factors that determine the decision to implement ABC systems in companies. A model developed by Anderson (1995) will be used as help for the change towards an ABC system. Gosselin (2007) argues that this model is the most used and discussed model for the implementation process of a costing system. The model identifies six different stages to implement an ABC system:

1. Initiation
2. Adoption
3. Adaption
4. Acceptation
5. Routinization
6. Integration

The first stage, initiation, internal or external influences such as increasing competition or an uncertain business environment create the desire towards a change of the costing system. The second stage, adoption, is concerned with the choice of a proposed solution for the desire for a change of the costing

system. During the second stage, the decision of an investment in this change must also be made. The third stage is adaption. During this stage, the implementation of the new system begins, and, if necessary, adapted to the specific needs. The fourth stage is the acceptation stage. In this stage the new system will be used. The fifth stage is the routinization: the newly implemented system becomes operational and fully replaces the old costing system. The sixth and last stage is the integration, in which the system is used to improve efficiency and is fully integrated with other organizational systems.

2.5.3. Factors that influence ABC implementation

The implementation is ABC is related to a number of factors that can be divided into three categories.

The first category is the *conditions creating factors*. These are related to the theory about ABC. It can be established that certain types of companies implement ABC more often than others (Malmi, 1999). The following factors are important according to Malmi (1999):

- Cost structure: ABC occurs in companies with a relatively high amount of indirect manufacturing costs.
- Competition: the fiercer the competition is, the greater the need is for accurate information about costs.
- Diversity of products: the more products a company produces, the greater the chance that the cost prices of the products will be incorrectly determined.
- Complexity of the production process: as the production process becomes more complex, so more different types of activities can be distinguished, then ABC becomes more important.

The second category consists of structural factors. These depend on the size and structure of a company. Companies that introduce ABC are considerably larger than companies that do not. According to Bjørnenak (1997), the size of a company is determined by, for example, the turnover or the number of employees. From this, it becomes clear that companies with ‘longer lines of communication’ might benefit more from ABC. In addition, the structure of a company plays an important role when using ABC. The structure is typed based on three dimensions. The first dimension is vertical differentiation. This dimension reflects the number of hierarchical levels under the director. The second dimension is formalization. This dimension is characterized by the degree to which tasks within a company are standardized. The third dimension is centralization. This dimension is about the power and control within a company that is in the hands of a few individuals (Schoute, 2009). Schoute (2009) has investigated whether the factors "size" and "structure" influence the implementation of ABC. According to him, the implementation of ABC will be more successful with a *high degree of vertical differentiation*, a *low degree of centralization* and a *high degree of formalization*.

The third category consists of seven behavioral and organizational factors which determine the successful implementation of ABC. According to Shields (1995), there are a number of factors that are associated with behavior and organization. Shields (1995) argue that the behavioral and organizational factors are:

1. Top management support
2. Linkage of cost management system to competitive strategies, particularly quality and speed strategies: how do you compete on quality or fast delivery? The ABC system will have to be adjusted to this.
3. Linkage of the cost management system to performance evaluation and compensation: employees accept ABC earlier as their own welfare depends on this. A company can do this to encourage the employees.
4. Sufficient internal and external resources
5. Training in designing, implementation and using cost management: thus, training employees in design, implementation and use of ABC.
6. Non-accounting ownership: convince non-administrative staff that ABC is not only important for administrative staff.
7. Consensus about and clarity for the objective of the cost management systems: the goals from ABC should be clear for everyone. The concerned employees should get information and knowledge about ABC and need to know the benefits of ABC. This will lead to open communication and better cooperation in effectively implementing ABC.

By analyzing a company based on these three categories, an estimate can be made of the extent to which ABC is feasible within a company.

2.6. Summary

There are various cost price methods that a company can use when allocating costs. The direct costing method and surcharge costing method are the easiest to implement. However, these two methods are not very accurate. Both the cost center method and ABC lead to a purer and therefore more accurate cost price and thus to deeper insight. The ABC method provides the best insight. However, for both methods, the implementation and maintenance are very laborious and expensive. Below is an overview (Table 5) of the advantages and limitations of the various cost models discussed in the literature review.

Direct costing	Surchage percentage method	Cost center method	Activity Based Costing
Advantages			
Relatively simple	Relatively simple	Accurate	Accurate
Inexpensive	Inexpensive	Suitable for monitoring efficiency	Better overview of the costs - Unnecessary cost can be avoided
		Easier to manage costs	Better thought out business strategy
			Show difference between most profitable products and non-profitable products
Limitations			
Not accurate	Based on budgeted direct and indirect costs, therefore not accurate	Complex	Complex
No clear overview where the costs come from	Based on the assumption that there is a linear relationship between direct and indirect costs	Expensive	Expensive
		Takes a lot of time	Takes a lot of time

Table 5. Overview advantages and limitations of the various cost models

Because the focus is initially on ABC, this cost method is discussed at a higher level of detail in this chapter. That is why is discussed which factors influence the implementation of ABC. The factors that influence the implementation of ABC are conditions creating factors (cost structure, competition and type of products), structural factors (depends on size and structure of a company), behavioral and organizational factors (this is about the cooperation or management and employees to implement ABC). By investigating whether the various factors that influence the implementation of ABC apply to Zuivelhoeve, a conclusion can be drawn about the application of ABC within Zuivelhoeve.

3. Methodology

In this chapter, it is explained how the answer on the research question will be found. Therefore, the readers get to know how the research will be conducted and how the findings are reached.

3.1. Goal setting

The aim of this study is to investigate what the most suitable cost price calculation is within Zuivelhoeve. Because the former financial director wanted to have investigated whether ABC is suitable for Zuivelhoeve, the focus will first be placed on ABC. This is interesting because there may be a difference in the number of activities that are done for branded products compared to private label products. In addition, there may be more activities for new products to be brought onto the market compared to products that have been on the market for a longer time. The time aspect of Zuivelhoeve products must be therefore taken into account. The moment a product is just new, a lot of work will be done for that product to generate awareness. However, if the product has been put on the market and awareness has been generated, the activities will decrease considerably, so that the cost calculation based on activities is no longer the same as before. A recommendation will, therefore, be given as to whether ABC is beneficial for Zuivelhoeve and, if so, in what way Zuivelhoeve can best approach the implementation of ABC. If ABC is not suitable for Zuivelhoeve, then it will be investigated which of the other cost price methods is most suitable for Zuivelhoeve.

3.2. Data collection, analysis and operationalization

Two different data collection methods were used during this study: desk research and qualitative research. These data methods will be explained below.

3.2.1. Desk research

During this research, desk research is done. This means that data will be collected that have already been collected by others (Verhoeven, 2011). However, Verhoeven (2011) notes that the research questions cannot be answered solely based on desk research because data may be dated or used for other purposes. Researchers must apply the information correctly in the context of their own research. In this research, desk research was used through online consultation of literature, literature from books and data that Zuivelhoeve itself has.

3.2.2. Qualitative method

This research is of a qualitative nature and has an exploratory character. Semi-structured in-depth interviews will be held where open questions are asked. For this type of interview, the questionnaire is prepared in advance, but own input from the respondent is possible (Verhoeven, 2018). In qualitative research, it becomes clear what the opinions, thoughts and feelings of employees and managers are. An advantage to use interviews in this research is, therefore, that underlying reasons and motivations of people become clear. However, Walcott (1994) states that qualitative research is socially constructed since individuals experience a different reality due to their own interpretations of the world. Therefore, the results can be interpreted differently if the same research is conducted by someone else.

In conducting this research, two directors, two managers, one controller, and two employees (an employee of the quality department and an employee of product development department) will be interviewed (the interview questions are represented in Appendix A). The two directors are responsible for various departments within the company. The purchasing manager does not fall under one of these two directors. That is why it was decided to interview him separately. In addition, the decision was made to interview the financial manager because he has knowledge of ABC and he is involved in financial matters within Zuivelhoeve. An interview was held with the controller because he is working on the current cost calculation and knows how or where the current cost model can be improved. This controller may also have insight into whether ABC could be feasible and beneficial. Finally, interviews were held with an employee of the quality department and an employee of product development. By interviewing the financial director, the financial manager and the controller, it will become clear what the thoughts, wishes and requirements are of introducing an ABC-system. By interviewing the other respondents, it becomes clear which activities are performed within the concerning department(s) and to what extent these activities can be attributed to the different Zuivelhoeve products.

In order to gain insights into the results, a transcript of the interviews was made. By recording the interviews and making a transcript (typing out) of the results, the analysis remains as close as possible to the reality. After the transcripts are made, fragments from the interview will be extracted to analyze. These fragments will be interpreted and compared with each other and based on this, categories will be assigned to these fragments to find similarities between the information obtained from the different respondents. The fragments are coded with the 'Grounded Theory Method' (GTM) of Glaser and Straus (1967). This method is beneficial to avoid presumptions and biases to discover what exactly is going on (Glaser & Straus). GTM consists of three phases: open coding, axial coding and selective coding. According to Corbin and Strauss (1990), open coding (phase 1) is the starting point of

the coding process. Every fragment is read multiple times in order to capture the key concepts. Any fragment has at least one open code, but sometimes there are multiple open codes, indicating that there are multiple concepts contained in the regarding fragment. An open code is a description or label that correctly displays the text fragment. Phase 2 of the coding process is the axial coding phase. Babbie (2016) describes axial coding as the process where codes are related to each other via a combination of inductive and deductive thinking. Selective coding (phase 3) is the process of choosing one category to be the core category (theme), and relating all other categories to that category. Finally, the categories will be compared with the theory to check the information obtained (triangulation).

3.2.3. Operationalization of the research

This research will be operationalized as follows:

1. *Investigate factors within Zuivelhoeve that determine the implementation of ABC.*

In the literature review of this research, it becomes clear that there are several factors, divided into three categories, that help determine which types of companies implement ABC. First, it was investigated to what extent these factors apply within Zuivelhoeve. By doing this, it becomes clear whether, based on the theory, Zuivelhoeve can benefit from applying ABC (desk research).

2. *Investigate whether ABC has added value/is beneficial within Zuivelhoeve.*

To investigate whether Zuivelhoeve can benefit from ABC, interviews will be held with the directors, management, controller and employees of different departments. The important results will be described. Based on the information from the interviews, it will be examined whether it is feasible to apply ABC within Zuivelhoeve. In addition, a conceptual model is made for using ABC. It will be investigated to what extent this conceptual model can be applied. In the conceptual model, data (such as the activities) should be entered. If this conceptual model is workable, it can be put into an ERP-system. By making use of this conceptual model, it must be possible that the employees of each department can fill in the information needed in order to apply ABC. The conceptual model is shown in Figure 7.

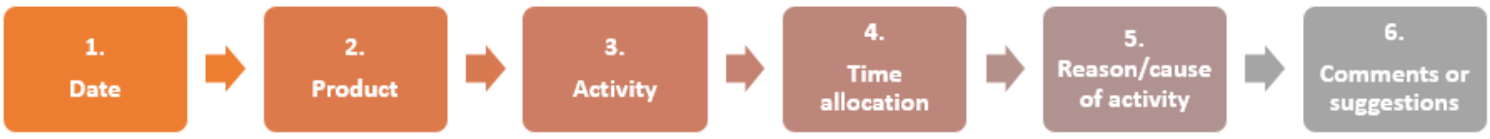

Figure 7. Conceptual model to apply ABC.

This conceptual model could be integrated into the ERP-system of Zuivelhoeve. However, it must be possible to complete all the steps (described below) to make ABC successful.

1. The date on which the activity takes place must be entered by the employee.
2. The employee must ''check'' for which product an activity has been carried out.
3. A description of the activity must be given.
4. The time when the employee started the activity, ended the activity, and how long the employee has been busy with the activity (time ended minus time started) has to be filled in.
5. The reason why an activity had to be carried out has to be filled in. Often this reason is caused by a person (customers, colleagues or manager). The purpose of determining the cause or reason for an activity is to be able to analyze whether an activity is necessary to carry out.
6. At the end, an employee can post comments or suggestions, possibly for improvement.

3. A: If ABC has added value within Zuivelhoeve. B: if ABC has NO added value within Zuivelhoeve.

A: Further develop the conceptual model so that it can be easily implemented in the ERP-system of Zuivelhoeve.

If ABC has added value/is suitable for Zuivelhoeve, it is relevant to further develop the conceptual model where employees of Zuivelhoeve can enter their activities. It is important that the employees can complete this in an effective way so that filling in the time of the activities per product does not take too much time.

B: Give suggestions for a different cost model / Optimization of the current cost model.

If ABC is not beneficial for Zuivelhoeve, then another cost model or the optimization of the current cost model will be considered. The discussed cost price methods from the literature review can be used for this.

4. Conclusions and recommendations

Based on the results, a conclusion and recommendation can be given as to what Zuivelhoeve can do best with the current cost system: replace for ABC, replace for another cost price method, or improve their current cost system.

Figure 8 shows an overview of the steps that are taken in the operationalization process.

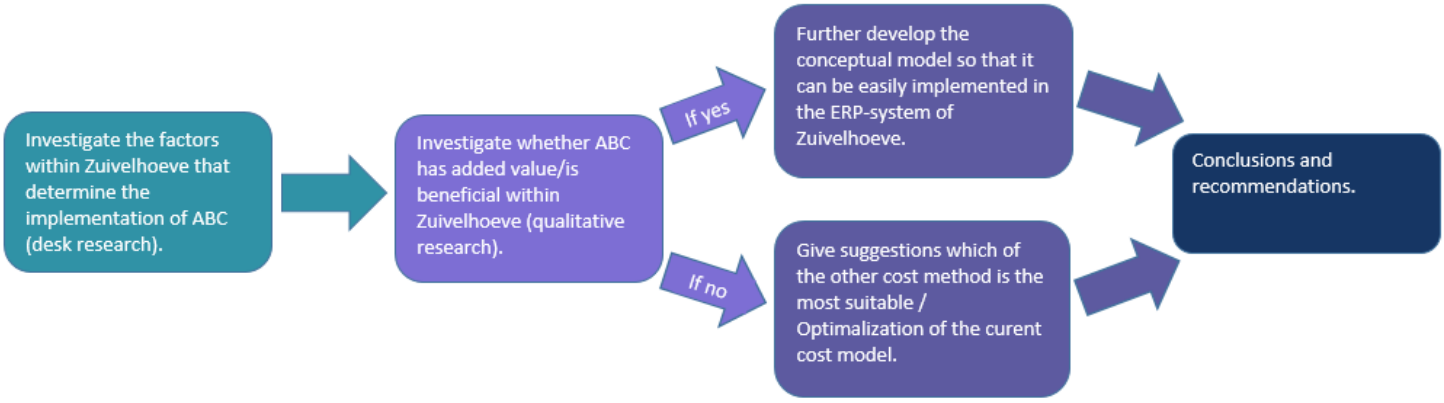

Figure 8. Operationalization of this research

3.3. Reliability and Validity

Scientific research should meet several requirements. In order to improve the quality of this research, reliability and validity have been taken into account.

3.3.1. Reliability

During the measurement of reliability, the number of errors that occur by chance in the research is checked. It is important to check how accurate the applied methodology is. In other words, if the research is to be carried out again in the same context, it is important that the results are more or less the same.

To ensure reliability, the interviews will be recorded so that they can be listened back. This means that all information provided by respondents can be used in the research. If the interviews are not recorded, it may be that certain information is forgotten to write down, which means that not all information provided by the respondents can be used. Moreover, it is not necessary to concentrate on taking notes when the interviews are recorded. Therefore, before the interviews, it is asked to the respondents if the conversation could be recorded. It will be clearly stated that the information will only be used for the study. After the interview, the most important objects will be written down. Also the impression of the person will be written down after the interview. To be ethically responsible and confidential with this research, it is decided not to use the names of the respondents. Instead, only the function, gender and age are used in this study.

When conducting an interview, it is important that people feel comfortable. Otherwise, they will probably not open up completely (Verhoeven, 2018). Therefore, relatively easy questions will be asked in the beginning. In addition, the respondents should not be distracted. That is why the interviews will be conducted in a separate room where there can be no distraction from external stimuli. It is also important to make the questions as open as possible. The respondent should decide for themselves what is important to tell and they have to give their own opinion, without being influenced in the way the question is asked.

3.3.2. Validity

During this research, validity is ensured. First, it is important to ensure that internal and external validity is guaranteed. An overview of this can be found in Table 6.

Table 6. Internal and external validity

Type	**Wording**	**Link to this research**
Internal validity	This concerns the method of approach. • Use a fixed interview schedule (with fixed questions in a fixed order). • Conduct all interviews under the same conditions.	During the interviews, the same questionnaires were asked to the management and controller, and the same questionnaires were asked to the employees from the different departments. This makes it possible to compare whether the answers given correspond to each other.
External validity	Do the results also apply to similar situations? To what extent can this research be generalized to other companies?	Because this research is specifically aimed at Zuivelhoeve, external validity may come under pressure.

Second, it is important to ensure that all costs are included in the cost price calculation in order to guarantee validity. In order to check this, a checklist will be made together with the controller with the costs which are involved. This makes it possible to ensure that all costs are included in the calculation during this research. Afterward, the calculation will be reviewed with the controller so that it can be validated that all costs are included in the cost price calculation. Third, triangulation will be used. Triangulation refers to the application and combination of several research methods in the study of the same. In this research, triangulation will be used by comparing the results with the theory.

4. Results

In this chapter, the results of this research are described. More specifically, it will be described whether it is beneficial for Zuivelhoeve to implement ABC and why. First, the current cost calculation of Zuivelhoeve is discussed. Second, factors that determine the implementation of ABC are discussed. Third, the feasibility of ABC within Zuivelhoeve is described. Fourth, the proposed solution is explained.

4.1. The current situation of cost calculation

In the current situation, a cost price calculation is requested from product management or from the sales department. Each product has its own cost price. In other words, the cost price is not the same for similar products. This is due to the costs of the recipe. Production costs and other direct costs are calculated per product group (For example, all 800 gram Boer'n Yogurt is a product group). The cost price calculation is calculated by the controller and consists of the following components:

1. *Product costing:*

The direct material costs are calculated based on the recipe and packaging costs. These costs are achieved by calculating a standard failure rate over the entire recipe. The failure rate is the amount of raw material that is lost for various reasons, for example, strawberry base that is left behind in the pipeline.

2. *Direct costing:*

The direct costs consist of setup costs for manufacturing, costs for filling and packing, variable logistics costs and variable distribution costs. Per product group there are fixed amounts for production costs, logistic costs and distribution costs. These fixed amounts are used to calculate margins and to determine the cost- and selling prices of, for example, new flavors in the same product group. Because these costs are calculated per product group, the costs are not product-specific because every product is produced with different a line speed, has a different transport rate and a different pallet loading.

Absorption costing:

Absorption costing includes all the fixed overhead costs. Overhead costs are all costs except for direct labor, direct materials and other direct expenses; overhead costs are the same as indirect costs. The overhead costs that are included in the cost calculation for Zuivelhoeve are overhead manufacturing, overhead marketing and sales, overhead logistics, overhead in general and overhead production. However, the controller indicated during the interview that these costs are not yet allocated very well. More time is spent on direct costing than on the absorption costing part.

On top of these costs, a (profit) margin is calculated. An overview of how the current cost prices are calculated for Zuivelhoeve is shown in Appendix B.

4.2. Factors that determine the implementation of ABC

As was described in the theoretical framework, several factors can determine whether ABC is beneficial to implement within a company. It is therefore interesting to see to what extent it is interesting for Zuivelhoeve to apply ABC according to the theory. First, the condition creating factors are discussed (first category). Zuivelhoeve has relatively high amount of indirect manufacturing costs, the competition is high because there are many different desserts in the supermarkets, there is a large diversity of yogurt, custard and cottage cheese and the complexity of the production process is moderate. Thus, based on the factors cost structure, competition and diversity of products, ABC could be advantageous. As was discussed in the theory, a high degree of vertical differentiation, a low degree of centralization and a high degree of formalization indicate that the company could benefit from ABC (category 2). Based on this category of the theory, it is doubtful whether ABC is beneficial for Zuivelhoeve because the three factors are only moderately the case in this company. By investigating the third category, behavioral and organizational factors distinguished by Shields (1995), it became clear from the interviews that management would not support the introduction of ABC. In short, based on the condition creating factors, Zuivelhoeve seems to have benefit by introducing ABC. However, the behavioral and organizational factors show that ABC does not make sense within Zuivelhoeve. For an overview, see Table 7.

Table 7. To what extent is ABC applicable within Zuivelhoeve (Based on Malmi (1999), Schoute (2009) and Shield (1995) combined with own contribution)

Phase	**Category**	**Factor**	**The case at Zuivelhoeve?**
1. Initiation	Condition creating factors	Cost structure	There is a relatively high amount of indirect manufacturing costs.
		Competition	The competition is high because there are many different desserts in the supermarkets that consumers can choose from. Examples of competitors: Campina, Almhof, Mona, but also desserts from private brands. Snacks such as sultana can also be seen as competition.
		Diversity of products	Zuivelhoeve only produces desserts, but a large diversity of desserts: cottage cheese, yogurt, custard, in different flavors. In total, there are more than 140 different products.

		Complexity	The complexity of the production process is moderate. The operation of the production machines can be taught to the production staff within a few weeks.
	Structural factors	Vertical differentiation	There are three hierarchical levels under the general director.
		Centralization	Control is in the hands of the directors (5 persons) within the company.
		Formalization	Standardized within production, not within other departments; activities are very varied here.
	The behavioral and organizational factors distinguished by Shields	Top management support	There is no support from the top management because the management has no faith that ABC will work.
2. *Adoption* 3. *Adaption* 4. *Acceptance* 5. *Routinization* 6. *Infusion*		Linkage of cost management system to competitive strategies	Not yet. Could be applied.
		Linkage of cost management system to performance evaluation and compensation	Management itself does not have confidence in ABC, so they will not encourage employees.
		Sufficient internal and external resources	Yes, but the management would not want to spend it on ABC because they think it will not deliver added value.
		Training in designing, implementation and cost management	Yes, but the management would not want to spend it on ABC because they think it will not deliver added value.

		Non-accounting ownership	Yes, but the management would not want to spend it on ABC because they think it will not deliver added value.
		Consensus about and clarity for the objective of management systems	Yes, but the management would not want to spend it on ABC because they think it will not deliver added value.

4.3. The feasibility of ABC within Zuivelhoeve

The qualitative research shows that it is difficult to apply ABC within Zuivelhoeve. The main reason for this is that activities cannot be properly attributed to specific products. To be able to introduce ABC within a company, it is important that most of the work (activities) is attributable to specific products. In the theory, it is described that departments such as purchasing and marketing incur costs and perform activities that can be attributed to a certain product. However, at Zuivelhoeve this is not the case because most departments cannot measure how much time they spend on an activity for a specific product for various reasons:

1. Many employees perform activities for all three subsidiary companies of the Roerink Food Family, not just for Zuivelhoeve.
2. The time component plays a role in Zuivelhoeve products.
3. Too many employees perform general tasks that are not specifically attributable to products.

These reasons are further explained below.

- *Many employees perform activities for all three subsidiary companies of the Roerink food family, not just for Zuivelhoeve.*

Some departments work for all three operating companies of Roerink Food Family, so for Zuivelhoeve, De Dessert Meesters (DDM), and the store companies. The purchaser indicated during the interview that he is purchasing from one supplier for the several operating companies of Roerink Food Family and several products at the same time. Therefore, there are relatively few different raw materials in comparison to the end products. Because some of the employees of the Roerink Food Family work for several subsidiaries and several products at the same time, the distribution of costs based on activities is too complex.

"It is already difficult to indicate how much time I work for Zuivelhoeve, how much for DDM and how much for the store companies, and then when we go one step deeper, how much time I am busy with a certain Zuivelhoeve-product cannot be tracked in time" (Purchaser, 2019).

In short, since several departments work for the three operating companies, including Zuivelhoeve, but also DDM and the store companies, it is difficult to indicate how much time is spent specifically on Zuivelhoeve-products.

- *The time component plays a role in Zuivelhoeve products.*

The marketing department is working on specific products, however, the work they do for specific products are 'projects'. These projects often last a few weeks and are then completed. This means that the marketing department does work for a different product every few weeks and not throughout the year. Therefore, the moments that they are working on the product are not consistent. Furthermore, from the interviews it becomes clear that the marketing employees spent significantly more time on a new product, such as Boer'n Yogurt Orange than on an 'older' product such as Boer'n Yogurt Strawberry. As a result, the cost price of a newer product will be higher compared to the cost price of an older product. This would mean that either a newer product is more expensive for the customers, that less margin is achieved with new products, or that there could even be made a loss when introducing new products. Because innovations are important within companies, it is not beneficial that the newest products would first make a loss before Zuivelhoeve could make a profit. With the current cost model, Zuivelhoeve does not have these disadvantages (because the costs of developing a new product are paid from the contribution margin). In short, it can be said that the time component plays a role in Zuivelhoeve products. This is because more time and money is spent on a new product compared to an older product. More specifically, when a product is new, the costs are relatively high. Six months later, this same product entails fewer costs. Because of this, it is difficult to make a good cost calculation based on ABC.

- *Too many employees perform general tasks that are not specifically attributable to products.*

Almost every department only does activities that are not specifically focused on a product, but more 'general' tasks:

- HR department: hire employees and ensure further HR-policy.
- Finance department: ensures that invoices are entered and that suppliers are paid.
- Sales department: The sales department ensures that the products arrive on the shelves. In other words, this department has different customer contracts and tries to make deals with customers. By making these deals, the sales department ensures that the products end up on the shelves of various supermarkets such as Albert Heijn. These employees are not so much concerned with specific products, but with creating and maintaining customer contacts.
- Quality department: The most important work of the quality department is to examine samples, so see if the products produced the day before meet the requirements (smell, color, taste). In addition, the quality department checks whether the production department is properly cleaned.

- IT department: the IT department supports all other departments. The most important task of the IT department is that the systems work well and that these systems continue to work well, so that employees can work easily. If employees have questions or problems with IT-related issues such as their computer or a system within Zuivelhoeve, the IT departments help them to make the system operational again.

Because almost every department is not specifically concerned with products, ABC is not very reliable. The conceptual model created in the methodology cannot be filled in by employees of Zuivelhoeve because most departments cannot 'check' a specific product in the activities they perform since most departments perform non-product-specific, general activities. Even when activities for products are performed by certain departments, it is difficult to ascertain how much time is specifically spent on a specific product. Therefore, if ABC were to be implemented within Zuivelhoeve, too many assumptions have to be made. However, because assumptions have to be made, the accuracy decreases, which eliminates the positive effect of ABC.

4.4. Proposed solution

From qualitative research, it became clear that the most suitable cost allocation method for Zuivelhoeve is the direct costing model, the cost model that has already been used. The direct costing model is less complex than the cost center method and the ABC method and does not have to be based on assumptions only, just like the surcharge method. Because the indirect costs are largely fixed costs, such as depreciation and electricity, direct costing is sufficient, because then it is most clear which costs can be actually attributed to a product. With direct costing, it is clear how much it costs to produce one product extra, so that the optimum production size can be calculated better. However, the costs that were already in the current direct costing model of Zuivelhoeve (shown in Appendix B), such as production costs (line speeds), logistics and transport costs have to be further split out. For this reason, the current model will be critically examined to see where improvements can be achieved, so that the direct costs can be made more product-specific. This can be seen as a form of ABC, but it is not, because in the proposed solution the direct costs are made more product-specific and not the indirect costs, as is the case with ABC. With the proposed solution, the indirect costs are still allocated based on the volume of products, as is the case with all traditional cost systems. From the moment the entire process from the arrival of raw materials to the delivery of the end product to the customer is analyzed, the direct costs can be allocated better. It is then clearer where and how much costs are made in each step. In short, this solution is based on the direct costing model from the literature review, but the costs that are directly involved are made more product-specific where possible. The direct costs can be divided into direct material costs, or product costing, and direct other costs.

When explaining the proposed solution it is important to know the difference between CE and HE. CE is a consumer unit. A CE (consumer unit) is one bowl with, for example, yogurt. So for example, 1 bowl of 200 grams of Boer'n Yogurt strawberry or 1 bowl of 800 grams of Boer'n Yogurt strawberry are consumer units. A HE (trading unit) is a tray with several consumer units. For example, on a tray there are 12 bowls with Boer'n Yogurt of 200 grams. This tray with 12 bowls is a HE. These HE's (trading units) are sold to customers of Zuivelhoeve, such as the supermarket Albert Heijn.

1. **Direct material costs**

The material costs are allocated to the products based on the recipe. In other words, the ingredients and the packaging are the direct material costs. For this, the correct failure rate per ingredient must be taken into account instead of a standard failure rate. The failure rate is the amount of raw material that is lost for various reasons. One reason within Zuivelhoeve may be that, for example, strawberry base is left behind in the pipeline.

2. **Direct other costs**

The other direct costs consist of five steps: preparation of basic mix, production line, value-added logistics, logistics and transport. Several calculations are done based on sales. These are the expected sales based on the sales of the previous years. So actually based on past results it is estimated how much the 'Sales' will be. The word 'Sales' is used for the expected number of products being sold.

Step 1: Preparation of basic mix

The first step in the production process is the preparation of the basic mix. In this step, first the milk is pasteurized. Pasteurization is a process in the food industry that destroys harmful bacteria in perishable food products by briefly heating the food without changing the product too much. Pasteurization is done by production employees. Zuivelhoeve knows how many kgs of milk is pasteurized on an annual basis. It is also clear how much FTE (a full working week, fulltime-equivalent) is involved. This is because employees work x hours a year. It can then be calculated how many kg basic mix can be made per man hour. The formula for this is:

Number of kg basic mix that can be made per man hour

=

$$\frac{Number\ of\ kg\ of\ milk\ in\ a\ year}{Number\ of\ FTEs * Number\ of\ working\ days\ in\ a\ year * Number\ of\ hours\ per\ day} \quad (1)$$

The material costs are allocated to the product based on the recipe. It became clear from the interview with the controller that an improvement should be made regarding the failure rate. Currently, the percentage of all 'failures' from for example 'Boer'n Yogurt of 800 gram' is taken into account in the cost price calculation. It can be made more product specific to find out what the failure rate of the Boer'n Yogurt with strawberry taste is when it is run on, for example, the Schuy 5 (Schuy 5 is the name of a production machine). Therefore, the failure rate per product must be calculated in the cost price. This can be done as follows: Zuivelhoeve can measure how much failure rate a line has. Suppose there is a 10% failure, so for example, 10% basic mix remains in the pipeline, then an additional 10% basic mix must be made. This is important when calculating the required basic mix. This can be calculated using the following formula:

Required amount of basic mix

=

$$\frac{Amount\ of\ kg\ basic\ mix\ per\ CE * Sales\ (CE)}{(1 - Failure\ rate)} \quad (2)$$

This formula makes it clear how much basic mix is needed in total for a specific product. The number of man hours can be calculated to divide the outcome of equation (2) by the outcome of equation (1):

Amount of man-hours required to make the specific product

=

$$\frac{Required\ amount\ (kg)\ of\ basic\ mix}{Number\ of\ kg\ basic\ mix\ that\ can\ be\ made\ per\ man\ hour} \quad (3)$$

To calculate the total costs of this step, the average hourly wage of a production employee is multiplied by the number of man hours required to make a specific product:

*Total costs = Number of man hours * Hourly wage* (4)

Then the costs per CE (consumer unit) are examined. This is done by dividing the total costs by the expected sales of a specific product:

Costs per CE = Total costs / Expected sales (CE) (5)

Step 2: Production line

There are several production lines within Zuivelhoeve. People stand by this line to ensure that the products can be produced. Several products are running on one line. In other words, it may be that

first a few hours of Boer'n Yogurt strawberry 800 grams is produced on a machine (line) and that the same day Boer'n custard Vanilla 400 grams is produced on the same machine (line). An average of 15 minutes is required to change the line and change the packaging. In addition, time is required for cleaning the machine. This step can, therefore, be subdivided into 'production', 'cleaning' and 'packaging change'.

Production

People are needed for the production itself; these people stand in front of the line. In addition, people are needed who stand at the back of a line; these people fold trays. It is also important to take the break into account when calculating the costs. During a working day of 8 hours, an employee is entitled to a total of 1-hour break.

In addition, a machine has a maximum speed. For example, it is possible to make 11.000 pieces per hour of a certain product of 150 grams if the machine is running at maximum speed. However, because a machine sometimes stands still or needs maintenance, there is a line efficiency. This line efficiency is often around 70%. So if the machine could produce 11.000 pieces (CE) per hour and the line efficiency is 70%, the output could be calculated as follows:

Output per hour

=

*Number of CE per hour if the line runs at maximum speed * line efficiency* (6)

*In the example above, the output would then be 11.000 * 70% = 7.700[1].*

Cleaning

To calculate the cleaning costs, the running hours per week and cleaning hours per week must be known for a specific product. This makes it possible to calculate the cleaning time in hours per running hour per product with the following formula:

Cleaning time in hours per running hour (per week)

=

$$\frac{Cleaning\ hours\ per\ week}{Operating\ hours\ per\ week} \quad (7)$$

[1] These numbers are only used as an example, but are not the real numbers for privacy reasons.

Packaging change

As described above, the average packaging change is 15 minutes. To calculate the costs of the packaging change, it must be clear how many times a week a specific product is produced. Every time a specific product is produced, this packaging change of 15 minutes must be taken into account.

At Zuivelhoeve it is known how much the output is per product and it is also known how many hours are spent on achieving this output (production itself, cleaning and packaging change). The number of man hours per year can be calculated as follows:

$$\begin{aligned}&(((\frac{Sales}{Output\ per\ hour}) * \left(1 + \frac{Cleaning\ hours\ per\ week}{Operating\ hours\ per\ week}\right)) + \\ &(number\ of\ productions\ per\ week * Amount\ of\ time\ per\ packaging\ change * 52)) * \\ &(Number\ of\ FTE\ before\ the\ line + Number\ of\ FTE\ behind\ the\ line + \\ &Number\ of\ FTE\ break)\end{aligned} \quad (8)$$

This makes it possible to calculate the total costs using the following formula:

*Total costs = Number of man hours * Hourly wage* (4)

Then the costs per CE (consumer unit) are examined. This is done by dividing the total costs by the expected sales of a specific product:

Costs per CE = Total costs / Expected sales (CE) (5)[2]

Step 3: VAL (Value-Added Logistics)

Value added logistics is creating a higher added value in the logistics chain. Every company can ensure that products are transported from A to B, but in a market with a lot of competition, such as Zuivelhoeve, that is not enough. Companies (in this case the logistic services that Zuivelhoeve offers to its customers) therefore offer additional services. For example, they not only ensure transport but also package, weigh and label the items. In other words, extra costs are made for specific customer requirements. For example, German customers of Zuivelhoeve want HE's with three different flavors; this has to be mixed. Mixing is done manually, but there is also a robot mixer. At Zuivelhoeve it is clear what the amount of sales (number of products sold) is and it is also clear how many bowls can be mixed per hour (number of CE that can be mixed per employee times the number of FTEs). With the following formula the total number of man hours required for VAL can be calculated:

[2] These last two formulas have also been used in step 1, which is why (4) and (5) are added again.

$$\frac{Sales}{CE\ per\ hour\ that\ is\ mixed\ per\ employee * Number\ of\ FTEs} \quad (9)$$

To calculate the total costs, the total number of man hours is multiplied by the average hourly wage.

*Total costs = Number of man hours * Hourly wage* (4)

The costs per CE can then be calculated by dividing the total costs by sales.

Costs per CE = Total costs / Expected sales (CE) (5)

Step 4: Logistics

The interviews showed that there is still an improvement in how the logistics costs are passed on. In the past years, the cost price was calculated based on HE. It would be better to calculate the cost price based on pallet movements. Pallets with less HE are charged less, while the costs of a pallet remain the same when there are more HE on it. Therefore, logistics should be measured by pallet movements:

- Logistical costs are known
- The number of pallets being transported is known

This data can also be used to calculate the costs of a pallet movement.

In this step, also the VAL (special wishes of customers) will be taken into account such as mixing products (see step 3). If the products do not need to be mixed, there are fewer pallet movements than if products do need to be mixed. In both cases, there is first an 'exit' (in Dutch: uitslag) at Zuivelhoeve. The yogurt or custard is then transported to Oldenzaal using internal transport. With internal transport is meant the transport from the Zuivelhoeve in Hengelo to the warehouse of Zuivelhoeve in Oldenzaal. In Oldenzaal there is an 'entry' (in Dutch: inslag) to this warehouse. If the products are transported to the customers, there is another exit (uitslag). At the moment the products have to be mixed, there is an extra pallet movement. This is because the products then have to be transported to the mixing department and finally moved back to the rack in the warehouse. An overview is shown in Table 8.

Table 8. Pallet movements without mixing and with mixing products

	Without mixing	**With mixing**
1.	Moving a pallet / wrapping a new pallet / loading a truck for internal transport.	Moving a pallet / wrapping a new pallet / loading a truck for internal transport.

2.	Unload the truck / move the pallet to the rack.	Unload the truck / move the pallet to the rack.
3.	Loading the truck for transport to the customer (external transport).	Move pallet to mix the department.
4.	/	Move pallet to the rack again.
5.	/	Loading the truck for transport to the customer (external transport).
	These are a total of 3 pallet movements	These are a total of 5 pallet movements

The costs can be passed on in the cost price:

- It is known how many minutes an entry and an exit will cost
- It is known how many people are involved
- The hourly wage is known

In addition, it is clear for each product what the pallet stacking is. In other words, how many products can be placed on 1 pallet. From the smaller bowls (200 grams) more can be put on a pallet than from the larger bowls (800 grams)

In addition, order picking is part of the logistics costs. Order picking is the collection and preparation of orders for customers. This includes work such as printing lists, checking, and actual order picking. At Zuivelhoeve it is known how many minutes it takes to pick an order line. An order often contains several products that must be picked. On an order line there is one type of product. Therefore, the calculation must be done per order line to make the cost price more product-specific. It is assumed that one order line can be picked in an average of 3 minutes. This is the average number of minutes because one time 100 HE can be on an order line and the other time 20 HE. The order-picking costs can be calculated with the following data:

- Average number of minutes that it takes to pick an order line (3 minutes).
- Number of order lines that must be picked per week of a specific product (in HE).
- The number of sales of the specific product per year in HE.

The following formula is intended to calculate the order picking costs for a specific product:

Number of minutes that it takes to pick the products of one order line

=

$$\frac{(3*Number\ of\ order\ lines\ that\ must\ be\ picked\ per\ week\ (HE))}{(The\ number\ of\ sales\ per\ year\ (HE)/\ 52)} \quad (10)$$

The following formula can be used to calculate the number of man hours used in this logistics process for a specific product.

$$\left(Sales * \frac{Outcome\ equation\ (10)}{60}\right) + \left(\frac{Sales}{Number\ of\ CE\ on\ a\ pallet}\right) * Number\ of\ pallet\ movements * \frac{number\ of\ minutes\ per\ pallet\ movement}{60})) \quad (11)$$

To calculate the total costs, the total number of man hours is multiplied by the average hourly wage.

Total costs = Number of man hours * Hourly wage (4)

The costs per CE can then be calculated by dividing the total costs by sales.

Costs per CE = Total costs / Expected sales (CE) (5)

The costs of the above steps can also be calculated per kg using the following formula:

Price per kg = Costs per CE / Weight per CE (12)

Step 5: Transport

Internal transport:

From the Production location of Zuivelhoeve in Hengelo to the Warehouse of Zuivelhoeve in Oldenzaal is internal transport. There is a fixed transport rate per shuttle. In addition, it is clear how many pallet slots there are in one shuttle. Based on this, the cost price can be calculated using the following formula:

$$\frac{Rate\ per\ shuttle}{Amount\ of\ pallet\ places\ per\ shuttle} \quad (13)$$

With the help of this formula, it will be known how much it costs to transport one pallet of products from the production location of Zuivelhoeve (Hengelo) to the warehouse of Zuivelhoeve (Oldenzaal). Suppose a pallet full of one specific product is transported. If the result of the above formula is then divided by the number of products on the pallet, the internal transport costs per product (CE) are known.

Internal transport costs per CE = Outcome equation (13) / Number of products (CE) on a pallet. (14)

External transport:

The interviews showed that it is not only necessary to look at the margin per product, but also at the margin per customer because there are different agreements per customer. In other words, it would be nice if the rate for transport per customer could be determined. Currently, the average transportation costs of € 27 are used, while transportation costs can vary from € 19 to € 40.

"At Albert Heijn, for example, there is a relatively low transport rate, because full trucks can be sent there. But if a limited-edition flavor such as Boer'n Yogurt with liqueur 43 flavor is transported to the Superunie supermarkets, the transport rate is much higher. That is why an improvement could be made here" (Controller Zuivelhoeve, 2019).

The rates of external transport are known. It is known what the transport costs are if these products are delivered to for example the Albert Heijn:

- It is known what the transport costs are.
- It is known how many pallets are transported to a specific customer.
- It is known how many CE goes on a pallet.

Therefore it would be possible to calculate the external transport costs per customer in the future with the following formula:

$$\frac{Transport\ rate\ to\ transport\ the\ products\ to\ a\ specific\ customer}{Amount\ of\ pallet\ places} \quad (15)$$

With the help of this formula, it will be known how much it costs to transport one pallet of products from the warehouse of Zuivelhoeve in Oldenzaal to a customer such as Albert Heijn or Superunie. Suppose a pallet full of one specific product is transported. If the result of the above formula is then divided by the number of products on the pallet, the internal transport costs per product (CE) are known.

External transport costs per CE = Outcome equation (15) / Number of products (CE) on a pallet. (16)

If the cost per CE of each step is added together plus the result of equation 14 (internal transport) and equation 16 (external transport) then the final cost of a specific product is known. All costs up to and

including internal transport are included in the internal cost price. The external transport costs are included in the calculation of the cost price, but not in the internal cost price. The moment a stock valuation is done, the external cost price is not included. Thus, there is both an internal cost price and a cost price including external transport costs because the cost price including external transport costs is passed on to customers.

Zuivelhoeve has the numbers to calculate these formulas. However, due to privacy reasons (in connection with the competition, among other things) these numbers are not included in this study.

4.5. Summary

In this chapter, it is described that ABC is not a suitable costing model for Zuivelhoeve. The main reason for this is that activities cannot be properly attributed to specific products. This is because, first, many employees perform activities for all subsidiary companies of Roerink food family, not just for Zuivelhoeve. Second, the time component plays a role in Zuivelhoeve products because the cost price of a new product is higher than the cost price for the same product if it has been on the market for six months. This problem does not occur when using the direct costing model because the costs for developing and marketing new products are indirect costs that are paid via the contribution margin. Therefore, this is also a reason why direct costing is sufficient within Zuivelhoeve. Third, too many employees perform general tasks that are not specifically attributable to products. This applies to almost every employee, except for product managers and product developers. For these reasons, assumptions have to be made, as a result of which the cost price does not become more accurate if ABC were to be used, whereas that should be the major advantage of applying ABC.

This research shows that the direct costing model is the most suitable at Zuivelhoeve. However, this direct cost method can be made more product-specific and therefore more accurate. By checking which steps are actually taken during the production of products, costs can be allocated more precisely to specific products. This can be seen as a form of ABC, but it is not, because in the proposed solution the direct costs are made more product-specific and not the indirect costs, as is the case with ABC. With the proposed solution, the indirect costs are still allocated based on the volume of products, as is the case with all traditional cost systems. From the moment the entire process from the arrival of raw materials to the delivery of the end product to the customer is analyzed, the direct costs can be allocated better. The steps that are taken into account are: Preparation of basic mix, Production line, Value Added Logistics, Logistics and Transport.

5. Conclusion

In this chapter, the conclusions of this study are described. In the first section, the main findings of this study are represented. In the second section, the limitations are described. In this section, the reliability and validity are discussed. In the third section, the recommendations of this study are described.

5.1. Main findings

The purpose of this research was to investigate which cost price method is most suitable for Zuivelhoeve. The main question of this research is, therefore:
What is the most suitable cost allocation method for Zuivelhoeve to get a more accurate overview of the costs?

In general, ABC is a valuable method to apply within a company because this cost method leads to a "purer" cost price and therefore to deeper insight. For example, ABC is suitable for companies which make larger products, such as machines. These companies can more easily track how long they have been working on a specific machine and which parts are intended for this machine. However, ABC does not always work in practice. Based on this study (qualitative research), it is concluded that ABC is not a suitable cost price method for Zuivelhoeve. The main reason for this is that activities cannot be properly attributed to specific products because:

- Many employees perform activities for all three subsidiary companies of the Roerink Food Family, not just for Zuivelhoeve.
- The time component plays a role in Zuivelhoeve products.
- Too many employees perform general tasks that are not specifically attributable to products.

Because of these reasons, assumptions have to be made. As a result, the implementation of ABC within Zuivelhoeve does not provide more accuracy, while that should be the advantage of ABC.

The research shows that the current cost price model is suitable for Zuivelhoeve, but that the current model needs to be improved by making the direct costs more product-specific. Various points for improvement were suggested during the interviews. First, the failure rates of the produced products must be made more product-specific. The failure rate is the amount of raw material that is lost for various reasons. One reason within Zuivelhoeve may be that, for example, strawberry base is left behind in the pipeline. The amount of strawberry base that remains may be different from the amount of apple cinnamon base. In this way, the product can be made more specific. Second, costs can be

made more product-specific by allocating costs based on pallet movements. Third, the cost price can be improved by considering not only the margin per product, but also the margin per customer. Making the product more product-specific can be achieved by going through the process from the arrival of raw materials to the delivery of the end product to the customer. By going through this process, these points of improvement can also be taken into account. The process consists of five steps:

- Step 1: Preparation or basic mix.
- Step 2: Production line (production, cleaning, packaging change).
- Step 3: Value Added Logistics.
- Step 4: Logistics.
- Step 5: Transport.

By allocating costs using these steps, it is possible to allocate the correct costs specifically at product level. The direct cost model can, therefore, be made more product-specific by going through this process. This can be seen as a form of ABC, but it is not, because the direct costs are made more product-specific and not the indirect costs, as is the case with ABC. At the moment that major changes take place in the steps of the above process, the cost price will have to be recalculated, because otherwise, the cost price does not close with reality.

In short, although ABC is, in general, a valuable system, it is not valuable at every company. At companies in, for example, the industrial sector, where machines are built, ABC can be very valuable. Machines are usually made for a specific customer and all machines are therefore different. It may, therefore, be that the development costs for one machine are much higher than for another machine. It is also possible that the parts of one machine are very different from the parts of another machine. Moreover, at these types of companies, activities from almost every department can be tracked per product. However, because it is difficult for some companies, such as Zuivelhoeve, to keep track of the activities per product, ABC is not suitable for all companies. This is because too many assumptions have to be made concerning the time that someone is busy with a specific product, which means that the accuracy of ABC actually decreases. Furthermore, for desserts, the development costs for a new product are comparable to a product that already exists. The number of ingredients needed for yogurt, for example, is the same for all yogurts, whether it is in an 800-gram bowl or in a 150-gram bowl. So even though it was possible to keep track of the activities, applying ABC at a company such as Zuivelhoeve makes less sense, because the activities of the different product groups are not very different.

5.2. Discussion

In the first instance, the aim of this study was to design a model to apply ABC within Zuivelhoeve. Therefore, employees should initially complete a type of logbook. After that, the plan was to conduct interviews with employees to find out what employees think about ABC and how the logging went. However, because the controller said in advance that ABC is probably not going to work at Zuivelhoeve and that all employees were too busy and were likely to offer resistance, it was decided not to use the logbook anyway. Unfortunately, the accuracy of this research decreased considerably as a result. When the interviews were conducted, it appeared that almost every director, manager and employee saw no benefits in ABC within Zuivelhoeve and that this cost method is almost impossible to apply. For this reason, the purpose of this study had to be changed. Fortunately, the study could still be about a cost model, but not specifically about ABC. Because the interviews were focused on research into ABC, it was decided to first describe arguments why ABC is not applicable within Zuivelhoeve. To keep up quality, the aim of the study was to investigate which cost price method is suitable for Zuivelhoeve.

5.2.1. Reliability and validity

To ensure reliability of the data, recording equipment was used during the interviews, so that the interviews could be listened back. This means that all relevant information could be used. The interviews took place in a separate room so that the respondents could not be influenced or distracted. The information from these interviews has been typed out and it is shown how the findings were derived. In section 3.2 it is explained how the data of this study is coded. The coding process is shown in Appendix C. In addition, triangulation has been applied. Information from different internet sources and the information from the interviews were compared with each other. These measures have increased the reliability of this study.

To guarantee the internal validity, interviews were conducted with employees of different departments, so that the broadest possible picture emerged of whether ABC could be applied organization-wide. The interview questions for the financial director, financial manager and the controller, and the questions for the other departments were the same so that the results could be compared with each other. By making use of interviews, it was also possible to substantiate with arguments why ABC does not work within Zuivelhoeve. In addition, during the interviews itself, the questions could be adjusted slightly so questions could be asked about cost methods that would work within this company. If surveys were used, it was less possible to ask for arguments and the questions could not have been adjusted so easily. Furthermore, the internal validity of this research is guaranteed by going through a process from the arrival of raw materials to delivery of the end product to the

customer with the controller. Afterward, the way in which the process is described is checked again to be sure that the process has been correctly described.

5.2.2. Limitations

Some problems were still present. The findings are based on experiences and observations of specific respondents who were interviewed. It may be that if other people were interviewed, the findings would have been (partly) different. Also, the results might be interpreted differently if the same research is conducted by someone else because qualitative data is socially constructed. For these reasons, the likelihood that the same findings will be replicated if this research is repeated is uncertain, which decreases the reliability of this study. However, in order to eliminate this problem as much as possible, employees were chosen consciously. A director, manager or employee from each department was interviewed so that the results are representative for all departments that were important for this study.

In addition, external validity may come under pressure because this study was specifically conducted for Zuivelhoeve. Nevertheless, part of the results can possibly used outside of this research. Other companies can use this research to gain insight into how a cost price can be made more product-specific.

5.2.3. Theoretical contribution

The main theoretical contribution of this study is the knowledge on how to make the direct costing method more product-specific and therefore more accurate. The direct costs (except ingredients and packaging) are, in theory, often distributed equally across all products, while in this study it is described that costs per product differ substantially due to differences in failure rates, production speeds, transport rates and pallet loading. Another theoretical contribution is the knowledge that ABC is not suitable for all companies because some companies cannot keep track of activities per product. For companies where activities cannot be tracked, the cost method does not become more accurate if it is replaced by ABC. Companies where, for example, machines are built, and therefore the time that an employee is working on this specific machine can be easily tracked, ABC is better applicable. The costs of the time that an employee is busy with the machine can be passed on to that specific machine. However, for companies where activities are not specifically performed for a certain product, for instance, if activities for several products are done at the same time or if mainly general activities are performed, ABC is less applicable.

5.2.4. Practical contribution

The practical contribution of this research largely corresponds to the aim of this research: investigate what the most suitable cost price calculation is within Zuivelhoeve. This research will provide the financial director of Zuivelhoeve insight into the most suitable cost price calculation is for this company. Zuivelhoeve can use the proposed solution in section 4.4 to make the cost prices more product-specific and therefore more accurate. The practical advantages of this for Zuivelhoeve are that it is easier to check how profitable products really are and that better choices can be made. The results of this study could also be applicable to other production companies which produce retail products (in similar contexts). Costs with regard to failure rate, production speeds, transport costs and pallet loading are possibly at other production companies also different per product. These companies could then go through the process described in section 4.4 to see to what extent they can use the same method and formulas for their company.

5.3. Recommendation

Based on this study, it is recommended to Zuivelhoeve to use the proposed cost calculation to calculate the cost prices. However, a part of the numbers that have been collected to improve the direct costing model are assumptions, such as the speeds of the machines. These assumptions should be tested in the factory. This allows the cost price calculation to become even more accurate. It is therefore recommended to check in the factory whether the assumptions, for example, the speeds of the machines, are in line with reality. The proposed solution can be used to re-calculate the cost prices, but can also be used to implement in the Zuivelhoeve ERP system (M3) so that the cost prices and margins can be monitored. Any changes in the process must be calculated in order to maintain the model so that it continues to close with the reality.

In addition, it is recommended to map out for each customer which (combination) of the following options is expected to yield the most: price increase, price / quality, new concepts, product mix improvement:

- Price increase

Through a price increase, a higher return can be achieved with equal sales. Especially if the constant costs remain the same, while the price is increased, the return will be improved. Because of this, a price increase is more effective than an increase in sales. However, a disadvantage of a price increase is that the products get a less favorable competitive position and customers / products can be lost to the competition. It is therefore recommended to use a possible price increase only on strong concepts (such as Boer'n Yogurt Strawberry) so that the potential risk of loss of sales is limited.

- Price/Quality

Another possibility in improving the margin of existing products is to look critically at the pricing of the products and rewriting existing recipes. Rewriting does have an effect on the quality and taste of yogurt, custard, curd cheese or porridge. By adjusting the recipes a possible price increase may become unnecessary. In fact, a new recipe can even result in a price reduction, whereby both the margin for Zuivelhoeve can rise and the purchase price for the customer decreases. This reduced purchase price can, in turn, result in favorable pricing in the supermarket, which may increase sales.

- New concepts

To keep up with the competition, it is important to introduce new, successful concepts. This strengthens the position within the current customer portfolio and gives the sales department a better negotiating position with new customers. This allows growth to take place both inside and outside the current customer portfolio. At this time, Zuivelhoeve is already busy developing new concepts, but the advice is to keep doing this in the future.

- Product mix improvement

After the direct costing model has been improved, it is advised to look again at the products that Zuivelhoeve produces. Once the cost price is made more product-specific, a list can be made with the products and the corresponding profit margin. Based on this list, it can be determined which products are unprofitable, so that the sales department can sell the most profitable product mix. It may be that there are several products that have only a low, but positive, contribution margin. In this case, account must be taken on the fact that not too many products will be divested because fixed costs are independent of the volume. More specifically, if the total production capacity is not optimally utilized, the fixed costs such as electricity and the depreciation costs of buildings and machines are distributed over a smaller number of products, so that the cost price per product is higher. That is why it is important to utilize the entire production capacity as long as products have a positive contribution margin (i.e. contribute to profit). Products that have a low but positive contribution margin can also generate additional revenue and contribute to improved results.

To create and maintain the most effective product mix, market research can be done to find out what the customer needs and wants are. Based on market research, it becomes clear whether the development of new yogurt, custard, curd cheese or porridge is the most useful. The costs of developing and marketing new products can be paid from the margin that is calculated on existing products. By using this margin as a budget, it is possible to continue to develop new products. The advantage of the products of Zuivelhoeve is that the process and the costs of similar products, so, for example, all 450-gram yogurts, are more or less the same. So when a new 450-gram yogurt is brought

on the market, it is relatively easy to predict how many bowls should be sold to see if a product is profitable in the long term.

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Appendices

Appendix A: Interview questions

Introduction:

For my graduation assignment I want to investigate if applying a different cost method, which is more accurate than the cost method currently used, is beneficial to Zuivelhoeve? This cost price method is called Activity Based Costing (ABC). This is a method to allocate costs to an activity. For example, it may be that you are doing work for Boer'n Yogurt Orange. The time you spend on this work must therefore be attributed to Boer'n Yogurt Orange. In short, the advantage of Activity Based Costing in general is that the "origin' of the costs can be better charted.

1) Interview management:

1. Can you describe the current cost model?
2. What do you think of the current cost model?
    - Do you find it accurate enough?
    - Do you find this cost model useful?
    - Do you think that the existing cost calculation system provides the current and adequate information about the costs of the products? Why yes/no?
3. What do you think about Activity Based Costing?
4. What do you think are the benefits of Activity Based Costing for Zuivelhoeve?
5. What do you think are the disadvantages of Activity Based Costing for Zuivelhoeve?
6. Do you think people are willing to cooperate with Activity Based Costing? So that they are willing to track the time they spend on an activity in an ERP-system?
7. To what extent do you think Activity Based Costing is advantageous to introduce at Zuivelhoeve? Why?
8. Do you think that ABC is feasible for Zuivelhoeve? If not, why not? If yes, how do you see it? Which system, etc.?
9. Would you support the introduction of ABC yourself if it were introduced? Why yes/no?

10. How many different products does Zuivelhoeve produce?
11. To what extent do you think Zuivelhoeve has competition on the market?
12. What are the main activities that are carried out when making and selling Zuivelhoeve-products?
13. Which departments are (indirectly) involved in the cost price? And why?

14. Which departments have activities that can be measured per product? (This is possible in the marketing department, for example, but in the finance department it is almost impossible to allocate costs per product).
15. Is there, in your opinion, still a way to be able to allocate costs to products from work performed in, for example, the finance department? If so, how?
16. How long has the current cost system been in existence?
17. What is the estimated total percentage of the overhead costs?

18. How do you think about applying ABC within Zuivelhoeve? Do you think that it h as added value for Zuivelhoeve? Why yes/no?
19. Suppose you divide the cost calculation into batches, would it work then?
20. To what extent do you expect that the cost price of Zuivelhoeve products differ when it is calculated using ABC?

2) Interview with controller:

1. Can you describe the current cost model?
2. What do you think about the current cost model?

- Do you find it accurate enough?
- Do you find it a useful cost model? Why?
- Do you think that the existing cost calculation system provides the correct and adequate information about the costs of the products? Why yes / no?

3. Where do the variable costs all come from?
4. Does it take approximately the same time to make several desserts per kilogram? If not, how is that possible?
5. Which departments are (indirectly) involved in the cost price? And why?
6. Which departments have activities that can be measured per product? (This is possible in the marketing department, for example, but in the finance department it is almost impossible to allocate costs per product).
7. Is there, in your opinion, still a way to still be able to allocate costs to products from work performed in, for example, the finance department? If so how?

8. What do you think about Activity Based Costing?
9. What do you think are benefits of ABC are for Zuivelhoeve?

10. What do you think are disadvantages of ABC are for Zuivelhoeve?
11. Do you think people are willing to cooperate with Activity Based Costing? So that they are willing to keep track of their activities in an ERP system? Why?
12. To what extent do you think ABC is advantageous to introduce at Zuivelhoeve? Why?
13. Do you think ABC is feasible for Zuivelhoeve? If not why not? If yes, how do you see that? Which system etc.?

Possibly if there is a negative opinion about activity based costing:

14. Is there another cost model that fits in better with Zuivelhoeve?
15. How can the current cost model be improved?

16. Would you support the introduction of ABC yourself if it were introduced? Why yes / no?
17. How many different products does Zuivelhoeve produce?
18. To what extent do you think Zuivelhoeve has competition on the market?
19. What are the main activities that are carried out when making Zuivelhoeve products?
20. How complex is the production process?

21. How long has the current cost system been in existence? / Are there often changes in the cost model?
22. What is the estimated total percentage of the overhead costs?
23. What do you think about applying ABC within Zuivelhoeve? Do you think it has added value for Zuivelhoeve? Why yes / no
24. Suppose you divide the cost calculation into batches, would it work then?
25. Do you expect that many departments do the same kind of work for the same kind of products (same number of grams, etc.?)

26. To what extent do you expect the cost price of Zuivelhoeve products to differ if it is calculated using ABC?
27. How many products are produced per month from Boer'n Yoguurt strawberry / orange? And how many private label products?
28. What preparations need to be made to be able to start producing Boer'n Yogurt? And what preparations need to be made for private label desserts?
29. How many products are produced from Boer'n Yogurt strawberry / orange in a month? And how many of private label products

3) Interview with employee departments

1. Can you give a brief description of your work?
2. What activities do you perform? To what extent does this have to do with different products?
3. On average, how much time do you spend on these activities?
4. For which products do you perform these activities? / For which types of products do you perform the most activities? (old/new, brand/private label, certain size 800gr, 400gr, 200gr). And why?
5. Do you often perform activities for a certain product? Or also often general tasks? Can you give examples of this? And can you estimate the time you spend on both types of work?
6. How much are you engaged in activities for branded products such as Boer'n Yogurt strawberry/orange? And how much with private label products?

And now more specifically:

- How many hours a week do you think you work for Boer'n Yogurt strawberry?
- How many hours a week do you think you work for private label yogurt strawberry?
- How many hours a week do you think you work for Boer'n Yogurt Orange?

7. In what extent is there a difference in activities between new products such as Boer'n Yogurt Orange and older products such as Boer'n Yogurt Strawberry in the amount of time you spend working on those products? How big is the difference? Can you explain this difference? Why do you spend more on new or older products?
8. How often do you have to perform "unexpected activities"? So activities that you have to carry out in the meantime, even though you had not planned it that day? And for what products is that usually the case?
9. What resources are needed to perform these activities?
10. Where are the largest costs for the work that you do? In the work that you perform yourself? Process cost? Material costs?
11. What do you think the benefits would be of Activity Based Costing within Zuivelhoeve?
12. What do you think the disadvantages would be of Activity Based Costing within Zuivelhoeve?
13. What are the reasons that you carry out your activities? For example, do you look at the number of sales?
14. Would you be willing to track activities in an ERP-system for ABC?
15. Are the activities that you do for product groups about the same? / to what extent is there a difference in [department]-activities between Zuivelhoeve Yogurt strawberry and Zuivelhoeve Boer'n Yogurt apple cinnamon (800gr)?

16. What is the difference in [department]-activities between Zuivelhoeve Boer'n Yogurt strawberry (brand product) and private label strawberry?
17. Do you think that it is possible to place the products in batches when calculating costs?
18. Do you think ABC is feasible for ABC? If not, why not? If yes, how do you see that? Which system, etc.?
19. Do you think that ABC has added value for Zuivelhoeve? Why yes / no?

Appendix B: Current cost calculation Zuivelhoeve

Direct costing	
Preparation	
Filling and packing	
Variable logistics costs	
Variable distribution costs	+
Total Direct costing	
Margin above direct costing %	

Absorption costing	
Variable manufacturing overhead	
Fixed manufacturing overhead	
Overhead marketing and sales	
Overhead logistics	
Overhead in general	
Overhead production	+
Total Absorption Costing	
Margin above absorption costing %	

Total cost price = total direct costing + total absorption costing
A margin has been calculated on top of this cost.

Appendix C: Interview coding scheme

Interview Controller – Gender: Male – Age: 35			
Fragment	**Open coding**	**Axial coding**	**Category**
We actually calculate the products here based on what it costs to make that product specific. So that liqueur 43 yogurt for example that is on the table there. We know about which lines run, we know the speed of the lines, we know how much a change costs.	Cost price calculation so that the cost price becomes as product-specific (production department).	Based on product costing and production department.	Only based on production costs.
So we actually calculate if we have to make that product in production, what does it cost us to make that product, purely in production only. In addition, there is a piece of logistics and we take a standard amount with it, but that is not product specific.	Calculation is product specific based on production, other departments have standard amount in the calculation.	Based on product costing and production department.	Only based on production costs.
So purely in production, we look at what it costs to make that product. So how fast does the line run, how long does the line run, how many products are we going to make from a specific product, the break we know how long it lasts, the cleaning at the end of the day we know how long it lasts. We also attribute that to that product. So if it runs on the Schuy 5, 3 hours of cleaning at the end of the day. So imagine that you have an hour of production, then you charge 1/16 part of those three	Speed of the line, the time that a product is produced on the line, how many products, break and cleaning is also attributed.	All costs from production department are attributed.	Only based on production costs.

hours, because usually 16 hours of production is run, 1/16 part of that product is then charged to that product.			
And so on, you know how many euros you spend on this year's expedition, divided by the number of HEs that we make. On that basis you already charge a piece of shipping and logistics. We know transport, we know what our transport costs are. We know how many bins HEs fit on a pallet, so we immediately calculate that. So all a piece of production technology.	Expedition, logistics and transport costs are clear, however, they are not assigned product specific.	Expedition, logistic and transport costs are not product specific.	Only based on production costs.
In addition, we charge the product costing of that product. So what does a bucket cost, what does a lid cost, and what does the product in it, ingredients, cost. Those are the actual costs that we pay. So if liqueur 43 enters to the market, then it is the purchase price of the product that we charge. So there is no storage in whatever the purchasing department has spent so much time on purchasing and things like that.	The cost of the product itself, ingredients and packaging is included in the cost price calculation. However, the hours that the purchasing department is busy ordering products, for example, are not directly included in the cost price.	Hours from other departments are not attributed to cost price.	Only based on production costs.
That is ultimately the margin. You have a margin above PC (product costing) and margin above direct costing (DC). So with both product costing and direct costing you have a margin. This is the profit.	Margin above product costing and direct costing.	Margin above product costing and direct costing.	Only based on production costs.

The remainder must be paid from that margin. The profit is in that, the purchasing department, the finance department, quality, a bit of management, that must all come from the margin.	Indirect costs (other departments) must be paid from the margin. Also the profit is in the margin.	Costs from other departments are paid from margin.	Only based on production costs.
Yes, I think that's a great way for here. Because if you are going to make it more specific, you record a lot of time recording how much time someone is busy. And I do not think you can increase profitability with this. And that is ultimately the goal of the organization to be profitable. The direct costing model is okay. However, this model could be made more product specific.	The main goal is to be profitable, with so many products you can achieve nothing with using a different cost model than the direct cost model. However, the direct cost model could be made more specific.	Direct cost model is suitable.	Direct cost model is suitable.
You can set up your organization to record everything, but what do you ultimately do with it? Will you then draw other conclusions? I don't necessarily think so in this organization. What we often do is if we have calculated these products, then we have a certain margin that we then pass them on at customer level to see if a customer is profitable.	Keeping track of all costs makes no sense, it makes more sense to see if customers are profitable.	ABC makes no sense, no more insights.	No other insights with ABC.
Because basically you calculate a margin for a product and a part of the transport costs per item, that's how we have set up our booking system. If you look at a booking	Transport costs should be made more product specific because there are customers who only go half a pallet of products.	Transport costs can be attributed more accurate.	Improvement in current cost price calculation.

system, all articles have this product costing reserved, and over it comes the surcharges. There is a small percentage of what we throw over it. But sometimes we look customer-specific to see if it's right. Because you actually say there is so much HE on a pallet, and it costs so much to bring the product to the customer. But we have customers with only half a pallet going. So what we do then is just customer-specific looking at what we can make customer-specific			
From a product technical point of view, not much will be changed in the cost price. A part of logistics and distribution to the customer, you could say that we know what a pallet costs and if you compare that with the actual turnover or quantity, you can see whether the cost can be made more specific there.	Logistic and expedition costs can made more specific.	Logistic and expedition costs can made more specific.	Improvement in current cost price calculation.
In the Netherlands a pallet costs between 28 and 30 euros, whether it is worth a euro of products or 1700 euros, the pallet costs remain the same. That is the same story in Germany, where a pallet costs even more. then you are around 60 or 70 euros what a pallet costs. It is then interesting to see how high your pallet load is. We also put in much more time than before.	Interesting to look at pallet load. No other insights with Activity Based Costing.	No other insights with ABC	No other insights with ABC.

With activity based costing you can attribute all activities to the product, but do you come to other insights, I wonder? I don't think it's possible here			
I think ABC is an excellent method, but this method is better with a smaller number of articles. We have 140 SKUs (articles) Here are 140 different articles, if you want to allocate everything to those 140 SKUs, that is almost impossible.	ABC excellent method, but not possible within Zuivelhoeve because of too many products.	Difficult to implement ABC because of too many products.	Too many different products.
The sales department is busy with one product and then with another product. Yes, if you want to attribute all of that, you spend so much time recording, and the insights you get with it don't change very much. If you have a different type of organization, where, for example, 6 machines are built. then you still have a lot of competition and different products, but then it is much clearer. But with a company where you have so many different SKUs, and so many different customers, the red tape is much more and at the bottom it does not provide much more insight.	Soo much time to record activities and insights do not change much.	Insights do not change much, too many products.	No other insights with ABC.
The cost prices will differ slightly with ABC. In sales, for example, I think that one product gets more attention than the other, but this is also a bit in our positioning. We know basically, with	Due to the positioning of Zuivelhoeve, the one product where more hours are spent on marketing and sales, for	Application of ABC makes no sense because of positioning	No other insights with ABC.

private label we accept a lower margin than branded products, and at OOH we also need a higher margin, we also have more sellers on that. But to really start asking people how long they have been working with a certain product or with a certain customer, then you really go into depth.	example, has more margin. That is why branded products and OOH products are also more expensive.		
Yes indeed, because how should sales, for example, do that? Should sales keep track of I have been working with bid food and I have been with that customer, that is just so difficult.	Difficult to implement ABC because of too many customers and too many products.	Too many customers, too many products.	Too many different products.
cost price calculation in batches could be possible, but then you have to set up entire administrative processes for this, and then everyone would have to keep track of how long it has been with 800 grams of products. And what added value does it have? I wonder if it has much added value.	Set up entire administrative processes for this, and everyone has to track. No added value to implement ABC at Zuivelhoeve.	ABC has no added value to Zuivelhoeve (no more insights).	No other insights with ABC.
At Zuivelhoeve there is approximately 20 percent overhead costs. To attribute this precisely, you have to break it down completely to, for example, the HR department, IT, the financial department, and that is almost impossible to do, especially since these departments are not specifically concerned with certain products.	Overhead costs are 20 percent. To attribute these costs precisely is almost impossible because these departments are not specifically concerned with certain products.	Departments not specifically concerned with certain products.	Too many different products.

Activity based costing is a very nice method, but I think it can only be applied to a company with fewer different products.	ABC can only be applied at companies with fewer different products.	Too many different products.	Too many different products.
you could look at this are my finance costs, I have more work with one product than the other, and if you don't have that you could say this is my finance costs this is my budgeted revenue and I use the percentage of finance costs. For example, I have 30 million in sales, and I have 5 tons in costs, and I divide that 5 tons in that 30 million, so that you calculate the percentage. And that you then check per department whether you can apply a distribution key.	Look at finance costs and budgeted revenue and then divide the finance cost by the budgeted revenue, and then you have a percentage.	Use a distribution key of costs.	Use distribution key of costs.
In other departments, such as the purchasing department, allocating costs more precisely does not have much added value, I think. We now have a purchasing department, and we have finance. We do look at the departments themselves to see whether it can be done more efficiently and better, but it is not handy to attribute that to the product.	It is looked into whether departments can be set up more efficiently, but it is not convenient to include the costs that for example the purchaser is specifically involved with a product in the cost price.	It is not convenient to use ABC.	Too many products, different subsidiary companies.
The margin of your product must simply be sufficient to cover the rest of the costs.	Margin have to cover rest of the costs.	Direct costs with margin is better methodology.	Direct cost model.

The current cost can also be better. If you look at 10 years ago a lot was done. They then looked at Schuy 5, for example (a machine for making dairy-based yogurt and custard) had a product yield of that much. Much less attention was paid to order size and things like that and we have really made a translation there in recent years. Yes nice and nice, but this product has a smaller batch, so relatively more changes and so are needed, and therefore more costs. So a translation has already been made there	In recent years, order size has been taken more into account when calculating the cost price	Know order size when calculating costprice.	Improvement in current cost price calculation.
But where a major translation could still be made is in the failure rate. What we do now with the failure is the percentage of everything. If there is Boer'n Yogurt, from the system we can only get a percentage a percentage of Boer'n Yogurt failure rate in general. In fact, a translation should still be made. So what is the failure percentage of the Boer'n yogurt Strawberry if we run it on Schuy 5, because then you can make it even more product specific.	Attribution of failure rate must be improved. Now there is a standard failure rate of all Boer'n Yogurt in general. However, that is not product specific.	Attribution of failure rate must be improved.	Improvement in failure rate.
It may be that you run larger batches on one line than on the other. For example, if you run smaller batches	There is a higher failure rate when smaller quantities are made.	Failure rate is now one large item.	Improvement in failure rate.

on the Hamba (which is another machine in the production), then you will have a higher dropout percentage than if you run larger batches. We now include that failure rate as one large item.	Failure rate is now one large item.		
And with new flavors, such as the liqueur43, you really look at what it costs product specific. Just like with yogurt, the average failure rate is simply taken. So it is quite possible to make a move there, because it could be that the Boer'n yogurt strawberry can be made cheaper, because they are actually filled in large quantities.	Boer'n Yogurt strawberry could be made cheaper when failure rate is more product specific.	Failure rate has to be made product specific.	Improvement in failure rate.
It could be that one line is better aligned than the other line In addition, pumping losses, one line has more than pumping losses than the other line. A because you have more pump heads, and B because you may have longer lines. But if the pumping losses are the same on all lines, then you can still have a difference because if, for example, a much larger batch is made on Schuy 5, much more kg, than dividing by the same number of kg of pumping loss, then you have seen it as a percentage another loss of pumping. We could say that there could still be an improvement.	Per line is different from failure rate, depends on the length of the line, but also on the amount of products that are made from a product type in a batch.	Per line different failure rate.	Improvement in failure rate.

I think it is feasible to check the failure rate per product, because that is already possible with the dessert meesters. For example, it could be that with Schuy 5 there is more or less loss of pumping. You could see this if you can see a failure rate at line level. And then you could put the prices on the market differently. Because in the basics they now take the average.	It is possible to implement failure rate per product.	Failure rate per product.	Improvement in failure rate.
And there is still a bit of improvement in how expedition costs are charged. The calculations are now based on HEs, but basically, just look at shipping and logistics, they do operations much more based on pallet movements. There could still be a piece of fine-tuning.	Calculation has to be done based on pallet movements, not on the basis of HE's.	Use calculation based on pallet movements instead of HE.	Improvement by using pallet movements.
We know the logistics costs, we know about how many pallets we need. Then we know how much a pallet movement costs. In the past year we have done this on the basis of HEs instead of on the basis of pallet movements. While the calculation based on pallet movements would be much better. Because you are actually going to charge less on pallets with fewer HEs. Now a pallet with 90 HE on a pallet has 90 x 10 cents charged, so 90 euros while a pallet with for example 160 HE so 160	Pallets should be charged the same regardless of the number of HEs on a pallet.	Use calculation based on pallet movements instead of HE.	Improvement by using pallet movements.

x 10 cents therefore gets charged 16 euros, while in the base only one pallet is picked up. So you actually don't expect that there will be much more costs to such a pallet.			
Because I think that a pallet movement will say much more than the number of HEs, but those were the insights we had at the time. So it would be nice to continue charging on the basis of pallet movements instead of HEs in the future. Because if we now calculate a cost price, and we see that there is a higher pallet load, that is actually the difference. We will then try to correct that the rate for a pallet is nevertheless the same. So there is still an improvement.	A pallet is more expensive if it has more HEs according to the cost price calculation, but in reality that is not true.		
And another improvement in the cost price calculation could be that you look at this is the margin of the product, but that you also look at what is the margin per customer, because you also have different agreements per customer. This is already being done, I am already looking at the bonuses that the relevant customers receive. In addition, could you also look at, you could determine a rate for transport per customer, because we don't have that yet.	Margin per product is clear, but margin per customer is also interesting. Therefore, it is advisable to look at margin per customer and to determine a rate for transport per customer.	Look at margin per customer and determine transportation rate per customer.	Improvement by determining the transportation rate per customer.

It is already clear what the average transport costs are, this is 27 euros, but those transport costs vary from 19 euros to 40 euros. At Albert Heijn, for example, we pay a relatively low transport rate, because we can simply send full trucks there. But if, for example, we only place the boern yogurt liqueur 43 with the Superunie members, then you have a much higher transport rate. You could therefore make an improvement in that. So you could think about what this is what we are going to do, and we also want to know which customers we are going to do it with.	Transport price is different per customer. Therefore, it is interesting to determine a transport rate per customer in the cost price calculation.	Determine a transport rate per customer.	Improvement by determining the transportation rate per customer.
This means that you have to ask more from certain customers, or that certain customers yield less margin. So if you wanted the same margin, then you would have to ask more for customers with relatively high bonuses and relatively high transport costs, to earn the same amount at the bottom of the line.	Ask more money if the transport costs are high if you want the same amount at the bottom of the line.	Different transport rate per customer.	Improvement by determining the transportation rate per customer.
So there could still be an improvement, in particular on the cost price calculation that we are doing now and you should actually try to implement that in the system. So that you actually say of, we now do an average surcharge on transport. But that you actually just	It could be more specific to calculate the surcharge based on the number of pallets that go to a customer.	Surcharge based on number of pallets.	Improvement by determining the transportation rate per customer.

say I know how many pallets go to a customer and I calculate the surcharge based on the number of pallets that go to a customer.			
Now we still correct for transport, a part of expedition. For example, if you have a customer for whom you have to pack a pallet, or you have a customer who has only ordered 3 trays, there is already a difference in terms of shipping costs.	Correction for transport and expedition at this moment, while this can also be calculated more specifically in the cost price.	Transport and expedition can be calculated more accurate.	Improvement by determining the transportation (and expedition) rate per customer.
With all those cost price methods such as activity-based costing you always have to ask yourself, okay I'm going to do this, what will it bring me? What insights does it provide me with? And is it worth it to me to capture it that way? Because activity-based costing is just another way of recording, and what does that yield?	ABC is just another way of recoding. You have to ask yourself what it will bring you.	Consider whether ABC offers enough benefits.	No other insights with ABC.
Yes, that's true, but that's why you have to make an estimate. So how much time would I spend on it, and what insights do I expect to gain from it? And if you talk about applying activity based costing within Zuivelhoeve then you will soon come to the conclusion that applying it at Zuivelhoeve does not lead to insights that you would think well I will really invest in that.	ABC does not provide enough insight to invest at Zuivelhoeve.	ABC does not provide enough new insights.	No other insights with ABC.

If it runs on the same machine, it takes just as long to produce these two desserts in the base. But if there is a difference in run length, so if you make 1000 buckets from apple cinnamon and 2000 buckets strawberry from it, then you have a bit of cleaning and packaging change again and so on. The packaging change simply remains between 15 minutes and 20 minutes. So if you have to change the packaging because you are going to make a smaller article, the cleaning and packaging change time is in, and those 20 minutes just have to be paid. So production technically, once the machine is running there is not much difference between the production of apple cinnamon and strawberry, it does not matter much what kind of taste you put under it, namely, there is not much difference. But so in terms of cleaning, if you have a larger batch, the average rate will go down because the cleaning is spread over more products.	The same kind of products, such as yogurt with a base, are also more or less the same in terms of production. The difference is in the amount of desserts that are made per time per product.	Similar products are more or less the same in terms of production.	Basically the yogurt/custards are the same.
From the marketing department, the hours that employees spend on a certain product can be better measured, because I think product managers in particular spend a certain amount of time on a certain	The marketing department is working on specific products, but probably most on new products.	Marketing department is working on specific products.	ABC is applicable within the marketing department.

product. But I think they are mostly busy with products that are new.			
And then the question is how you want to calculate it at the sales department. With sales, I think it is more difficult, because they are not so much product specific, but more about the customer and their product portfolio, so you could say how long you have been working with a certain customer and which products fall under this customer, but then it is not at product level but at customer level. But the sales department could not say how long they have been busy with products. So they could keep track of how long they have been with a particular customer. That might be interesting.	Sales department is not product specific, but customer specific. So in this department the activities per product are more difficult to measure.	Sales department is customer specific.	ABC is not applicable within the sales department.
And then you could also see how much transportation costs go to a certain customer, but it is difficult to say how much time the sales staff is internally working with a certain customer. Especially if they are small customers. Are sales team employees relatively much more time-consuming with a small customer or that such a small customer simply takes less time. If such a small customer only orders something once a year, then such a customer costs relatively much.	Transport costs can be allocated to specific customers, but it is difficult to measure the time that an employee is working with a specific customer	Difficult to measure how long an employee performs work for a specific customer.	ABC is not applicable within the sales department.

But at the product level it becomes difficult again. But you could say product development and product management that I would like you to keep track of how much time you spend on a certain product. But to then pass that on to your cost price, that is a more difficult story.	Product development and product management can track the time they are busy with a product, the sales department not.	ABC is applicable for marketing, not for sales.	ABC is applicable within the marketing department, not at the sales department.
Product developers and product managers are very busy with a certain product. You would simply have to pay for such activities from your margin. But you could check such a department on how effectively they are developing a new product, but that doesn't have anything to do with activity based costing anymore. But more with how you monitor such a department. And how much time do you spend on a new product and does that product deliver enough. If that does not yield enough, you could settle for less margin, or start saving on costs.	Activities from the departments which are indirectly involved have to be paid from the margin. Departments can be checked on effectiveness, but that has nothing to do with ABC anymore.	ABC is not applicable at Zuivelhoeve because of the activities they carry out.	Activities of most departments cannot be attributed to a specific product.
I think that in production and logistics in particular you can measure how long you have been working on a product and we now know production technology on which line and certain product runs and we do logistics based on a certain margin and there you could still make	Improvement in production and logistic costs. It makes no sense to make the other costs more specific in the case of Zuivelhoeve.	Improvement in production and logistics costs based on the current cost system.	Improvement in production and logistics costs based on the current cost system.

improvements, but then it becomes more customer-specific than product-specific.			
In addition, you could also look at how long a logistics employee has been working with a certain customer and that includes a certain product portfolio. There are interesting things in it, for example, that you don't want small customers at all, or you do. That is the question. If a small customer yields quite a lot in percentage terms. But at the moment we do not fully charge certain things, perhaps. But if you say from which department is well suited for activity based costing, that is difficult though..	By tracking activities per customer, it can be determined whether the retention of smaller customers makes sense. However, mentioning a department that is suitable for ABC is difficult within Zuivelhoeve.	It is difficult to name a department where ABC is entirely suitable.	Activities of most departments cannot be attributed to a specific product.
The problem is that there are too many different products. And with an accurate registration, yes, what are you actually doing with it. I think the method that we have now is a great method, but it can still be fine tuned. So that you can get something more out of it. We actually already capture the data. But we have to pull that out of the system and do something with it. I think that is better than applying an entirely new method.	The current method is good, but this one has to be improved.	Current method has to be maintained and improved.	Improvement in current cost price calculation.
Some people here love activity based costing, but in my opinion they don't	Activity based costing can be better applied at	Activity based costing is not	Too many different products.

really know what it means. Of course it also depends on what kind of company it is, of course, whatever you said, for example, in the industry activity-based costing can be applied better. This is much easier with large projects, but here with so many different products.	companies with less, but larger products or projects.	applicable at Zuivelhoeve because of the many products.	
Yes, go and ask the operations director how long he has been busy with everything, that is not possible. You obviously already have so many departments where you already need a sort of distribution key than because in most departments the activities cannot be assigned to a specific product. With a margin, so what we have now, you might as well get away I guess. There are also too many departments that do work for all subsidiaries of the Roerink Food Family.	There are too many departments and different subsidiary companies to have a sort of distribution key. Activities cannot be assigned to a specific product.	ABC is not applicable because of too many departments and different subsidiary companies.	Too many departments/different subsidiary companies.
In addition, you should all make assumptions about how long people have been working on a particular product, and then an assumption could be made that each product needs the same amount of time, while some products simply require less attention. Products that have been around for longer receive less	Assumptions have to be made.	Assumptions have to be made.	Based on assumptions

attention. If the products run well, the product receives less attention.			
Yes and like those yogurts with a muesli cup on top just need less attention because they are running well. So if you looked at it as a percentage, then this type of product would not be charged as much, while this is an assumption, which in turn is not justified. So then those insights that you should be able to get from activity based costing do not deliver anything at Zuivelhoeve.	By making assumptions, for example, yogurts with muesli cups are allocated relatively few costs from departments, because less time is spent on this.	Basing on assumptions does not make the cost calculation more accurate.	Based on assumptions.
At the base, Zuivelhoeve has a lot of competition. With out of home the competition will be less, because we are only a big one with Boermarke. Out of home supplies a lot to hospitals and other large healthcare institutions. And those were mainly the small containers that are delivered. In recent years, however, healthcare institutions have become more of a living room, so that smaller bowl are needed less and there is a demand for liter packs. And then the Campina and the private brands are our competitors again. And for the rest, we have enough competitors in retail. Just look at Campina, private brands, Almhof and all those kinds of brands, Alpro, these are all big	Zuivelhoeve has a lot of competition, especially in retail. Within out of home it was not too bad, but this competition is also increasing due to the demand for liter suits within healthcare institutions. It is difficult to remain distinctive.	A lot of competition, especially in retail.	Lots of competition.

competitors for Zuivelhoeve. It is difficult to remain distinctive.			
Because we were distinctive with BOER'N yogurt, but Campina has also something with BOER'n nowadays. So to remain distinctive in this is difficult. You have a lot of competition, so you have to stay sharp with that. That is why it is important that new products keep coming.	It is important to remain distinctive because of the amount of competition there is.	The amount of competition is high, therefore Zuivelhoeve must remain distinctive.	Lots of competition.
The brand name custard is registered in Germany, so there is less competition with custard. But then it is still difficult because of course you are not only competing with dairy products, but also with other desserts and snacks. So if you look at that, yes, there are many snacks. So yes if you are talking about snacks then you could even compete with sultana, liga, you name it. So yes there is enough competition.	In Germany is less competition with custard because this is registered. But also competition with other desserts and snacks.	Lots of competition, also with other desserts and snacks.	Lots of competition.
The machines themselves are not complex. In terms of maintenance and technical aspects, they are complex. But when it comes to making the products themselves. A new employee or temporary workers can easily be trained in a few months to get involved with production. So yes that is complex, yes you have to know how it works. But it is possible	Machines themselves are not complex, it is possible to explain the machines in temporary period, but in terms of maintenance and technical aspects the machines are complex.	Only maintenance and technical aspects of machines are complex.	Complexity of machines is moderate.

to explain the machines to a temporary worker in a certain period.			
But the complexity is already in the cost price because we do know per line how much certain things cost, such as how many people are on a line, we know. And we know that one machine needs more cleaning than the other, because it may be a bit more complex and larger and the changeover and things like that take more time. This complexity has already been calculated.	We have information about all machines (speeds, cleaning information). Calculating this in the cost price was difficult.	Complexity of machine is already is cost calculation, this was quite difficult.	Complexity of machines is moderate.
But to say that the production process itself is very complex. Yes you need the knowledge, you cannot immediately stand alone there. So yes it is complex enough to have had good staff there. But if you and I are going to follow a course, with a month or two months, then we can just stand there. So, yes, not very complex, but complex enough to have a different cost price calculation for different machines.	Good staff is needed at the machine, but everyone can learn. Because all machines require a different charge, the machines are quite complex for the cost price calculation.	Each machine has a different cost price calculation.	Complexity of machines is moderate.
Yes we just know how fast a line produces and things like that. That is not really complexity, but more how that machine runs. This is mainly in the cleaning and packaging changes. But if a machine is complex, then it might not reach the maximum speed that such a machine could achieve.	Complex machines might not reach the maximum speed. Therefore the complexity of the machines are taken into account.	Complexity of machines are taken into account.	Complexity of machines is moderate.

That is why we take the complexity of the machines into account.			

Interview Financial Manager – Gender: Male – Age: 47			
Fragment	**Open coding**	**Axial coding**	**Category**
The current cost model, we actually have 3 operating companies. The current cost model is a cost allocation model in which part of the manufacturing costs and the other departments are reimbursed from the margin on the products that are sold. With that margin, part of the manufacturing costs and the entire overhead are paid. And the part that is included in the cost price is the material costs and a part of the direct labor costs.	The current cost model is based on the material cost and part of direct labor costs. Other costs are paid from the margin.	Based on product costing and production department.	Only based on production costs.
The operators on the line are reimbursed, the line itself is included in the cost price and the raw materials, milk and the packaging, so the cup, is part of the cost price. We call this the direct costing model ourselves, so the direct costs are included in the cost price. We base our cost price on product costing and direct costing. And you also have many general costs. The buildings cost a certain amount on an annual basis. And you want to deposit that on all products that you make on an annual basis, that could be a model and we don't do that now. There is only a small part of the product calculation if you	Cots price is based on product costing and direct costing. There is only a small part of the product calculation if you compare it to all the costs that we incur, because cost from the buildings are not incurred in the cost price calculation yet.	Cots price is based on product costing and direct costing, other costs are not incurred yet.	Only based on production costs.

compare it to all the costs that we incur.			
Well no it's more which model you choose. You can also say I opt for an integral cost price and then you actually say I have 10 million in costs on an annual basis. There are variable and fixed costs and I distribute them over my products. c / n + v / w. so you have v / w that we actually do, your variable costs divided by the production. But you also have your constant costs, we as finance, no matter how much you make, we charge an x amount on an annual basis. So those are your fixed costs, which you can also distribute over your products. But we don't do that. We pay that c, the constant costs, from the margin we get from the products. That is actually the idea.	As a company, you could also opt for an integral cost price so that the fixed costs are included in the cost price. Constant costs are currently paid from the margin.	Constant costs are currently paid from the margin.	Only based on production costs.
In my opinion, the current cost model is common in the retail market. You can sell 100 pieces today and next week it can be 50 pieces. You have a good overview of the costs involved in making the product. And you can control the constant costs with your budget, that is not so difficult. So I think it's enough. I do think that the	The current cost model is common in the retail market. It is possible to control constant costs with the budget, but the current cost price model have to be made more accurate.	Current cost model is good for Zuivelhoeve, but the model have to be made more accurate.	Improvement in current cost price calculation.

calculations can be a lot more accurate, more insightful.			
This could be done by looking closely at the communication around the calculations, so which assumptions are there, you must always make assumptions, which assumptions are made therein. And these assumptions must be recorded in the finance department, or know. But they must also be familiar with commerce, but also with production. And that communication is not always good.	Communication with each other and between different departments must be improved.	Improvement through better communication with each other.	Improvement through better communication.
And of course you have to carefully monitor whether the assumptions you have made in your calculations or whether that is still in line with reality. If you assume that a Boer'n Yogurt strawberry, to make such a product, you need 1FTE on the production line during the production run, And you have that in your calculation, x minutes per yogurt, you have to keep checking and tuning whether that is indeed 1 person or that you need two people for that. It may be that this has never been looked at, so it is important to keep monitoring it. That is more the role of the operations controller.	Continue to monitor whether the assumptions you make about.	Monitoring if assumptions are in line with reality.	Improvement through monitoring if assumptions are in line with reality.

And there is still a difference of opinion, I think. Or the assumptions that have been made, or that is in line with reality. And vice versa.			
That should be checked and coordinated more often. A production leader or team leader who really knows if he makes yogurts, how many people are on the line. and you can check that again with the hours that have been set for it.	Check the assumptions you made with reality.	Monitoring if assumptions are in line with reality.	Improvement through monitoring if assumptions are in line with reality.
Activity based costing, as I understand, so that you really look at what activities you have and you charge costs for that. So then you get to look at certain activities, and estimate them for added value, and then maybe you can steer, and make improvements to, and that can lead to more profitability than having to assess the entire process in one go. I think we have 3 operating companies here that have a different set-up and they are now managed and assessed in the same way, while that is not entirely appropriate.	Applying ABC makes it easier to manage and make improvements, which can lead to more profitability. Here are 3 operating companies with a different set-up and these are now managed and assessed in the same way without fitting, then ABC could be a solution.	ABC could be a solution if the subsidiary companies could better be managed.	An advantage of ABC is to better manage a company.
But that is also possible in other ways than ABC. In any case, by looking at what are the critical success factors of those companies, and those products, and then looking, where are those success	Also other ways than ABC. Looking at critical success factors, where are those success factors influenced and how can a company be adjusted.	There are more ways to better manage a company.	No other insights with ABC.

factors influenced and how can a company be adjusted.			
De Zuivelhoeve has a considerable range of articles that are made The one demands a lot more from the organization than the other article, and you can see that reflected in the margin that it generates per product, or the costs that are allocated to it.	Zuivelhoeve has a whole range of products, and there is already a different margin for each type of product.	There is already a margin per type of product.	Margin per type of product.
Yes you can say the moment you introduce a product, then you make an investment, and then you have start-up costs. The moment the product is on the market, and that it is running, the introduction has been. But imagine, the introduction period has been, most of the costs for the introduction have been made, the question then is, are you still going to assign those costs that were made at that time to your product, yes or no. Marketing is busy with other introductions after six months, which I find difficult, of how you know that with activity based costing.	Introduction period entails most of the costs of a product. Marketing is busy with a product for a certain period.	The start-up costs of a new product are more expensive than the costs after six months after introduction.	Due to the type of products that Zuivelhoeve has, it is difficult to allocate ABC.
Marketing is an activity to develop new products. That is the advantage of the current setup. You can use the margin of the products you introduced in the past for investment in new products. And still	Advantage of current cost method is that the margin of the older products you could use for investment in new products.	Use margin of older products for investment in new products with current cost method.	Due to the type of products that Zuivelhoeve has, it is difficult to allocate ABC.

developing new products, a bit of investment, you could say, or risk storage or something like that, you just have to be able to free up the marketing costs for that. You could get that out of the margin, so you should be able to get a minimum margin there.			
And as here they have said about a margin of 40 percent, if you achieve that, you can pay a lot of costs. If your margin goes to 20 percent, then you can hardly keep the marketing department afloat and then eventually you will not get any new products. So that's why you're always left with the margin that has to be sufficient to be able to incur such costs.	Margin is important to have to have sufficient money to be able to incur costs like marketing.	Margin is important to keep develop new products.	Due to the type of products that Zuivelhoeve has, it is difficult to allocate ABC.
Assigning activities to products is it right that you assign those costs to a series of products or is it still applicable. The activities that are done vary very quickly I think. You have a lot of activities here that are very quickly focused somewhere else, on a different product, since there are so many products.	The activities that are done vary very quickly. There are too many activities and products to make use of ABC.	Too many different activities and products.	Too many different products (and activities).
On other products, or other marketing, for example, is of course company (ltd.) extending. The one time they are busy making new Zuivelhoeve products better known	People from the marketing department, among others, do work for different companies. Activities are too varied.	Several departments do work for several companies within the Roerink food family.	Too many departments/different subsidiary companies.

in the market, but the other time they are again busy with work for The dessert masters.			
Our cost price now actually only consists of variable costs, but not everything, just packaging and raw materials, and a very small piece of production equipment, and much more would be improved there. And that could be per batch or package quantity. You have a recipe per article, of course, and the recipe of the 800 gram Boer'n yogurt strawberry and that of the Boer'n yogurt and forest fruits in the addition is then different, but in the production process there is little or no difference. Filling the bucket and preparing the yogurt is all the same.	Current cost price is based on only variable costs, that should be improved.	Current cost price should be improved.	Improvement in current cost price calculation.
You can imagine if you have an 800 gram bucket, which is about that belt, and that operator who is there that costs x euro in the hour, I think that if you have the number of buckets, yes then you have to convert the price again to KG or something similar, that is of course possible. Such an operator who allocates so much euro to a bucket, operator hours, especially if you have smaller buckets, then of course that operator is just a little more expensive, because that is a bit more	The actions/activities that an operator does more for filling smaller bowls should be reflected in the cost price.	Difference in cost price between different sizes of yogurt/custard.	Improvement in current cost price calculation.

work. If you have two 400 gram buckets, that the operator does two buckets, and that the operator of the 800 gram does 1 bucket in a minute, for example, then it should not matter much. Yes, of course, the operator has slightly more actions. And you should see that in your cost price. Small packaging would be relatively slightly more expensive than large packaging.			
That depends a bit on how it is set up and what the consequences are. So what I just said about ABC, I have a certain picture with that, only I do not know how that might look like here at Zuivelhoeve. Which activities you talk about, and the layout of the activities, I don't see that as the advantage of that.	ABC do not have an advantage within Zuivelhoeve.	ABC is not applicable at Zuivelhoeve due to the many different activities.	Too many different products (and activities).
Yes you say I have a purchasing function, and it costs around 50,000 euros per year, and then I will look at what activities are all being done: keeping in touch with suppliers, and which suppliers, and which products those suppliers want and then you assign those costs to a product. You actually want to assign the purchasing function to the product. So you actually want an integral cost of your product.	Assign different functions to the product, an integral cost of the product. Another way to allocate cost to products; not only variable, but also the fixed costs.	An integral cost price other than ABC could possibly be advantageous for Zuivelhoeve.	No other insights with ABC.

All your costs, that 10 million a year for example, well it is much more, I will allocate to my products.			
Costs of the financial department could possibly be passed on in the cost price by looking at the normal occupation. I have budgeted my products for the coming year, I am going to sell so many products as expected and so many of those, that is my normal occupation. And then with finance I have 1 million euros in costs, and I divide that over those products by sales value, or by sales volume, or by KG, you can come up with something. That is however not possible on activity, then you already have that you have divided the indirect costs of finance by the number of products.	Costs of the financial department can be passed on in the cost price by looking at the costs of, for example, the financial department and dividing this by turnover value.	Costs of, for example, the finance department cannot be charged on the basis of ABC.	No other insights with ABC.
In fact, I can't really imagine in any department that you can keep track of how long activities are being done for a particular product. Yes with marketing perhaps, but only on a temporary basis, and then the question is how you can allocate the temporary costs in the cost price based on ABC.	No department that can keep track the activities for a new cost price calculation.	Not possible to track activities.	Too many different products (and activities).
Because a lot changes in terms of activities during the year, but also during the week, or during a certain period. So I don't see that as yet to	Too many changes in activities within a certain period.	Too many changes in activities.	Too many different products (and activities).

apply activity based costing within Zuivelhoeve, no.			
So yes, I don't see ABC here yet. You can say, I assume an integral cost price of an item, to see yes what I actually get from a product. Every invoice that we make also costs money, and that is not reflected in the cost price of a product or with a customer. And if you are going to make an integral cost price, or at least an improvement of the current cost method, by making this more product-specific, then you could see it.	With the help of an integral cost price, or at least an improvement of the current cost method, by making this more product-specific, you would be better able to see the costs	Make the cost price more product-specific.	Improvement in current cost price calculation.
Yes or a cost price calculation, but then for part of the functions within the company. Actually all the variable costs that you can imagine, you could apply it there. So then you talk about production equipment, all logistics, because that just depends on how much you make and how much sales you have. You can apply it there.	Cost price calculation with variable costs of production department and logistics department. This depends on how much sales you have.	Cost price calculation with variable costs of production department and logistics department.	Improvement in current cost price calculation.
However, if you calculate the costs of the other departments by dividing the costs by the number of products, then there is not much difference with the outcome of ABC I think. So applying it doesn't make much sense here, it doesn't make the insights very different.	Applying ABC does not make much sense because the insights will not be very different with the insights now.	Applying ABC does not make sense because there will be no other insights.	No other insights with ABC.

If you have to charge all the costs of new products that have to be introduced to the market for half a year, then the products are not sold, or you make a loss, because the cost when developing a new product is simply more expensive compared to an older product that is already running.	New products become too expensive if the cost price is calculated on the basis of ABC.	ABC makes no sense because of the type of products, new products become too expensive.	Improvement in current cost price calculation, too many different products (and activities).
In the model that we now use, you should also see other costs than direct and product costing. For example at AH if you look purely at what costs, then you may have a slightly higher margin than with Lidl products. If you look purely at invoicing, you would think so, because lidl invoices are sent on paper, and AH invoices are sent digitally. Anyway, if you look at Albert Heijn again, we have more sales support and we take that into account, you can see that in product costing. And we don't have those costs at Lidl because that is a private label. We have insight into things like that with the model we have now.	There should be a clear difference in products for Albert Heijn and products for Lidl, because at Albert Heijn there is sales support for branded products, and Lidl sells private label products, so no sales support is needed. The invoicing costs for Lidl is more, because the invoicing is on paper, while invoicing from AH is digital.	Costs must be made more product-specific.	Improvement in current cost price calculation.
We have the big players, such as Friesland, Campina, Alpro, but also smaller players, similar to us, if you look at AH, which also have private label products. They more or less	Zuivelhoeve has to deal with a lot of competition because of many different dessert suppliers.	A lot of competition, especially in retail.	Lots of competition.

copy the same desserts. Of course you have competition there.			
So it is the art, especially in retail, that the end customer wants your products. So that should be good enough for an affordable price. That insight, that is why we also have the sales data, so that we can see that certain products are popular, or that there is an upward trend in the sale of a certain product to see if we can do something with the price, or that we can do something, get more margin on a product. It is handy that we have that insight ourselves. If, for example, only the AH has that, and the AH tells us that the product does not run so well, while we just have a constant current that we deliver to AH, which means that AH skims a little margin from us, you obviously don't want that.	Make sure the end customer wants the product, be distinctive, work with sales data.	Zuivelhoeve has to be distinctive in the market.	Lots of competition.
Yes, so the competition is fierce. The position of us, so how do you get the product to the end consumer. We have name recognition here in the region, but I don't know how that is in the Randstad.	Lots of competition, name recognition here in the region.	A lot of competition, especially in retail.	Lots of competition.
The product costing model has been around for a long time. In the beginning it is of course important that you calculate the packaging and raw materials one by one. Then you	Enough volume and enough margin is needed to recoup the costs.	Enough margin is needed.	Only based on production costs.

have actually already reimbursed the basis. And the entire preparation, and if you only have enough volume, you will earn it back. And a part of the preparation is also charged. After all, it is a matter of having sufficient bandwidth and calculating enough margin to cover the rest of the costs.			
Yes in the beginning you can think you have fixed costs, the moment you have new products, and you want to grow, then you take those fixed costs for granted. Then you want to sell as much as possible. When the volume increases, you have enough margin in euros to pay the fixed costs. The introduction costs of new products are higher, but to stay ahead of the competition it is important to keep developing new products.	The continued development of new products is important to stay ahead of the big competition.	A lot of competition, especially in retail.	Lots of competition.
If you now look at the breakfast propositions that we have recently put on the market, if you would say I am going to calculate the full cost for that, or activity based costing, or at least calculated all costs made for those products, and that imputate and check for how much money those products are sold, then you naturally make a loss on those products. And that is logical in itself,	By using ABC, new products will cause a loss. That is not what you want to achieve with ABC as cost price model. Therefore, no better/other insights with ABC.	No other insights with ABC, only loss during the introduction phase of a new product.	No other insights with ABC.

only the idea is that the product will be a success and that in the future you will recoup those costs and then make a profit.			

Interview Financial Director - Gender: Male – Age: 46			
Fragment	**Open coding**	**Axial coding**	**Category**
We use a lot of cost price calculations. We actually have a number of different methods. One it is a question of passing on costs from companies to other companies and ultimately these costs must end up in the cost price of the product. If you look at how we do that, it can be three strokes better. It can be easier and clearer. It has not been made very clear now, in the sense that we have precisely noticed where I pay for and what are the surcharges that are now in the product.	Actually a number of methods, however, it can be better: easier and clearer. It is not precisely noticed were we pay for and what the surcharges are that are now in the product.	The cost price calculation must be made easier, clearer and more accurate than it is now.	Improvement in current cost price calculation.
By applying a clear structure. Simply apply the structure very clearly. Yesterday, I and the [financial manager] were in charge of internal invoicing. That runs through the company. That is because there is not enough structure. Legal structure, who owns, who charges what and why. And at what price. And if you have that clear, then from	Apply the structure very clearly. The internal invoicing runs through the company. This is because there is not enough structure. Based on this, a translation can be made to the actual products.	First the internal structure needs to be improved and based on that an improvement can be made to the current products and the associated cost price calculation.	A clear structure must be applied.

there you can make a translation of okay. But if I now look at the actual products, how do I determine my cost price. It starts with that.			
It is very logical to allocate all your costs to your final product. That will have to. If you were to calculate goodwill or something similar, you will need ABC to ultimately make that goodwill calculation. If you are not sure what you are doing, then your activity based costing is incorrect. You have to know what exactly you charge to be very aware of okay, I'm working on this.	It is logical to allocate all your costs to your final product. However, if you are not sure what you are doing, then your ABC is not correct.	You have to know exactly which activities there are, otherwise the calculation via ABC is of no use. It is complex.	ABC is complex.
The difference between activity based costing and direct costing is in fact nothing more than the allocation of your direct costs and your indirect costs to a product. With ABC you also calculate the indirect costs. Direct costing is, in fact, only allocating the direct costs to a product. ABC is basically distributing all your costs that you incur on a certain line over a number of products. However, implementation does take a lot of time and is complex. So it must be a valuable addition for a company.	With ABC you allocate both your direct as indirect costs to a product. With direct costing, it is only allocating the direct costs to a product. However, ABC is complex and time-consuming.	With ABC you also pass on the indirect costs to a product. However, it is complex and time-consuming.	ABC is complex.
We are also working to find a way to allocate indirect costs to the product, but I think we need do it	It is important to allocate indirect costs more accurately to products, but	The cost price model must be made more accurate, but in an	No other insights with ABC.

slightly differently, we make different assumptions and estimates, but in the end it comes down to the same thing.	in a slightly different way than ABC because in the end it is more or less the same.	easier way than ABC, because the insights are expected to be about the same.	
Yes, only then must you always allocate the cost price to a product. So if you do not know what your direct and indirect costs are for a product, you cannot sell it. The cost price calculation is then of course much more accurate.	If you include indirect costs in the cost price calculation, then the calculation is much more accurate.	Indirect costs in the calculation is more accurate.	Indirect costs in the calculation is more accurate.
In other departments, such as a marketing department, we use a distribution key. We distribute overhead over the total number of products. We do this first by dividing the costs between the legal entities and then we divide those costs into the products.	In other departments we use a distribution key. We do this by first dividing the costs between legal entities and then divide those costs to the products.	Department costs are allocated to the cost price calculation via a distribution key.	A distribution key is used when awarding indirect costs.
Yes, it is difficult to hear where you could apply ABC within Zuivelhoeve. Normally that should be possible with the Sales department, but you should also make assumptions there.	It is difficult to apply ABC within a department here, because many assumptions have to be made.	Many assumptions have to be made with ABC.	Assumptions must be made.
An advantage of ABC is Insight. The insight into the costs would of course be much better. But Zuivelhoeve already has a package for that, Qlikview, you can see a lot in that. You can already see something there at line level What we do here is a retrograde method	Advantage of ABC is insight. Now we set a standard and we check whether the hours, the consumption of material and the production quantity are within the standard within the product level or at the line	Advantage of ABC is insight, however, the insights that we already have with programs like Qlikview are also very valuable.	The direct cost method is sufficient, but should be made more precise.

We set a standard, and we look at whether the hours and the consumption of materials, etc., fall within the standard for a certain production quantity. We are actually doing that. We do that at product level or at line level. There is already a lot there though.	level. Based on this, there are already many insights via Qlikview where this information is.		
Yes, they remain assumptions. Keep assuming, you have to make assumptions. Exact science is not.	It remain assumptions.	It remain assumptions.	Assumptions must be made.
I do not know if ABC would be feasible. That depends on the level at which you want to register the activities. What you want to imput. Ultimately, you have a large body of general costs that you still have to allocate based on the overhead principle. The only question is, which costs can you distinguish from it, and can you specifically allocate it to the products? That is always the art of doing that as refined as possible. I think at Zuivelhoeve a refinement beyond the product level is not possible.	There is a body of general costs that still have to be allocated based on the overhead principle. The question is, which costs can distinguished from this, and can this specifically allocated to the products. At Zuivelhoeve, a refinement beyond product level is not possible.	There are costs that can be allocated more specifically, but via ABC this is not possible because a refinement beyond product level is not possible.	The direct cost method is sufficient, but should be made more precise.
I also think that the use of ABC does not add much to Zuivelhoeve, the insights will not be much different. It only brings a box full of complexity and time.	Insights with ABC will not be much different.	Insights with ABC will not be much different.	No other insights with ABC.

And we already look through batches. We determine a standard stock in which the costs move, and then we look at a production batch for a week, or a day, or even a certain batch. And thereby we determine, that falls within the norm, with regard to man hours, with regard to costs that have been booked on it. So we actually do that. That is why I think that ABC has little added value compared to what we are already doing.	We already look through batches. Thereby we determine if the standard falls within the norm. ABC has little added value in comparison with the current cost price calculation.	ABC has little added value in comparison with the current cost price calculation.	No other insights with ABC.
Why, because we are already working very refined down to the product level. It only has value if you want to measure certain activities throughout your organization. Especially with homogeneous work, mass production wants that better. What we actually have here is the current cost method better compared to activity based costing. We have a lot of recipes here, if you pull it out over a whole period it will be very difficult to do it properly.	We already try to work down to product level, it has no added value to use ABC in this organization. The current method fits better within Zuivelhoeve.	It has no added value to use ABC in this organization, current cost method fits better at Zuivelhoeve.	The direct cost method is sufficient, but should be made more precise. No other insights with ABC, too many different products here, ABC is complex.
I also think that finding a middle way is difficult. I think that the model that we are currently using is much more useful for us than really ABC. With DDM, for example, we could do certain costs better, such as freezing costs. How much nitrogen do I need	I think that the model that we are currently using is much more useful for us than really ABC. Check whether the standard that is adopted is still correct. At Zuivelhoeve this could	The current cost model is more useful for Zuivelhoeve than ABC, however, this direct costing model should be made more accurate, precise.	The direct cost method is sufficient, but should be made more precise.

now, what does the energy of that machine cost. To get a better grip on that, it would be better for the cost price calculation. So continuous switching with that standard, so my standard is good, my standard is still correct. This morning I also stood by the line at DDM to look at hey, I have a difference in my norm and it appears that every time it is: what happens now? Why does reality differ from the norm I have? That takes time, it takes energy, but it is really fun to do. And you learn a lot from it. At Zuivelhoeve this could ultimately also be done, making the costs more accurate, allocating certain costs better, but on the basis of our current model, the direct costing model.	also be done, making the costs more accurate, allocating certain costs better, but on the basis of our current model, the direct costing model.		
I think you get more start-up costs at the start of a cycle, so to speak. The phenomenon here is, you produce a batch this week and over an x period when there is demand again, you produce a batch again. This is especially the case with custard and yogurt that are sold less often. Other products are being produced in the meantime. This gives you a different system in terms of costs. While we now assume standard speeds, standard failure, standard waste. We	I think you get more start-up costs at the start of a cycle, so to speak with ABC. Because we measure so much, we also know a lot. ABC then tends to spread out costs. I think that has less effect, which is less useful for us than what we do now.	I think using ABC has less effect because ABC tends to spread out costs. We do not get much from this information.	The direct cost method is sufficient, but should be made more precise. No other insights with ABC.

are constantly measuring against the standard. And because we measure so much, we also know a lot. ABC then tends to spread out costs. I think that has less effect, which is less useful for us than what we do now.			
I think the cost will be even higher, and you should not want that. Well, in the end your profit and loss account is determined by several factors. But you must ensure that you achieve results as a company. If your cost price is higher, your inventory value will also be higher. This actually changes that you make a system change to ABC, then all your parameters change. Then the turnover rate of your inventory changes, your income statement changes completely. So ABC gets a lot of effect, say, on your financial household. And also look at your performance, such as to the bank or an external party as a client or creditor. That does have an impact. So it is not easy to convert.	I think the cost price will be even higher by using ABC. With a different cost price calculation, the entire financial household changed because the income statement and the stock valuation also changed. Chancing the cost price calculation is complex.	ABC is not advantageous, cost price will be even higher when using ABC. Entire financial household changes when using another cost model.	The direct cost method is sufficient, but should be made more precise.
That is why I would like to improve the current cost method by making it more accurate. This is possible by clearly seeing which steps are taken to produce a product. Step 1 is the preparation of the basic mix. The	Current cost method should be improved. Step 1 is preparation of basic mix.	Current cost method should be improved. Step 1 is preparation of basic mix.	Step 1 is preparation of basic mix.

milk comes in, this milk must be pasteurized, and the basic mix can be made based on this.			
The failure rate is also a point where improvement should be achieved. The failure rate is already calculated, but on a very general basis. I would like this calculation to be more specific in the cost price calculation.	Failure rate should be more product specific in the current cost price calculation.	Failure rate has to be made product specific.	Improvement in failure rate.
In addition, it is important that the products themselves are produced. This is done at the production department on the line. Several products are running across the line. Qlikview does contain information about how long products are on the line, how much it costs to change a line, because several products are rotated on one line per day. A machine sometimes stands still, this must also be taken into account. I think you can get most of this data from Qlikview.	Production data can be obtained from Qlikview. The production itself is an important step.	Production process itself is an important step.	The production process itself is the second step.
Logistics is an important part of the cost price calculation. At the moment, the logistics part is still fairly general. The logistics costs are all added together and shared over the total number of products. In my opinion, this product could be made more specific, because one product entails more logistical costs than the other product. The piece of logistics	Logistics is an important part of the cost price calculation which can be made more product specific. Also value added logistics (VAL) is an important part because every customer has different wishes.	Logistics costs (and value added logistic costs) should be made more product specific.	Logistic costs should be made more product specific. VAL is also an important part.

also includes a piece of Value added Logistics. This is additional costs for specific wishes. If customers want a trading unit with 3 different tastes, then an extra step must be taken in the logistics department because 3 different flavors must be placed on one trading unit, or tray. Data on this can also be collected from the production department, and perhaps also in Qlikview.			
Another aspect that could and should be made more specific is transport. Transport can be subdivided into internal transport, the transport from the production department here in Hengelo to our Warehouse in Oldenzaal. This transport is done by shuttles. We know how many pallets a shuttle can handle and we also know the rate per shuttle. It is also known how many products can be transported in one go. In my opinion, this can therefore also be made more product-specific. There is also external transport, this is the transport from the Warehouse of Zuivelhoeve in Oldenzaal to customers such as Albert heijn. Specific products go to Albert Heijn, so there is probably a way to make the costs per product more specific.	Transport costs are subdivided into internal and external transport. It is possible to find out the transport costs per product, because the rates of a shuttle / truck are known and it is also known how many products can be transported in one go.	Transport cost should be made more product specific. This can be divided into internal and external transport costs.	Transport costs should be made more product specific.

Finally, product costing must be taken into account, so the recipe, the ingredients and the packaging. This is already done with direct costing, but it must be added to the cost price. Because the factory changed last year, the costs no longer fully correspond to how it was once conceived. As a result, the costs are in part too global. Product costing can largely remain the same, because it concerns the ingredients and the packaging, but the other direct costs can be made more product specific, and it is important that this also happens so that there is a more accurate overview of the costs that a certain product entails. Based on this, it can be determined whether it is profitable to continue to produce certain products and whether all customers are profitable.	Current cost price calculation is too global. Product costing must be taken into account. This will remain the same because it concerns ingredients and packaging. Other direct costs must be made more product specific so an accurate overview can be made.	Current cost price calculation is too global. Product costing must be taken into account. Cost method should be made more precise, so accurate overview can be made.	The direct cost method is sufficient, but should be made more precise. Product costing must be taken into account.

Interview Purchaser – Gender: Male – Age: 52			
Fragment	**Open coding**	**Axial coding**	**Category**
I work for the Roerink Food Family, so actually for the three companies that belong to the Roerink Food Family, at Zuivelhoeve, DDM and Zuivelhoeve store companies I currently do all purchasing of packaging and ingredients and raw materials. So basically everything that has an item number, everything that you can hold in your hand, so a cup, milk, raw materials, everything with an item number I am responsible for buying it for the organization.	Work for three companies that belong to the Roerink Food Family (Zuivelhoeve, DDM and Zuivelhoeve store companies). I do all purchasing of packaging, ingredients and raw material for the whole organization.	Work for three companies, purchasing of packaging, ingredients and raw material for whole company.	Working for three companies, purchasing of packaging, ingredients and raw materials.
In addition, investments and cars at the request of the management. The management then asks that person needs a car, do you want to coordinate with that person what type and what color, make the best deal, based on conditions as we know it. And investments at the moment the management comes up with something, then I am often involved, I am not always involved, but sometimes it is possible that they say for a new production line, we would like you to deal is closing. In addition, I deal with energy, and certain services, not everything. Personnel that do not, [HR manager]	Also work regarding investments and cars. Also work regarding energy. So yes basically everything with an item number that we purchase 100 percent. Cars 100 percent, energy 100 percent. And the rest actually all the management asks if I want to do something.	Work regarding investments, cars and energy.	Work regarding investments, cars and energy.

does that in particular. So yes basically everything with an item number that we purchase 100 percent. Cars 100 percent, energy 100 percent. And the rest actually all the management asks if I want to do something.			
With the article number or not, but not with investments, not with energy and not with cars. 70 to 80 percent of my work does relate to article numbers, so raw material, packaging, or ingredients.	Most of the work is purchasing article numbers, so raw materials, packaging and ingredients. Investments, cars and energy is small part.	Most of work is purchasing article numbers. Small part investments, cars and energy.	Most of work is purchasing article numbers. Small part investments, cars and energy.
It is very difficult to say how long I will be needed with a specific product. This morning I had an appointment for Zentis, for example, and they deliver a little more than a million euros to the DDM and Zuivelhoeve. Then you already have that you are working for two companies at the same time. One of those parts is apple cinnamon and it is in an 800 gram bucket, but it is also in OOH, and it can also be in retail packaging. I have a hard time making a distribution, some of my time, my input for that supplier, for that company, which is then divided into DDM, Zuivelhoeve, I could split it into an 800 gram bucket with for example AppelKaneel.	Difficult to say how long needed for a specific product. Working for two companies and more different products at the same time. Difficult to make a distribution per product.	Difficult to make distribution per product, working for two companies and more products at the same time.	Work of different subsidiaries at the same time.

In terms of purchasing, I am no longer concerned with new products than with old products. That is very different, depending on the number of projects running. I am particularly concerned with non-new products. I think I only spend 5 to 10 percent of my time with new products.	Most concerned with non-new products. Only 5 to 10 percent of time concerned with new products. But that is also depending on number of projects what is running.	Most concerned with non-new products, but also depending on number of projects.	Most concerned with non-new products.
I do not spend much time on new products, because I am not a product manager. And also not a product developer. With every new product. There are of course many new suppliers who approach me for all sorts of new things, and I then refer them all to product development or product management. Because a new product starts there. The purchase comes afterwards. So the moment [Product Developer] or [Product Manager] says of I have this package, or this product, or this ingredient, and we have tested it, and this is the specification. And we want to buy this for this and this project, then I look at how much it is and when it has to be delivered and things like that and then I go into the price. So only then am I working on that. So for my day job it is 5 to 10 percent that I am working on a new product.	Not spend much time on new products because not a product manager or product developer. Suppliers for new products will be referred to product development or product management, a new product starts there.	No more than 10 percent of the time is spent on new products.	Most concerned with non-new products.

Well, 5 percent is little, but it won't be more than 10 percent.			
Yes, look at the suppliers that we have, there are quite a lot, and unwise a lot of articles, especially if you include Zuivelhoeve stores. So I am actually always very involved with that. I think 30, 30, 30 is about right. So 30 percent with Zuivelhoeve Winkelbedrijven, 30 percent with DDM and 30 percent with Zuivelhoeve. So then you have 90 percent and then 10 percent, well a little more than 10 percent .. Naja 25, 25, 25 and then 25 others. So 25 percent really pure with Zuivelhoeve, 25 percent with DDM, 25 percent with retailers and 25 percent with other things, so projects, investments, cars, or interview, haha. So everything else.	25 percent working with Zuivelhoeve stores, 25 percent working with DDM, 25 percent working with Zuivelhoeve and 25 percent working with other tasks such as energy, cars and investments.	Division of work within Zuivelhoeve stores, DDM, Zuivelhoeve and other activities.	Work of different subsidiaries at the same time.
No, that is actually not too bad. Unexpectedly not that much, no. The unexpected is, for example, if someone comes from planning or product management from someone, we have not been delivered for a new product, one cannot deliver on time, and that from the purchasing position I will then put a little more pressure on it, to do something to be realized. That	No many unexpected things. Know quite well what is coming, so planning is possible.	No many unexpected things.	No many unexpected things.

is actually the unexpected thing that arises, but not further. I know quite well what is coming, so I can actually plan it pretty well.			
The largest costs incurred in the purchasing department are my wage costs. I need relatively little material. The costs are me, and the car that I own from the business.	Largest costs are wage costs, relatively little material is needed.	Largest costs are wage costs.	Largest costs are wage costs.
I think it is not convenient for Zuivelhoeve to apply ABC. For Zuivelhoeve, you have a lot of people, overhead, but you also have logistics. You have many people who work for several companies within the Roerink Food Family. I am one of them because I work for Zuivelhoeve, DDM, retailers and also do other projects that I just said, investments, cars. So to split that up, it's already hard to say how much time do you spend on Zuivelhoeve, and how much for DDM, and then go one step deeper how much time do you spend on a certain product, which is a rough approach I think.	It is not convenient for Zuivelhoeve to apply ABC. A lot of people, overhead and logistics. Many people work for several companies. It is hard to say how much time you spend on Zuivelhoeve, and especially if it is necessary to keep track of how much people are working on a specific product.	Work of different subsidiaries at the same time. Therefore, hard to say how much to spend on Zuivelhoeve, and also to say how long working on specific product.	Work of different subsidiaries at the same time.
In short, it is already difficult to indicate how much time I work for Zuivelhoeve, how much for DDM and how much for the store companies, and then when we go one step deeper, how much time I am busy	Work of different subsidiaries at the same time. Therefore, hard to say how much to spend on Zuivelhoeve, and also to say how long working on specific product.	Work of different subsidiaries at the same time. Therefore, hard to say how much to spend on Zuivelhoeve, and also to say how long	Work of different subsidiaries at the same time.

with a certain Zuivelhoeve-product cannot be tracked in time		working on specific product.	
See if you can do that very well if you say, for example the product manager, that is just for Zuivelhoeve, and he has a number of projects that he is working on, and that is fairly clear, so if you say he is for three retail projects, for example Netherlands, for Boer'n yogurt and for the breakfast proposition, then you can quite well make an estimate as to which costs of him can be allocated to a specific, real product. but for a lot of costs that is very difficult at this company I think.	For a product manager or product developer it is possible to keep track of how long he is working on a specific product, however, for many departments that is difficult to allocate in case of Zuivelhoeve.	For a lot of costs and departments it is difficult to allocate. Tracking per specific product is almost impossible to do in the case of Zuivelhoeve.	Work of different subsidiaries at the same time.
Because you have a lot of articles, you have a lot of products, and you should make a lot of estimates, and make allocations so, and the danger is that you have a cost that is too impure that you enters the market with the wrong cost. So that you either do not earn money on the product, or that the product becomes too expensive for the customer.	Too many articles, products, and assumptions must be made. The danger is that the costs is too impure, so the product enters the market with wrong costs.	Too many products, too many assumptions that must be made. The cost price then enters the market impure.	Too many products, too many assumptions.
But I think that ABC can work well at many companies. Actually, you have more companies that have somewhat larger products and manufacture, and it can work well. But because there are many	ABC can work well at companies where larger products are manufactured. At Zuivelhoeve there are too	Too many products and three different companies. Therefore, ABC does not work at Zuivelhoeve.	Too many products, work of different subsidiaries at the same time.

different products here, and three companies.	many products and three different companies.		
And three very different companies. Logistics costs, cooling costs, freezing costs, but retail companies where you produce almost nothing but are again a trading company, means that you have to make a lot of assumptions. And makes a lot of assumptions, making it inaccurate. You actually destroy your cost price, and you shouldn't want that.	Three very different companies. Assumptions must be made, making it inaccurate, you actually destroy your cost price.	Three very different companies. Assumptions must be made.	Work of different subsidiaries at the same time, assumptions must be made.
While the cost price calculation should be more accurate with the help of ABC, but that is not the case if too many assumptions have to be made.	Cost price calculation is not more accurate because too many assumptions must be made.	Assumptions must be made.	Assumptions must be made.
No, it will still be very difficult if all 800 grams in 1. The appointment with Zentis this morning is a good example, I am talking about 12 articles, and they are in 25 of our end products, divided between two companies, DDM and Zuivelhoeve. And 800 grams is included, but DDM also includes the bowls and flutes and I know a lot. So it is hard to accurately reflect that.	It is difficult to accurately display the costs within Zuivelhoeve because the tasks are too mixed up. It is difficult to keep track of the costs per specific product.	Too many tasks are meant for different companies at the same time.	Work of different subsidiaries at the same time, assumptions must be made.
So not only the products, but also the fact that many departments are, for example, transcending it is difficult to allocate the cost price for Zuivelhoeve only. Fixed costs such as	Many products, but also many departments for which it is difficult to allocate the cost price for Zuivelhoeve only.	Many products and many departments, so difficult to allocate costs.	Difficult to keep track of the activities.

buildings can be granted, but the work of many departments is difficult.			

Interview Product developer - Gender: Male – Age: 27			
Fragment	**Open coding**	**Axial coding**	**Category**
I am a product developer and I do product development. And that is basically everything from ... yes the idea is actually generated from marketing. But basically everything from there is a concept, so there is then a product briefing, which has written marketing. And then I start working with it. So then I go to suppliers, then I go to work in the lab, so basically the entire development process until the end of the test productions and I also follow production, the first 3 productions to check whether it is all goes well and is on the right track.	Product development, everything from the idea the concept till a new product is produced during test production and the production runs smoothly. Basically, the entire development process until the end of the test productions.	Product development, the entire development process until the end of the test productions.	Product development, entire process till end of test productions.
So yes, that is quite broad. So yes, every project is a bit different, but many are comparable. So suppose you have a new foundation then that is often a bit the same thing you do. So then you contract suppliers, you start testing, you test stability and then when you approve something, you want to test it. You do this in the test production, and if that went well, then you start with a first real production, in essence.	Every project is a bit different, but many are comparable. Yogurts with different tastes actually take the same steps.	Many projects are comparable, yogurts with different tastes take the same steps.	Projects of about the same products take the same steps.
I am generally working on a specific product. Some things you can classify as general activities because,	Usually working on specific products, some things can	Usually working on specific products,	Usually working on specific product.

for example, I do what I do is enter raw material numbers and material numbers. And sometimes I do a test production, and I do that with blank cups. These blank cups have different numbers in the system than the packaged cups, so with something around it.	be classified as general activities.	sometimes general activities.	
And then for the blank cups I have to fill in those numbers, you could class that under general tasks. Because then you have that number automatically in the system, and you can use this number for other projects. And then you can order those blank cups for another project, for example. But in general I am working on a specific product. So I do things for a certain project, and then a project is one type of product I'm working on. But I am also very project based. I can easily say, I was working on that project for that product, and I spent so much time working on that project for that product. So ABC would be very easy for me. But I can imagine that it is not possible in the financial department, for example.	Blank cups can be used for all products, so activities for that are general tasks. But in general working on specific products. ABC would be easy.	Mostly working on specific products, ABC would be easy to apply.	ABC would be possible for product development.
Yes, sometimes you have a project that you are creating something, and that refers to two projects. It is not very common. However, I am	Sometimes not specific to a product, thickening of yogurt covers several products. But usually	Usually working on specific product, but sometimes activities	Usually working on specific product.

currently looking at the thickening of the yogurt and this is due to the protein enrichment project. So you have a bit of overlap there too. That is general for all yogurts, you do have a project name that has to do with yogurt. But indeed, it has an impact on the entire range, if that continues of course. It is still in its infancy now.	working on a specific product.	that covers several products.	
In short, most projects that are specific to one product. And then you have a few of those overlapping projects. But that is an exception rather than the rule. 90 percent with specific products, and then 10 percent with general tasks.	Usually working on specific product, just a few projects are overlapping.	Usually working on specific product.	Usually working on specific product.
But it also depends on which week you ask this, because like this week I spent a lot of time working on thickening that product, making yogurt just takes a lot of time. For example, I am doing a lot at the lab now before that. That already takes half a day. And then the next day the yogurt fermentes. This is a process in which bacteria and yeasts are used to make a food. In this way the milk can become yogurt. Anyway, then you are again busy with that yogurt 16 hours later.	Every week it is different, but in general it is 90 percent specific products and 10 percent general tasks.	Usually working on specific product, only 10 percent general tasks.	Usually working on specific product.

In general it is 90 percent specific products and 10 percent that general tasks.			
At the moment, most of our projects are renovations. So that is either a new flavor or the optimization of an existing flavor. For example, we will soon also be working on Boer'n Yogurt strawberry. We call these types of projects optimization projects. Just like Boer'n Yogurt honey is coming, this is also an optimization project. But then you are mainly renovating, so improving an existing product that is already on the market. But in general we are also busy with new products.	At this moment, most of the projects are renovations. Thus, improving an existing product that is already on the market. In general also busy with new products.	Work for both old and new products. When busy with old products, it is called renovation.	Work for both old and new products.
And then you have a number of projects that are very new, so it takes a little more time. We now also look at vegetable, what the options are. That is not really running right now, but it will start running at some point.	Number of projects are very new, so it takes a little more time like a project now: vegetable.	It takes more time if a project is new.	Work for both old and new products.
That takes a little more time because the project is new. You cannot take a path that you have used before for other projects. As with existing products, you know about how long that project takes, because these projects come down to the same. If there is a new yogurt, but only with a different taste at the bottom, then	For existing projects such as a new yogurt with a support, it is already known which steps should be taken.	Both new and existing projects. With existing projects, it is already known which steps.	Work for both old and new products.

the path that must be taken is well known.			
No, nowadays as many as 70 or 80 percent of the projects are renovations, optimizations, and new flavors. And then 20 percent is that you are really working on really new things, so figuring things out like we are looking at vegetable at the moment.	Most of the time existing projects: renovations, optimizations and new flavors.	Both new and existing projects. Mostly existing projects.	Work for both old and new products.
No yogurt orange is actually existing. It is not very different from what we did before. It is only a different taste that has been put under the yogurt.	Yogurt with new taste belongs to existing project.	Yogurt with new taste belongs to existing project.	Work for both old and new products.
For example, it may contain pieces that are difficult to process, or that orange underlay is thicker than normal, making it difficult to process in production. Those are the biggest problems you encounter. The rest is mainly looking from the stability is about the same, and if the taste is something that we like, then you can actually imprint it immediately. Then you are still busy for months. Because every time the taste is not good you are two to three weeks further before the supplier delivers something again. Then you are again 1 or 2 weeks further before they deliver the cost calculation. That takes quite a long time. But that is not very complicated in that sense.	In general, Boer'n Yogurt Strawberry is the same as Boer'n Yogurt Orange; it is the same project, only a different taste.	Development of new yogurt but with different taste belong to the same project.	Work for both old and new products.

So those are things we should look at, but in general the development process of the Boer'n Yogurt orange is the same as the Boer'n Yogurt strawberry at the time. It is the same idea, but with a different taste.			
Yes, I do the entire Zuivelhoeve range. So everything that needs to be developed comes to me, including private label products. Jumbo kids, double jumbo plate, yogurt and custard for Aldi, such as yogurt with top cup is coming. Things like that all come to me too.	All Zuivelhoeve-products will be developed by the product developer, also private label products.	Also private label products developed by product developer.	Work for both brand as private label products.
Well that is often different packaging, because we want different packaging for the private label products and they cause the most problems. But the product itself usually gives no problems, because often we simply opt for semi-skimmed yogurt or artisan yogurt for our private label and then Boer'n Yogurt for Zuivelhoeve itself. And then we often have the same foundation, we don't really change that. Except for Jumbo kids, this has changed slightly because it is stirred and then you have certain things that the fruit mixer is unable to do, which is stirred we do with a fruit mixer, and therefore you have to adjust that pad, not necessarily	Packaging is different for private label products, also semi-skimmed yogurt is used instead of Boer'n yogurt for private label products.	Also private label products developed by product developer. For private label, other yogurt is used.	Work for both brand as private label products.

because you do not want to work with your own deposit.			
The packaging, in fact, lies with product management. But because I also do a test production on the product that is in it, it does not matter if it is an existing product that we have already played many times, because you still want to look at how it reacts when you use this packaging. For this type of work I am also busy with the packaging. But if you look at the design of the product. so in the system, M3, I don't know if you know that?	Product development is busy with packaging, but for test productions product developer is also looking at packaging.		Product developer is purely concerned with the product itself.
Then I do the raw materials, and then they do the materials. Then it splits. They also request the packaging and I request the raw materials.	Product developer is busy with raw materials. Product management is busy with packaging.	Product developer is purely concerned with the product itself.	Product developer is purely concerned with the product itself.
Only unexpected. I often come across things that I did not expect. Or they are in a hurry out of the blue, then I think everyone has. That sometimes happens.	Often come across things that I did not expect.	Often come across things that was not expected.	Unexpected tasks.
Yes, it depends on the function, I think, but they must also have 'shit, this must be done very quickly otherwise a product cannot be marketed' for example. Then it can have much priority out of the blue, even though he knew that a certain project was playing, for example.	The projects and the associated tasks are clear in advance, but it may be that a certain task suddenly has high priority, sometimes because a product has to be put on the market faster than	The projects and the associated tasks are clear it advance, but it may be that a certain task has high priority suddenly.	Unexpected tasks.

That is a bit the same for me. I always know that the project is playing, but sometimes things are delayed that you do not expect. Then there can be a lot of pressure in one go. If you mean it that way, it can sometimes be unexpected. But in general you know which projects you have. It is not the case that the marketing department suddenly says that the project has been running for 3 months, but this product must now be developed quickly, they don't. Right from the start they communicate from, we are thinking of developing this, you would like to take a look. They often want to taste something of their own idea when it is something completely new. If it is something existing then ask them if you want to order this.	expected, or because something has been delayed.		
The advantage is that you know exactly how long the development of a certain product takes. You can include this in the calculation of the cost price. Perhaps there is another product that needs very little development. such a product then naturally has more margin. In that sense it has the advantage.	Exactly known how long the development of certain product takes, it is clear which products offer more margin.	It is clear which products offer more margin.	More accurate when using ABC.
A disadvantage may be that you are blinded by the costs of a product,	Disadvantage of ABC is that one can blinded by the	Disadvantage of ABC is that one can blinded	Disadvantage of ABC is that one can be blinded

and not necessarily by the potential. Value towards pricing. You will then surrender if you are too blinded by the costs. Of course you get that, you get everything insightful so then you have something like that development process is really too expensive, and we do not expect that it is worth it. But that is always a bit of hokus spokus. You can do consumer studies and marketing studies and suddenly they come up with something like 'Hek'snkaas' that you don't expect and that works very well. You do not know, and you cannot know in advance.	costs of a product, and not by the potential: Value towards pricing. It is difficult to estimate in advance whether a product will go well, especially if one is restrained by costs.	by the costs of a product, and not by the potential: Value towards pricing.	by the costs of a product, not necessarily by the potential.
Well, I have already done it once. So I know it's really no trouble. That is why I would be willing to keep track of the activities. You can easily type that on, for example, a Friday afternoon. But I am someone who puts all assignments and projects in my agenda, so it is a matter of taking over the activities from the agenda. It will probably take half an hour or so. People who have never had to fill something like this and do not know how much time it takes probably think of 'oops, that is way too much work', but that is not so bad. It just has to be well arranged, and it has to	A system is needed which is well and easily arranged, so that the activities can be assigned to specific products.	If the system is well and easily arranged, ABC is applicable.	An easily arranged system is needed to apply ABC.

be easily arranged. But yes, in general it is not that complicated.			
If there is a system where it is easy to keep track of, for example by checking the relevant products then it must be possible to do it. For example, we currently have to keep track of time registration in an Excel sheet. But imagine that activity-based costing would be introduced, then you will not have an Excel sheet but an easy system in the computer that you click on and you can log in to. And instead of giving everything only 8 hours a day, you divide it up. It is a bit more difficult, but if that is in your system then that will be fine, I expect.	ABC must be applicable within Zuivelhoeve if the system can be properly set up where people can fill in the activities of that week	If the system is properly set up, ABC is possible within Zuivelhoeve.	An easily arranged system is needed to apply ABC.
The activities that I do for certain product groups are also about the same, but it just depends on where you are in the process. In the beginning your development, for example, as now, we want the raspberry base not only in the 450 grams, but also in the Goei'ndag desserts. And then at the start of the process you have to choose the taste, test stability, things like that. That is generally the same. The yogurt is above it. There is a difference between low-fat yogurt and farmer's yogurt, but not much	The activities that I do for certain product groups (batches) are about the same. The start of a process is the same if you want to sell the same taste underlay in two type of sizes, then you can divide the time equally.	Activities for certain product groups are about the same. The time for this is easy to track for product development.	Activities are easy to track (also in batches).

and then testing is very similar. If you then want to enter raspberry underlay in two types of sizes, then you can divide the time equally, so 50 percent of the time spent on raspberry underlay for the 450 grams, and 50 percent busy with raspberry underlay from the Goei'ndag desserts.			
And then at a certain point you start performing test productions, and then you have to put the yogurt with raspberry underlay in the 450 grams or in the Goei'ndag packaging. So then you can easily divide this was the production for that package, it may be that the production with one package takes longer because the package is a bit more difficult, or whatever. You would then divide that afterwards.	The time of the test productions are easy to track.	The time of the test productions are easy to track.	Activities are easy to track.
Boer'n yogurt strawberry 800 grams and Boer'n yogurt forest fruits 800 grams, but you would not look at it that way quickly. Because in that case it is one product that we optimize. Then it is either the optimization of Boer'n Yogurt strawberry, or the optimization of Boer'n Yogurt forest fruits. So you can simply divide it into projects. We would never start a project with strawberry and forest fruit	Optimization for one product at a time. Product developer will never start a project with Yogurt strawberry ánd forest fruit, it is one of the two.	Optimalization of one product at a time.	Product developer is purely concerned with the product itself.

optimization, it is then one of the two.			
I do think that ABC could have added value for Zuivelhoeve. Because you have more insight into how much everything actually costs, especially with R&D. But it is just how they manage it. At Zuivelhoeve they sometimes have a lot of costs, so suppose they are going to limit very much what you can do for a project, then it could be oppressive. It is just how you deal with the system, of course.	ABC can benefit Zuivelhoeve because it provides more insight. However, if much more is going to be spent on the costs, so that it is limited what can be done during a project, then it can be oppressive.	Benefit because of more insight. However, disadvantage when it is limited regarding costs what can be done during projects.	ABC would be possible for product development.
I think it will be very difficult to estimate. You often have that much money we would like to release for a project and then you start allocating those hours, then it may be that you are completely wrong in terms of estimation, especially in the beginning. But of course that is also experience. You probably have a nice formula for that at some point, I think. So I think if it is applicable, but you have to get the people along. It is actually also change management. If people don't know it, and think that it will take a lot of time, they will resist.	ABC may be applicable. In the beginning it will take some getting used to and incorrect estimates can be made. People must be convinced that ABC works, otherwqwise they will resist.	People must be convinced that ABC works, otherwise they will resist.	People must be convinced that ABC works.
So I think if you show all employees that it makes sense to apply ABC, it is really possible. Just like with the	If you show all employees that it makes sense to apply ABC, it is possible.	People must be convinced that ABC	People must be convinced that ABC works.

OV chip card. A few years ago everyone thought it was really nothing, and almost nobody wanted to buy such a thing. But now it has become a real success. So yes who knows. I would at least bear in mind that people are often against something new if they think they have to do a lot for it and they do not know exactly what it means.	Bear in mind that people are often against something new if they think they have to do a lot for this and they do not know what it means.	works, otherwise they will resist.	

Interview Marketing director – Gender: female – Age: 32			
Fragment	**Open coding**	**Axial coding**	**Category**
Marketers invent a product. 9 out of 10 times the product is conceived by product managers, certainly for branded products. With regard to private label, the request comes from the customer. Product managers are project leaders for an NPD, a new product development. So before a product comes on the market, that entire process before that, is supervised by a product manager.	Product managers are project leaders for NPD, a new product development. So before a product comes on the market, that entire process is supervised by a product manager.	Product managers are project leaders for NPD, a new product development.	Product managers, entire process till end of test productions.
Where product development is responsible for the edible parts, the product managers are responsible for the non-edible parts, think of packaging, specification, formatting, seal, but also article numbers that it is active. That finance uses a VVP for it, that there is a purchase price, so	Product development is responsible for edible parts, product managers are responsible for non-edible parts: packaging, specification. All facets that come along within a	All facets that come along within a project are managed by a product manager.	Product managers, entire process till end of test productions.

that it can be planned and ordered. So all facets that come along within a project are managed by a product manager.	project are managed by a product manager.		
Before a project enters the organization, thus before an organization is entrusted with it, a product manager is busy looking at trends, how the market is developing, where are potential opportunities for us. So coming up with the concept, if it is not a private label, and sometimes coming up with a private label from, well what would be a good private label product for the customer. But also for brand, what would be a potential gap in the market. So reading trends reports, investigating, doing research, writing briefing, looking into the market. Everything you can think of to get inspired, so NPDs, and therefore new ideas, arise. So those are actually the activities that the product managers develop for the benefit of a product.	Before a project enters the organization, the project managers is busy looking at trends and developments. New idea's arises then.	All facets that come along within a project are managed by a product manager.	Product managers, entire process till end of test productions.
At the start of a project, it is more general in terms of activities. Suppose it is said, a Yogurt strawberry has to be introduced, then the product manager is the one who says nah we really have to introduce a Yogurt strawberry, it has	At the start of a project, activities are more general. The broad general developments lead to specific product. The product manager guide	Usually working on specific product, activities at the beginning is more general.	Difficult to keep track of the activities.

to be in a 450 gram package, there has to be an aluminum seal with a transparent lid. That is what a product manager does. For specific products, but also for broad general developments. Ultimately, the broad general developments lead to specific products. And the product manager does that to guide that the specific product is also introduced.	that the specific product is introduced.		
Product managers introduce both new products but also optimize existing products. And also both private label and branding products. Even though More time is spent on branding products.	Product managers introduce both new products but also optimize existing products. And also both private label and branding products	Both private label and branding products, also both optimization of old products, and introducing new products.	Work for both old and new products, work for both private label and brand products.
I think it is too specific to apply ABC. Then a product manager would have to log how much time they spend on one specific project, so that afterwards you can allocate those hours. But that is of course only a one-off. With ABC, those cost components are always included in that cost price, while the hours that the product manager spends on that. That is not a repeated activity. You develop it once, and you review it again in a year. But basically you are not working with the same products every week.	Too specific to apply ABC. ABC, those cost components that are always included in the cost price, are not a repeated activity. You develop a product once, and then you review it again in a year.	Too specific to apply ABC because and optimizing a specific product is done once in a while, and is not a repeated activity.	Difficult to keep track of the activities.

Sales must ensure that the products arrive on the shelf, and marketing must ensure that the products come off the shelf, so that the consumer actually buys the product. So marketing activities and a piece of product management, product management is the management of a product into an NPD and that differs per business unit, the percentage that you are busy with coming from the shelf, and that it comes on the shelf. These two tasks are different per business unit, and different per time point because you work with different introduction moments. For example, in retail Netherlands you have the opportunity to introduce that three times a year, well those moments before that introduction you are very busy with new products, and in the meantime you are mainly busy with marketing activities, so ensure that your products are the most be purchased. So if I had to say it as a percentage then we are 60% engaged in specific products, so product management, and 40% in marketing activities, so more general activities.	In percentages we are 60% engaged in specific products, so product management, and 40% in marketing activities, so more general activities.	60% engaged in specific products, so product management, and 40% in marketing activities, so more general activities.	Difficult to keep track of the activities.
We are also product manager for private label products. So that is not	Product manager for both private label products as	60% of the time is taken together for	Both private label and brand products.

just for brand, but also for private label. So we ensure that the design comes about, that the design is approved. That things are ordered. We actually do all the things I just mentioned for both brand and private label. So when I say 60% of the time, that is taken together for both brand products and private label.	brand products. So 60% of the time is taken together for both brand products and private label products.	both brand products and private label products.	
Yes in the Netherlands brand more. In Germany, brand less, private label more. So that is very dependent on the market. And with the Dessert Masters it is of course 100 percent private label.	The amount of private label products and branding products is dependent on the market.	The amount of private label and brand products is dependent on the market.	Both private label and brand products.
Yes it is more accurate, and the costs can be clearly mapped out in general. But I wonder if it is applicable here at Zuivelhoeve, since only the product managers and product developers are really working on a product, but the activities, and the products that the product managers and product developers are working on can vary per week, so it is then difficult to charge the products costs. This is therefore also a disadvantage.	ABC is more accurate, but is not applicable at Zuivelhoeve since product managers and product developers are working on a specific product, but the activities can vary per week, so then it is difficult to charge the product costs.	Product managers and product developers work on a specific products, but the activities can vary per week, so difficult to charge the cost to products.	Difficult to keep track of the activities.
Another disadvantage is, suppose you apply activity based costing in product management and product development, then there are still	Product management and product development is busy with specific products, but the other departments	Difficult to apply ABC because many departments are not	Difficult to keep track of the activities.

very many departments where activity based costing cannot be applied. Then I wonder if the cost model is still accurate.	not. So difficult to apply ABC.	busy with specific products.	
Yes, sometimes unexpected activities, when products suddenly have to be delivered faster than expected. But we always know what products we are working on, so in that respect it is not very unexpected.	Sometimes unexpected, but we always know what products we are working on, so in that respect not very unexpected.	Sometimes unexpected, but the products to work on are always expected.	Sometimes unexpected.
I think it is a lot of work to do, and I do not think it has much added value, and that it cannot really be done at Zuivelhoeve. So that would be a shame of my time, because I'm busy enough. And if I saw the added value in it, it is different, but in this case I don't really think it is applicable.	A lot of work, and not much added value. At Zuivelhoeve, ABC is not really applicable.	A lot of work, and not much added value.	No other insights with ABC.
As I look at it, ABC has no added value within Zuivelhoeve, but that is mainly because it is already difficult to keep track of the activities in my opinion.	ABC has no added value within Zuivelhoeve because it is difficult to keep track of the activities.	ABC has no added value, difficult to keep track of the activities.	Difficult to keep track of the activities.

Interview Employee Quality – Gender: Female – Age: 24			
Fragment	**Open coding**	**Axial coding**	**Category**
Here at the lab we have activities that we do. That is very different. We do microbiology. Then we go samples that were produced the day before, which we will then use. We also conduct research in which we inspect the samples, so the desserts, on smell, color and taste and on thickness. Furthermore, everyone here has their own duties. [Other employee quality] deals with the complaints, I also go to production a lot, and [other employee quality] as well. And then we will see if production is still going well. And whether it meets quality and safety there. For example, whether or not you have a hairnet. Whether the product is good for what they use.	Different activities, everyone at the quality department has its own duties regarding quality.	Different activities, not product specific.	Difficult to keep track of the activities.
And then actually not for specific products, but only general tasks. Checks must also be carried out during production. So whether the machines are properly cleaned. We then check whether the checks are carried out properly. Unfortunately, activities per product cannot be measured.	Only general tasks. Therefore, activities for specific products cannot be measured.	Only general tasks, not product specific.	Difficult to keep track of the activities.
No, one may have more controls than the other. Grab for example, they have to do an E weighting, then they have to weigh cups. And then we check whether they perform the	No difference between old and new products, or private label and brand products. Only general tasks are performed.	Only general tasks, not product specific.	Difficult to keep track of the activities.

weighting properly or not. And no difference between private label and branded products. They are really general tasks that we perform.			
And we also carry out cleaning checks. So if they have cleaned a machine after the machine has been cleaned and for sterilization, then we go to production, then we get a message, and then we check if the cleaning is done properly. So then we see if we still see product residues that they have forgotten to clean. Or then we take swaps with us. With those swaps we are going to swap the surface.	Check if cleaning is done properly. We use swaps for this. Also general task.	Only general tasks, not product specific.	Difficult to keep track of the activities.
That is, there is a kind of cotton swab inside, and there is a cover around it. And we take that type of cotton bud from the casing and then we swap a surface, for example the bottom of a filling head or the bottom, or the cup lane. And then we have a device, for which we have a meter. * In between, she picks up the swap to show what that is * Look this is a swap. This is the cotton bud I meant, and then we will swap it that way. We can use these ourselves microbiologically and the other, that device, what we use is what we call an ATP meter and it displays a number	To look if cleaning is done properly, swaps are used. If the cleaning is not done properly, and the swap gives a wrong value, the cleaning must be carried out again until the cleaning has been done accurately.	Only general tasks, not product specific.	Difficult to keep track of the activities.

and there is another standard attached to it. Under 20 is good. And between 20 and 60 is pretty good. And everything above 60 is wrong. And if it is above 60, then I say you should clean again. And after it has been cleaned again, we will swap again, so take a sample, and then measure again and if it is good, then it is good.			
At the moment as much as possible in production. We were previously in the lab a lot, and now we are in production a lot, because even when you see something, you can often improve on the spot. Instead of first investigating something here at the lab. You can also prevent it before a problem arises. And that is among other things by carrying out a cleaning check.	We are mainly working in production. It is better to prevent a problem from arising. This can be done by carrying out cleaning checks.	Only general tasks, not product specific.	Difficult to keep track of the activities.
Actually, all products that they have produced the day before, that is, produced, they put them ready for us, at the back of the expedition in the cold store. And in the morning we collect those monsters. And then we put them in the lab. And then we will divide them. Because we get four starting samples, and three in the middle, and one end. And	Samples are made from the production from a day earlier. These samples are examined.	Only general tasks, not product specific.	Difficult to keep track of the activities.

then we will divide it. I mean sharing that we are therefore conducting multiple investigations. That is why we also have several starting samples.			
Yogurt and custard is made on a machine in production, on the line. A sample is made from each custard that is run on a machine. We actually look at the taste per tank. A tank is produced from, for example, a certain yogurt, but it is possible that several tanks are produced from the Boer'n yogurt strawberry a day. We then want to have a sample from each tank.	From every tank a monster is needed to examine.	Only general tasks, not product specific.	Difficult to keep track of the activities.
So we actually get samples of all the products they produced the day before. We then get samples from that and then we divide those samples over different investigations. Including that investigation, this is called organoleptic investigation, whereby we check the odor, color, taste and thickness, which we therefore check immediately that day when we collect the samples from the expedition in the morning. And the other monsters, organoleptic is a difficult word, but that's what they call it. And the other samples, 28 days, are kept, and we will check them after 28 days. And then we have samples that we heat in those heating cabinets, we call that	Samples of all products produced the day before is needed. The samples are checked by odor, color, taste and thickness. there are also samples that are checked after 28 days.		

incubators. And we will only use it two days later.			
Yes an advantage is that you know exactly how much time you have put into a product, but can you steer towards it? I wonder. You can send it by saying I will stop the product if it costs too much. But you cannot easily ask a lot more for a product, because then you won not sell it anymore. After all, there is a lot of competition, especially within retail, so stores such as Albert Heijn. If you do not sell it, you should promote it more, by advertising. But then there are also more costs to a product. And as for us it is quite difficult to keep track, since we are not specifically concerned with products, but also with general tasks for all products, to guarantee the quality of those products.	I wonder if you can steer towards ABC. You cannot easily ask more money for a product, then you do not sell it. Furthermore, because we do general tasks, tracking activities per specific product is difficult.	Only general tasks, not product specific, no other insights with ABC.	Difficult to keep track of the activities, no other insights with ABC.
People who have to keep up with that must also see the benefits, otherwise I am sure they will not cooperate in filling in the number of hours they have spent on a certain product. Employees must therefore be convinced that they must keep track of the time and split it. If employees unravel it, then it is still of no use.	People must see the benefits and must be convinced. If employees unravel it, then it is still of no use.	People must be convinced that ABC works, otherwise they will resist.	People must be convinced that ABC works.

Anyway, I think that ABC is a good concept in general, but it is of little use within Zuivelhoeve, also because the products are too similar and there are too many products. The method of making are similar. In terms of yogurts, making is the same. The taste underneath is different, but the way it is produced is more or less the same. So I wonder if the time and effort you have to put in is useful. You try to make everything as cheap as possible, to make as much profit as possible with it. But if you have to pay close attention to the costs, I think that can be oppressive. I think quality is very important. Zuivelhoeve does not compete on price, but because they are unique and quite well known in the market.	ABC is in general good concept, but not advantageous for Zuivelhoeve. Too many products, products are more or less the same. If you have to pay attention on costs, it can be oppressive, because quality is important and costs money.	Too many products, products are more or less the same. If you have to pay attention on costs, it can be oppressive.	Too many products.
No, I do not think so. It takes a lot of time and effort, and it is very complex. And I do not think a company like Zuivelhoeve gets a lot of benefits from introducing it, so I would not do it personally. Also because in my opinion the insights do not change much, and it can even be oppressive in terms of costs. Anyway, I am not a board member so I am not in control.	I do not think Zuivelhoeve get benefit from ABC, it is complex, no other insights, even be oppressive in terms of costs.	No more insights with ABC.	No more insights with ABC.