

**THE APPLICATION OF MANAGEMENT
ACCOUNTING PRINCIPLES IN
THE
BREAD INDUSTRY: A CASE STUDY**

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ABSTRACT

A loaf of bread is a consumable product and is consumed by millions of people on a daily basis around the world. Bread constitutes the staple diet of millions of South Africans. The bread industry in South Africa has undergone a total transformation since deregulation of the industry on 1 March 1991. The deregulation led to a considerable amount of new entrants to the market which increased competition immensely. Another impact deregulation had was that the distribution channel of bread changed from cafes and medium-sized shops to large chain stores, supermarkets, spaza shops and hawkers. In the past a distributor only had limited distribution stops, but the distribution stops have increased significantly due to the changing distribution channel. This, combined with rising fuel prices, increased delivery cost significantly.

A bread factory, the object of this case study, has experienced similar increases in their distribution costs. The bread factory has numerous delivery routes and as a way to monitor these distribution costs, the bread factory calculates a delivery route contribution margin to determine whether a delivery route is viable or not. This calculation deducts the costs to service the delivery route from the income generated by the route. The production costs of bread therefore directly affect the profitability of a delivery route margin. The main ingredient of bread, namely flour, is purchased from a miller than forms part of the group that the bread factory belongs to. The transfer price at which this flour is purchased, impacts the production cost of bread directly.

The general objective of this research was to determine whether general management accounting principles were applied in the bread factory with specific reference to the financial viability of the delivery routes. The study consisted of a literature study and an empirical survey. Semi-structured interviews, using a questionnaire, were conducted with senior management of the bread factory. The results of the interviews and an examination and analysis of the financial data for Bread Factory A were used to assess the current calculation of the delivery route segment margin and to develop a model for future calculation of an accurate delivery route segment margin. Certain strategic documents of Bread Factory A were analysed to determine whether their strategy enabled Bread Factory A to gain a competitive advantage. Quotations were obtained from independent external suppliers for the supply of flour and compared with the current transfer price paid to the group supplier of flour to determine whether the transfer price was market-related.

The results showed that certain production costs were not allocated as part of cost of sales and therefore affected the calculation of the profitability of delivery routes. The delivery route calculation was not a calculation of the contribution margin of the delivery route. Furthermore, based on the quotations obtained, the transfer price at which flour is purchased from the miller is higher than the market price. Based on the results of this study, it is recommended that the bread factory uses a delivery route segment margin calculation to determine the profitability of a delivery route. A model is provided by the researcher. Furthermore, it is recommended that the holding company of the bread factory and the miller should involve both parties in the setting of the transfer price of flour. Negotiations should take place between these three parties to ensure that a more market-related transfer price is set.

OPSOMMING

Brood dien daaglik as stapelvoedsel vir miljoene mense wêreldwyd. Op 1 Maart 1991 het die broodindustrie 'n reuse metamorfose ondergaan as gevolg van deregulasie. Dit het daartoe gelei dat 'n groot aantal nuwe toetreders die mark binnegekrom het wat kompetisie aansienlik verhoog het. Die deregulasie het ook tot gevolg gehad dat die verspreidingskanaal verander het van kafees en medium-grootte winkels na groot kettingwinkels, supermarkte, negosiewinkels en smouse. Die verandering in die verspreidingskanaal het teweeg gebring dat die aantal verspreidingspunte aansienlik verhoog het en tesame met die steeds stygende brandstofpryse het dit 'n reuse invloed op aflewingskoste gehad.

Die broodfabriek wat in hierdie gevallestudie bestudeer word het die bogenoemde verhoging in aflewingskoste eerstehands ervaar. Die broodfabriek het verskeie aflewingsroetes en by wyse van monitering van hierdie kostes word die aflewingsroete bydraemarge bereken om te bepaal of 'n spesifieke roete finansiële lewensvatbaar is. In hierdie berekening word die koste om die aflewingsroete te diens afgetrek van die inkomste wat deur die roete gegenereer word. Die winsgewendheid van 'n aflewingsroete word daarom direk beïnvloed deur die produksiekoste van brood. Meel, wat die basiese bestanddeel van brood is, word aangekoop by 'n meule wat deel vorm van die groep waaraan die broodfabriek ook behoort. Die produksiekoste van brood word direk beïnvloed deur die oordragprys waarteen die meel aangekoop word.

Die algemene doelstelling van hierdie navorsing was om te bepaal of algemene bestuursrekeningkundige beginsels toegepas is in die broodfabriek met spesifieke verwysing na die finansiële lewensvatbaarheid van die aflewingsroetes. Die studie bestaan uit 'n literatuurstudie en 'n empiriese opname. Semi-gestruktureerde onderhoude is deur middel van vraelyste met die topbestuur van die broodfabriek gevoer. Die resultate van die onderhoude en die ondersoek van die finansiële verslae is gebruik om die huidige berekening van die aflewingsroete segmentele marge te beoordeel en vir die toekomstige berekening van akkurate aflewingsroete segmentmarges. Sekere strategiese dokumente van die bakkery is geanaliseer om te bepaal of die broodfabriek met die huidige strategie kompeterende voordeel behaal. Kwotasies is verkry vanaf onafhanklike verskaffers van meel om te bepaal of die oordragprys wat deur die bakkery aan die meule betaal word vir meel, wel markverwant is.

Die resultate het getoon dat sekere produksiekostes nie as deel van die koste van verkope toegedeel is nie en as gevolg daarvan is die berekening van die winsgewendheid van afleveringsroetes beïnvloed. Die finansiële lewensvatbaarheid van 'n afleveringsroete was nie gebaseer op die berekening van die bydraemarge van 'n afleveringsroete nie. Die oordragprys wat aan die meule betaal word vir aankope van meel is hoër as die markverwante prys. Volgens hierdie studie, word dit aanbeveel dat die broodfabriek 'n afleveringsroete segmentele marge gebruik om die winsgewendheid van 'n afleveringsroete te bereken. 'n Model word deur die navorser voorsien. Dit word ook aanbeveel dat die moedermaatskappy die broodfabriek en die meule moet betrek by die vasstelling van die oordragprys van meel om sodoende te verseker dat die prys meer markverwant is.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

A loaf of bread is a consumable product and is consumed by millions of people on a daily basis around the world. Bread constitutes the staple diet of millions of South Africans.

The bread industry in South Africa, as we know it today, is approximately fifteen years old. Although the South African bread industry has certainly been in existence since the first wheat kernel was milled, it has undergone a total transformation since a decision was made to deregulate the industry from 1 March 1991.

The Longman Business English Dictionary (2001, 4:127) states the following definition for **deregulate**: “to remove or reduce the number of government controls on a particular business activity, done to make companies work more effectively and to increase competition”. In contrast the Longman English Dictionary’s (2001, 4:236) definition for **regulated industry** is: “an industry that is closely controlled by the government”.

A deregulated industry is therefore not controlled by government regulation and organisations within that industry are free to set their own selling prices of their products or services.

1.1.1 Before deregulation

Until 1 March 1991 the bread industry in South Africa was regulated.

According to the General Manager of Bread Factory A, the system **functioned** as follows during **regulation**:

- Production of “government bread” was restricted to only six licensed bakers nationally (Anon, 1990:78).
- The government fixed the price per loaf of bread and on 28 February 1991 the set price for brown bread was R1.03 and R1.18 for white bread (Brand, 1991:2; Anon, 1991a:2).
- The government applied a subsidy system where a subsidy of 3.3 cents on white bread and 7.9 cents on brown bread was applied.

- A quota system was used whereby bakeries were only allowed to supply bread in specified regions. Monthly regional meetings were held between bakeries to reconcile supplied volumes for the month. If a bakery sold more than its quota, that bakery would buy from the other bakeries in order to correct the “quota volumes”. As a result of the regulation, bakery managers did not have to spend time and energy on marketing and customer service. Not only were such managers certain about their market, but they also sold a fixed amount of bread each month. The bakery manager focused mainly on the reduction of production costs and spent most of his / her time on operations.
- Only a limited product range could be produced profitably due to the subsidy system, meaning standard white, brown and whole wheat bread.
- The standard weight of bread was set throughout the country.

1.1.2 After deregulation

Since 1 March 1991 the bread industry has been deregulated and the subsidy of 3.3 cents on white bread and 7.9 cents on brown bread terminated. This relieved the government paying bread subsidies amounting to more than R250 million annually (Anon, 1990:78).

Mr James Dippenaar, executive director of the Chamber of Baking summarised the new regime as follows (Anon, 1991b:11):

- There would only be **three** broad classifications of bread that bakeries could produce by following any recipe, namely **white bread, brown bread and whole wheat bread**.
- **General sales tax** (GST) would **not** be levied on any of these three categories.
- There would be **NO restriction** of entry to the bread industry and anyone could apply to the Wheat Board for a license.
- There would be **no price control** on any bread.

Bakers of bread would still have to adhere to standard weight requirements for bread.

As a result of all these changes due to deregulation, bakeries could set their own selling prices while taking into account their production costs, distribution costs and naturally the demand for their product inside their market environment.

1.1.3 Changing competitors' environment

The deregulation of the bread industry led to a considerable number of **new entrants** to the market (Anon, 1991c:14). According to Premier Foods' Executive Director, Willem de Kok, hundreds of new bakery licenses were issued since deregulation on 1 March 1991 (Anon, 1991d: 79). Mr Peter Cownie, executive director of the South African Chamber of Baking, confirmed that the number of employers in the bread industry has increased dramatically since 1991. He also emphasised that it was a free market and therefore highly competitive where everyone would have to fight to keep their market share intact (Moos, 2003:3).

The larger bread factories were continually losing market share to smaller competitors.

Since deregulation, the large bakeries' market share had dropped from 60% to 40%. One of the reasons was that the smaller bakeries were not inspected, and were therefore able to bake a loaf of bread weighing between 680 – 700g instead of the standard weight of 800g (Anon, 1998:38). A survey was conducted by the metrology department of the South African Bureau of Standards (SABS). They inspected and tested 577 batches of bread of which 135 (23%) were found to be lighter than the required weight (Tshetlo, 2006:9; Naidu, 2006:2; Makgalemele, 2006:1). This meant that the smaller competitors' cost of production was lower, thus leading to a more competitive price. The smaller competitors were also more adaptable because they had managed to swing the huge fixed cost component, which was a characteristic of the bread industry, around to a largely variable cost. In an industry that was extremely volume-sensitive, this would only constitute significant problems for the larger bakeries (Hughson, 1992:35).

1.1.4 Distribution of bread

Before deregulation most of the bread that was produced was distributed through cafes and medium-sized shops. Today large chain stores and supermarkets play a much larger role in the distribution of bread. The most significant change in the distribution channel is unmistakably the role of spaza shops and hawkers selling bread (General Manager: Bread Factory A, 2006). This informal sector supplies bread and other products directly to the consumer and is normally located very favourably for the market they serve. Such a spaza shop is operated from a garage or a shack next to the road. The result of this is that it has a huge impact on the method of distribution of bread. In the past a distributor would stop at for example thirty customers and deliver a thousand loaves, whereas today he has to stop at sixty customers in order to deliver the same amount of bread. This requires very significant additional time and costs.

Tjaart van der Walt, executive director of Sunbake, highlighted that since deregulation, long distances had to be travelled by bakeries to deliver a relatively low-value product in order to maintain volumes. This was caused by the removal of the quota system. Distribution costs have therefore escalated (Hughson, 1992:35).

1.1.5 Case study: Introduction to Bread Factory A's environment

Bread Factory A is located in the countryside. It produces roughly 16 million loaves of bread annually. Bread Factory A's approximately 3 100 customers are spread over a radius of some 120 kilometres from where the factory is located. This area is divided into 42 routes which are being serviced by 47 delivery trucks. These trucks are the factory's own assets, but the maintenance of the delivery trucks is outsourced.

Bread Factory A's distribution costs consist of the following:

- A fixed rate per kilometre travelled is paid to the outsourced party – this used to include diesel and oil plus general maintenance of the delivery trucks but has changed since September 2006. Currently Bread Factory A's responsibility includes the diesel that the delivery trucks consumes and the maintenance of tyres;
- the driver of the delivery truck receives a variable amount (cents per loaf) based on the number of loaves delivered; and
- the delivery truck assistant receives a fixed amount per day.

Distribution costs formed **52%** of the **controllable expenses** of Bread Factory A for the last financial year and **19%** compared to **total sales income**. It is therefore essential that the distribution costs be controlled as tightly as possible.

The main roads in the area are tarred but access to many of the smaller villages is still via dirt roads. They become increasingly difficult to traverse in wet weather.

1.1.5.1 Management information for decision-making

Currently Bread Factory A calculates a monetary contribution per route in order to determine a route's profitability. The total of the above-mentioned expenses plus the production cost of the delivered route is deducted from the income from the sale of the delivered bread for that specific route. Based on this formula, there are already some routes making a loss.

With the recent steady increase in the diesel price, however these losses will increase and other marginal routes will possibly start suffering losses too. A monthly analysis of the profitability per route is therefore very necessary, as well as formulating alternative plans for the marginal routes without sacrificing customers in the process.

1.1.5.2 Transfer pricing determination

Bread Factory A purchases flour from Miller A. Miller A and Bread Factory A are both subsidiaries of the same holding company. Bread Factory A is forced to purchase flour from Miller A. The question has to be raised whether the determination of the transfer price is to the advantage of the holding company in its entirety.

1.2 PROBLEM STATEMENT

Against this background of **shrinking market share** and **increased competition** combined with a **changing distribution channel**, we can assume that effective and efficient cost management will play a crucial role in the continuing economic existence of the larger bread factories.

Since deregulation was implemented in 1991, the cost management of production costs has generally been optimised. The sharp increase in the crude oil price and the subsequent rise of the diesel price has, however, dramatically affected the distribution costs of bread. On a daily basis Bread Factory A's delivery trucks travel a cumulative distance of approximately 10 000 km spread over 42 routes. Distribution cost therefore directly influences profitability and will have to be managed effectively and efficiently.

Distribution costs as such can be divided into controllable and non-controllable costs. As management has no control over non-controllable costs, focus must be placed on controllable costs. The current distribution costs include cost payable to the outsourced party for maintenance of the delivery vehicles, driver's variable costs, the van assistant's fixed daily wage, etc. The relationship with the outsourced party has to be nurtured in order to ensure that the outsourced party does not run into financial difficulty due to increased costs. Should this happen, a new supplier will have to be found, which will lead to dire consequences logistically and financially.

A bakery's continued existence depends heavily on sales volumes. Sales volumes are crucial to cover the fixed operational costs of a factory. This means that customers that are serviced via an unprofitable delivery route cannot be easily discarded.

1.3 RESEARCH OBJECTIVES

This research will embrace general and specific objectives.

1.3.1 General objective

The general objective of this study is to determine whether general management accounting principles were applied in Bread Factory A with specific reference to the financial viability of the delivery routes.

1.3.2 Specific objectives

The specific objectives of this study are as follows:

- 1.3.2.1 To conceptualise cost terms and concepts from the literature by referring to cost assignment, cost behaviour and costing systems.
- 1.3.2.2 To conceptualise competitive advantage from the literature.
- 1.3.2.3 To conceptualise transfer price determination from the literature.
- 1.3.2.4 To determine the accurate behaviour, traceability and relevancy of costs used in the calculation of the profitability of delivery routes in Bread Factory A.
- 1.3.2.5 To calculate the profitability of the delivery routes at Bread Factory A.
- 1.3.2.6 To determine whether Bread Factory A follows the guidelines provided by the literature on competitive advantage.
- 1.3.2.7 To determine whether the most beneficial transfer price determination method is used in Bread Factory A.
- 1.3.2.8 To formulate recommendations regarding the method used to measure the profitability of delivery routes at Bread Factory A.
- 1.3.2.9 To formulate recommendations regarding Bread Factory A's approach to achieve competitive advantage.
- 1.3.2.10 To formulate recommendations regarding the determination of transfer prices of flour from Miller A to Bread Factory A.

1.4 HYPOTHESIS

The accurate measurement and allocation of distribution costs and the optimisation of delivery routes would lead to improved profitability and proper cost management. Optimisation of delivery routes would mean that sales volumes can be maintained and possibly increased.

1.5 RESEARCH METHOD

The research consists of the following:

1.5.1 Phase 1: Literature study

The literature study will focus on as much relevant literature as possible as well as available information. This includes legislation regarding the deregulation of the bread industry. It also includes reviewing journal and magazine articles, books, newspaper articles, other publications as well as previous dissertations and mini-dissertations.

1.5.2 Phase 2: Empirical study

The proposed methodology for the empirical study is discussed below:

1.5.2.1 Research design

A **research design** is defined by Yin (2003:20) as “*a logical plan for getting from here to there*, where *here* may be defined as the initial set of questions to be answered, and *there* is some set of conclusions (answers) about these questions”.

The **purpose** of a **research design** is to assist in avoiding a situation where the evidence of the research does not address the initial research questions (Yin, 2003:20).

A **case study** is used as approach for the research. A case study is an empirical enquiry that investigates a particular programme or event in depth for a period of time (Yin, 2003:13; Leedy & Ormrod, 2005:135; Babbie, 2004:293). A case study is a valuable vehicle for communicating applied industry-related research data (Lyons, 2005:702). Leedy and Ormrod

(2005:135) state that a case study may be especially suitable where you want to obtain more information about a little known or poorly understood situation.

The overall case study research can be classified as **qualitative research** and **quantitative research**. Case studies can be performed by using **qualitative** and **quantitative** evidence (Yin, 1981:58). Leedy and Ormrod (2005:105) believe that research studies are enhanced by combining **both** quantitative and qualitative methods. This statement is confirmed by Karami *et al.* (2006:48) who indicates that research methodology in business and management requires the **right balance** between qualitative and quantitative methods.

A qualitative research approach has the following characteristics (Leedy & Ormrod, 2005:133):

- Focus is placed on the phenomena that occur in their natural setting (“real world”)
- It involves studying those phenomena in all their complexity.

The interviewing process is a **qualitative** approach that is **exploratory** in nature (Leedy & Ormrod, 2005:95).

The examination and analysis of the financial data for Bread Factory A is **quantitative research**. According to Leedy and Ormrod (2005:94), quantitative research is performed to obtain answers to questions about relationships between measured variables, and the purpose thereof is to explain, predict and control phenomena.

In table 1.1 the difference between quantitative and qualitative research approaches is tabulated.

Table 1.1: Distinguishing characteristics of quantitative and qualitative approaches

Question	Quantitative	Qualitative
What is the purpose of the research?	<ul style="list-style-type: none"> • To explain and predict • To confirm and validate • To test theory 	<ul style="list-style-type: none"> • To describe and explain • To explore and interpret • To build theory
What is the nature of the research process?	<ul style="list-style-type: none"> • Focused • Known variables • Established guidelines • Predetermined methods • Somewhat context-free • Detached view 	<ul style="list-style-type: none"> • Holistic • Unknown variables • Flexible guidelines • Emergent methods • Context bound • Personal view
What is the data like, and how is it collected?	<ul style="list-style-type: none"> • Numeric data • Representative, large sample • Standardised instruments 	<ul style="list-style-type: none"> • Textual and/or image-based data • Informative, small sample • Loosely structured or non-standardised observations and interviews
How is data analyzed to determine its meaning?	<ul style="list-style-type: none"> • Statistical analysis • Stress on objectivity • Deductive reasoning 	<ul style="list-style-type: none"> • Search for themes and categories • Acknowledgement that analysis is subjective and potentially biased • Inductive reasoning
How are the findings communicated?	<ul style="list-style-type: none"> • Numbers • Statistics, aggregated data • Formal voice, scientific style 	<ul style="list-style-type: none"> • Words • Narratives, individual quotes • Personal voice, literary style

Source: (Leedy & Ormrod, 2005:96)

1.5.2.2 Composition of the study field

The study field consists of an affiliated Bread factory, hereafter named Bread Factory A, which manufactures and distributes bread.

The period under review will be the financial year ended during 2006.

1.5.2.3 Methods and techniques for data analysis

The methods that will be used to conduct this study include:

- Interviews conducted with the General Manager and the Financial Manager of Bread Factory A in order to obtain the relevant information.

- Examination and analysis of the financial data for Bread Factory A for the period under review. The income and expenses relating to distribution routes will be analysed in order to determine the profitability of distribution routes. The purchase cost of flour will be obtained in order to determine the transfer prices of flour purchased from Miller A.
- A comparison will be drawn between the transfer price of flour purchased from Miller A with similar competitor flour prices.

1.5.2.4 Reliability and validity

A **research design** should represent a logical set of statements. Design tests have been developed to establish the **quality** of any empirical research. These four tests are (Yin, 2003:33; Riege, 2003:80):

- Construct validity;
- internal validity;
- external validity; and
- reliability.

The results of the four tests can be summarised as follows:

- The researcher is unable to directly manipulate the financial data of Bread Factory A. The formulas and classifications that are used, are described in the literature and have been developed by a panel of experts in the Management Accounting field. This ensures the **validity** of the formulas and classifications.
- When referring to **reliability**, the assumption is made that the financial records provided by Bread Factory A are accurate in their application of accepted accounting practice.

1.5.2.5 Report and discussion of results

The results of the empirical investigation will be tabulated, discussed and related to the literature.

1.5.2.6 Conclusions and recommendations

Recommendations regarding the method used to measure distribution costs in Bread Factory A and recommendations regarding the determination of transfer prices of flour from Miller A to Bread Factory A, will be made based on the empirical investigation.

1.6 SUMMARY

In this chapter an introduction and background was given on the bread industry. The problem statement and the motivation behind the study were given. The research objectives and the research method were discussed.

The study is structured as follows:

In chapters two to four the literature will be reviewed. Chapter two will provide a theoretical background on cost terminology and concepts, more specifically regarding cost assignment, cost behaviour and costing systems.

Chapter three will deal with the literature review of measuring and gaining competitive advantage. It will then be applied specifically to the bread industry and the case study.

Chapter four will review the methods of determining transfer prices. The chapter will review the various methods concluding with the most appropriate method applicable to the case study under review.

Chapter five will describe and explain the research methodology that will be used in this study. The chapter will address issues such as the study population, the interview process and the examination of the financial records.

In chapter six the results will be analysed and discussed, while chapter seven will conclude with recommendations based on the research conducted.

CHAPTER 2

COST ASSIGNMENT, COST BEHAVIOUR AND COSTING SYSTEMS

2.1 INTRODUCTION

Competition in the bread industry has increased dramatically since the implementation of deregulation in 1991. According to Mr. Peter Cownie, executive director of the Chamber of Baking, the **new entrants** into the baking industry have increased sharply since deregulation. Bakeries are competing to supply bread at a **low price** (Moos, 2003:3). Effective **cost management** in a bread factory is therefore crucial. The lower the cost, the lower the bread price can be set by the bakery.

According to the Longman Business English Dictionary (2001, 4:102), **cost** is defined as “the amount of money that you have to pay in order to buy, do or produce something. Costs (plural), the money that a business or an individual must regularly spend”.

The Oxford English Dictionary (1978, 2:1034) defines **cost** as “that which must be given or surrendered in order to acquire, produce, accomplish, or maintain something: the price paid for a thing”.

The term **cost** is defined by Drury (2004:29) as a reflection of a monetary measure of the resources sacrificed or forgone in order to achieve a specific objective, for example, to acquire goods or a service.

Cost is therefore considered and evaluated in monetary value. In return for the money spent, you receive goods or services.

Cost management is the focus of management’s attention on **cost reduction** and **continuous improvement** and change, rather than **containing costs** (Drury, 2004:943). Cost management is used to describe the approaches and activities that managers follow and undertake in order to increase the value for customers while at the same time lowering costs of products and services (Horngren *et al.*, 2006:3).

Cost management therefore focuses on improving operations through reducing costs and improving quality.

It is considered important to first explain **cost terminology** and **cost concepts** used in this study.

2.2 COST ASSIGNMENT

Costs are typically accounted for by a costing system in two basic stages (Horngren *et al.*, 2006:27; Drury, 2004:30):

- Cost **accumulation** followed by
- **cost assignment**.

Cost accumulation in an organisation is the collection of cost data by an accounting system classifying the costs into categories such as labour, materials and overhead costs (Drury, 2004:30; Horngren *et al.*, 2006:27).

Cost assignment on the other hand involves (Horngren *et al.*, 2006:27):

- Allocating costs having a direct relationship with a cost object; and
- Allocating costs that have an indirect relationship with a cost object.

A **cost object** can be defined as anything for which separate cost data (measurement) is desired (Garrison *et al.*, 2006:50; Drury, 2004:30). To assign costs to cost objects, costs can be classified either as **direct** or **indirect costs**.

2.2.1 Direct and indirect costs

Direct cost is a cost that is directly related to a **particular cost object** and can be allocated to that cost object in a **cost-effective** way (Horngren *et al.*, 2006:27). Drury (2004:30) defines direct costs as “those costs that can be specifically and exclusively identified with a particular cost object.”

In a bakery, examples of direct costs are flour, yeast, salt, etc.

Indirect costs on the other hand are related to a particular cost object but cannot be traced to that cost object in a **cost-effective** way (Horngren *et al.*, 2006:27). Drury (2004:30) defines indirect costs as “cannot be identified specifically and exclusively with a given cost object”.

An example of an indirect cost in a bakery is the salary of the General Manager. It is not specifically and exclusively related to the production of white bread, but the cost was incurred to the advantage of the bakery in its entirety.

The necessity for classifying and assigning costs as direct or indirect was **traditionally** required in order to value inventory and measure profits (Drury, 2004:31). Managers want to **assign costs accurately** to products in order to measure the **profitability** of different products. If products are costed incorrectly, managers might promote products that are not profitable and *vice versa* (Horngren *et al.*, 2006:28).

2.2.2 Cost assignment of indirect costs

Indirect costs are sometimes referred to as **common costs** because they cannot be directly traced to the units produced or to cost objects (Zimmerman, 2006:343; Garrison *et al.*, 2006:51; Hilton *et al.*, 2006:56). The **cost assignment** (allocation) of **indirect costs** are necessary for purposes of valuing inventory, for planning and monitoring cost activities, and for various strategic decision making (Martin, s.a.:1).

Cost assignment requires three steps, namely (Zimmerman, 2006:343):

- Defining the cost objects;
- accumulating the common costs (indirect costs) to be assigned to the cost objects; and
- choosing a method for allocating the accumulated indirect costs to the cost objects.

Steps 1 and 2 should not be too difficult. Step 3 requires the identification of an allocation base. An **allocation base** is a measure such as units of production, machine hours or labour hours, used to assign costs to cost objects (Garrison *et al.*, 2006:93; Zimmerman, 2006:343).

Once an allocation base is identified the indirect costs, usually manufacturing overheads, can be allocated to cost objects.

2.3 COST BEHAVIOUR

Cost behaviour refers to how a cost will react or respond to different levels of activity (Garrison *et al.*, 2006:48). “A knowledge of how costs and revenue will vary with different levels of activity (or volume) is essential for **decision making**” as quoted by Drury (2004:32).

Activity levels can be measured in terms of production volumes (loaves of bread baked), sales volumes (loaves of bread sold), machine hours used, etc. Decisions that can be made based on different levels of activity include (Drury, 2004:33):

- What should the planned level of production be for the next month?
- Should we reduce the selling price to sell more units? What would the effect be on profitability?

For both these decisions it is necessary for management to determine “applicable cost”.

Cost can be classified as variable, fixed, semi-variable (mixed) or semi-fixed (step fixed).

2.3.1 Variable costs

Variable costs change in **direct proportion** to the changes in the related level of activity or volume (Drury, 2004:34; Horngren *et al.*, 2006:30; Garrison *et al.*, 2006:48). If the activity level doubles, the total variable costs will also double. We can therefore derive that **total** variable cost is **linear** (as indicated in graph 2.1) and **unit** variable cost is **constant** (Drury, 2004:34).

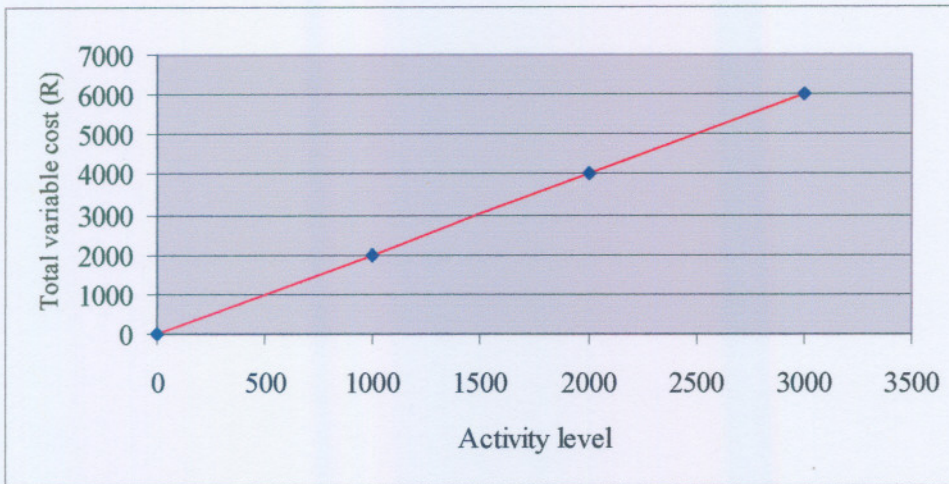
Example 2.1: Behaviour of variable cost

A bakery produces 1 000 loaves of bread. Production is increased to 2 000 loaves and then to 3 000 loaves.

Activity level	Variable cost	
	Per unit	Total
1000 loaves	R 2	R 2 000
2000 loaves	R 2	R 4 000
3000 loaves	R 2	R 6 000

Source: (Researcher)

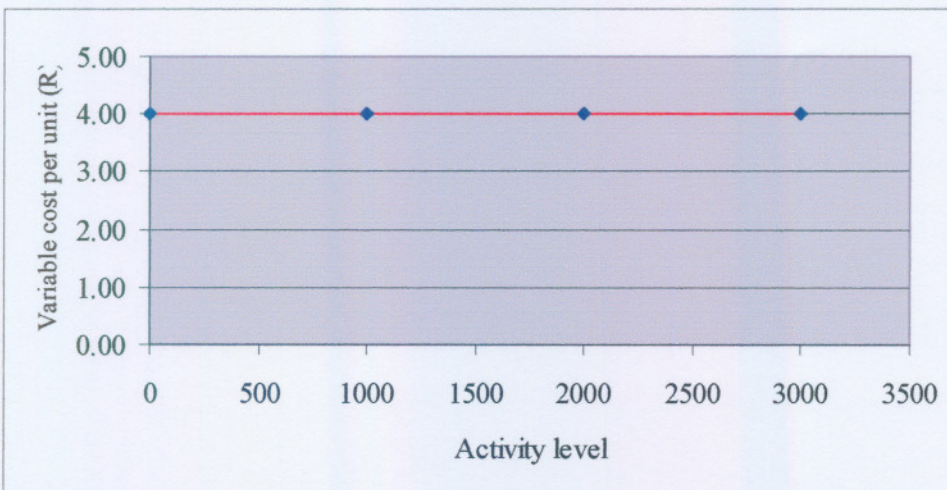
Graph 2.1: Variable cost in total



Source: (Drury, 2004:35 Adapted)

Variable cost per unit is constant as indicated in graph 2.2.

Graph 2.2: Variable cost per unit



Source: (Drury, 2004:35 Adapted)

2.3.2 Fixed costs

Fixed costs remain **constant** (unchanged) in total regardless of wide changes in the level of activity or volume for a given period of time (Drury, 2004:34; Horngren *et al.*, 2006:30; Garrison *et al.*, 2006:49). **Total** fixed costs are **constant** for all levels of activity while **unit** fixed costs **decrease proportionally** with an increased level of activity (Drury, 2004:34).

Example 2.2: Behaviour of fixed cost

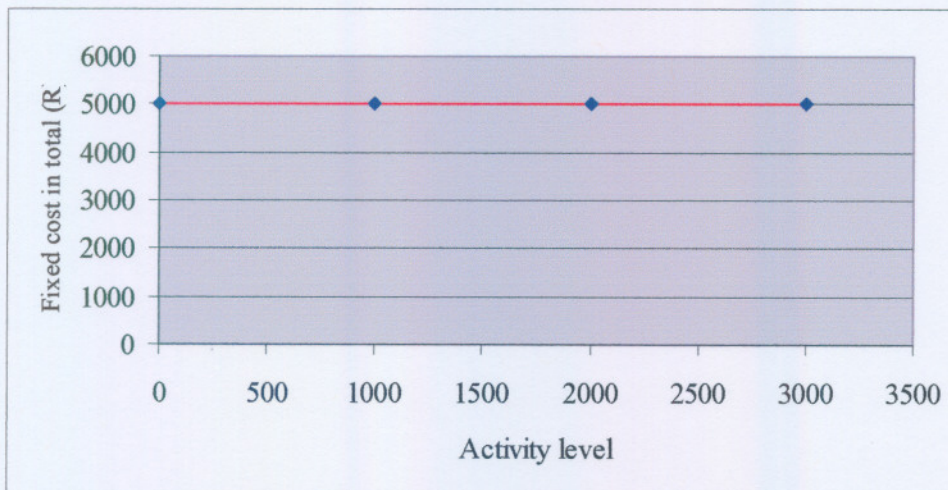
A bakery produces 1 000 loaves of bread. Production is increased to 2 000 loaves and then to 3 000 loaves.

Aktiwiteitsvlakke	Vaste koste	
	Per eenheid	Totaal
1 000 brode	R 5.00	R 5,000
2 000 brode	R 2.50	R 5,000
3 000 brode	R 1.67	R 5,000

Source: (Researcher)

Total fixed cost are constant and remain unchanged as indicated in graph 2.3.

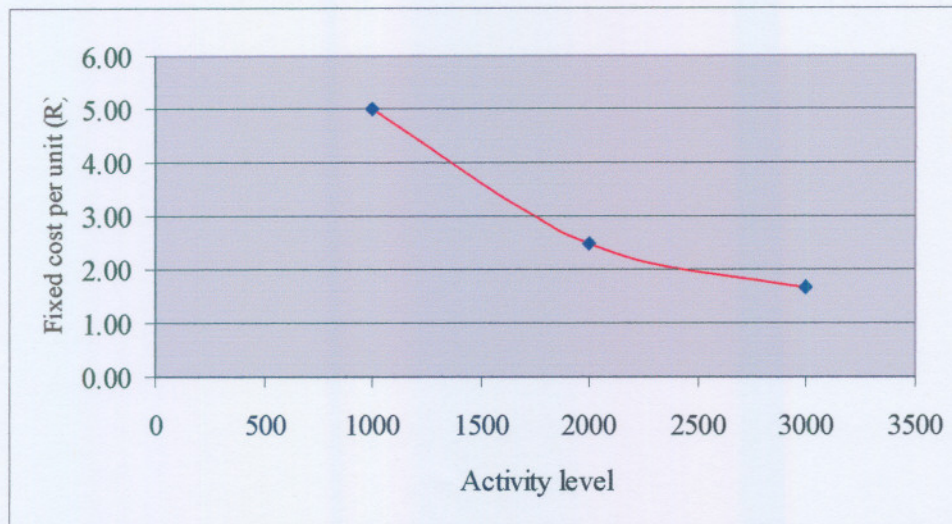
Graph 2.3: Fixed cost in total



Source: (Drury, 2004:35 Adapted)

Fixed cost per unit decrease proportionally when the activity level increases.

Graph 2.4: Fixed cost per unit



Source: (Drury, 2004:35 Adapted)

2.3.3 Semi-variable costs (mixed costs)

Semi-variable costs, also known as mixed costs, are costs that include **both** a **fixed** element and a **variable** element (Drury, 2004:37; Vigario, 2005:20; Garrison *et al.*, 2006:194).

An example of a mixed cost can be rent. The monthly rent is, say, R10 000 plus 10% of the gross sales revenue (Vigario, 2005:20).

2.3.4 Semi-fixed costs (step fixed costs)

Within a given period of time, costs are fixed within specified activity levels, but it eventually increase or decrease by a constant amount at various critical activity levels (Drury, 2004:36; Vigario, 2005:20; Garrison *et al.*, 2006:187-188).

An example of a semi-fixed cost is the leasing cost of a machine where one machine can only manufacture 1 000 units. If production then increases to 2 800 units, three machines are required. The leasing cost of the machines will then be three times the fixed leasing cost of one machine (Vigario, 2005:20).

2.3.5 Total cost and unit costs

In the graphs relating to variable costs and fixed costs (graphs 2.1, 2.2, 2.3, 2.4), we compared the cost behaviour between **total cost** and per **unit costs**. Generally management should think and make **decisions** in terms of total costs rather than unit costs (Horngren *et al.*, 2006:34). In the bread industry, however, calculating a unit cost (cost per loaf) is essential.

According to Horngren *et al.* (2006:35), a **unit cost**, also called an **average cost**, is calculated by dividing some amount of total costs by the related number of units. Referring to the bread industry, the related units would be the number of loaves produced. It is essential for decision-making to know the manufacturing costs per loaf.

2.3.6 Manufacturing costs

In a manufacturing organisation, products are frequently the **cost object** (Drury, 2004:31). In the case of a bread factory, a loaf of bread is the cost object. Most manufacturing organisations divide the **manufacturing costs** into three broad categories, namely **direct materials**, **direct labour** and **manufacturing overheads** or **indirect manufacturing costs** (Garrison *et al.*, 2006:36; Horngren *et al.*, 2006:37; Drury, 2004:31). All direct costs (direct materials and direct labour) are referred to as **prime costs** (Horngren *et al.*, 2006:37; Drury, 2004:31).

The manufacturing costs in Bread Factory A are classified in the following categories:

- Flour
- Other ingredients
- Wrapping

2.3.7 Controllable and uncontrollable costs

It is important to differentiate between costs that management can **control** and for which they should be held **accountable** and costs that they have no control over and for which they cannot be held accountable (Drury, 2004:656; Garrison *et al.*, 2006:379).

A **controllable cost** as defined by Horngren *et al.* (2006:198) “is any cost that is primarily subject to the influence of a given *responsibility centre manager* for a *given period*” while

Vigario (2005:20) refers to a controllable cost as “costs that a person has a choice in the outcome”.

Responsibility accounting is the various concepts and tools used to **measure** the **performance** of a responsibility centre that a manager is accountable for (Horngren *et al.*, 2006:379; Hilton *et al.*, 2006:745; Garrison *et al.*, 2006:379).

A **responsibility centre** is a unit of an organisation where an individual manager has **control over**, and is **accountable** for the unit’s performance. The different types of responsibility centres are (Horngren *et al.*, 2006:197; Drury, 2004:653; Garrison *et al.*, 2006:541; Hilton *et al.*, 2006:746):

- **Cost centres:** The manager has control over and is held accountable for costs only.
- **Revenue centres:** The manager has control over and is held accountable for the revenue attributed to the unit.
- **Profit centres:** The manager has control over and is held accountable for both costs and revenues.
- **Investment centres:** The manager is held responsible for revenues and costs, and has the responsibility and authority to make decisions about working capital and capital investments.

It is therefore crucial to differentiate between controllable and uncontrollable costs because it affects the measurement of a manager’s performance.

According to Drury (2004:656), Merchant (1998) identified three types of **uncontrollable factors** namely:

- Economic and competitive factors;
- acts of nature; and
- interdependencies.

In Bread Factory A there are uncontrollable costs such as the cost of diesel. The diesel price is partly regulated by the government. The cost of diesel used to be included as part of a fixed fee paid to an outsourced party responsible for the maintenance of the delivery vehicles, but since September 2006 Bread Factory A is now responsible for paying the diesel consumed by the delivery vehicles.

2.3.8 Relevant and irrelevant cost

Relevant costs are **expected future costs** that will change as a direct consequence of the **decision** under review (Vigario, 2005:360; Drury, 2004:37; Horngren *et al.*, 2006:380). It is important to note that **only** relevant costs should be considered during decision making (Vigario, 2005:360).

Irrelevant costs are costs that will not be affected by the decision under review (Drury, 2004:37). Vigario (2005:360) gives examples of costs that are not relevant:

- Past sunk costs, or money already spent;
- future spending already committed by separate decisions;
- costs which are not of a cash nature, e.g. depreciation; and
- absorbed overheads. (Only cash overheads incurred are relevant to a decision)

2.4 CONTRIBUTION THEORY

Costs are separated into fixed and variable elements. Once costs can be classified according to their behaviour, the information can be used to make improved decisions.

Sales volumes are not constant, they change daily. When these sales volumes change, the only numbers that change in direct correlation are **total revenues** and **total variable costs** (refer graph 2.1, page 16) (Horngren *et al.*, 2006:62). The amount remaining when total variable cost is deducted from total revenues is called the **contribution margin** (Horngren *et al.*, 2006:62; Hilton *et al.*, 2006:61; Edmonds *et al.*, 2006:55; Garrison *et al.*, 2006:207).

The selling price per unit and the variable cost per unit are assumed to be constant (refer graph 2.2, page 16), therefore the **contribution margin per unit** can also be assumed to be **constant** (Drury, 2004:271). Therefore, as the sales volume increases, the total contribution margin increases, while the opposite occurs when the sales volume decreases. The contribution margin **contributes** towards the recovering of **fixed costs** and thereafter provides the organisation with **profits** (Horngren *et al.*, 2006:63; Edmonds *et al.*, 2006:55; Garrison *et al.*, 2006:207).

The contribution margin approach is only used for internal reporting purposes. Generally Accepted Accounting Practice (GAAP) prohibits the use of the contribution approach for external reporting purposes (Edmonds *et al.*, 2006:55; Garrison *et al.*, 2006:207). The contribution approach enables managers to organise data pertinent to all kinds of **special decisions** such as product-line analysis, pricing and the use of scarce resources (Garrison *et al.*, 2006:207). Bread Factory A uses the **contribution margin** or contribution loss on **distribution routes** in their decision-making process. The calculation of the delivery route profitability can be classified as **segment reporting**.

2.4.1 Segment reporting

A **segment** is a part or an activity of an organisation that earns revenues and incurs expenses. Managers require information about these revenues and expenses (Garrison *et al.*, 2006:543; Sanders *et al.*, 1999:36; Seal *et al.*, 2006:649). Examples of segments are divisions of a company, sales territories, individual customers and product lines (Garrison *et al.*, 2006:543).

The **objective** of segmental reporting is to provide information about the different types of business products and services the organisation produces and the different economic environments in which it operates (Quéree & Yeoh, 2006:64; Rushinek & Rushinek, 1994:8). Organisations also require information about the **profitability** of a segment of the business (Hansen & Mowen, 2003:867; Garrison *et al.*, 2006:543; Seal *et al.*, 2006:650). The information on segment reporting is used in management decision making (Hansen & Mowen, 2003:867).

Segment reporting is acquired through the construction of a **segmented income statement** (Garrison *et al.*, 2006:543).

When a segment is evaluated, traditional performance measures such as return on investment (ROI), residual income (RI) and economic value added (EVA) can be calculated to evaluate the segment's performance (Garrison *et al.*, 2006:556; Drury, 2004:845-846; Hilton *et al.*, 2006:755-761). Bread Factory A does not have a balance sheet. All the assets and liabilities are reflected in the holding company's financial statements. These traditional performance measures can therefore not be calculated.

For purposes of accurately calculating and recording the delivery route profitability in Bread Factory A, it is necessary to construct a segmented income statement. The delivery routes in Bread Factory A will be treated as segments.

2.4.1.1 Segmented income statement

When preparing a segmented income statement, the **variable costs** (paragraph 2.3.1, page 15) are deducted from the **sales** to determine the **contribution margin** (paragraph 2.4, page 21) for the segment. The information provided by the contribution margin enables management to make decisions regarding the most effective uses of the existing capacity (Garrison *et al.*, 2006:546; Seal *et al.*, 2006:655).

The next step is to deduct the fixed costs (paragraph 2.3.2, page 16) from the contribution margin. Fixed costs are divided into *traceable* and *common* fixed costs (Anon, s.a.:1; Garrison *et al.*, 2006:546; Seal *et al.*, 2006:655).

Traceable fixed costs of a segment occur due to the existence of the segment. If a segment is discontinued, the fixed costs would no longer exist. Traceable fixed costs are charged to the segmented income statement (Seal *et al.*, 2006:655; Garrison *et al.*, 2006:548; Anon, s.a.:1). An example of a traceable fixed cost in Bread Factory A is the fixed wages of the delivery vehicle van assistant. The van assistant receives a fixed amount per day when he or she accompanies a driver on a delivery route (paragraph 6.2.6.2, page 91).

Common fixed costs cannot be traced directly to the segment and are fixed costs incurred to support the operations of more than one segment in an organisation. If a segment closes, the fixed costs will still have to be incurred (Seal *et al.*, 2006:655; Garrison *et al.*, 2006:548; Anon, s.a.:1). An example of a common fixed cost is the salaries of the repairs and maintenance staff in Bread Factory A. The staff receives a fixed salary per month to maintain the production plant.

When differentiating between fixed costs, the distinguishing factor would be whether the fixed costs would disappear when the segment closes. If the fixed costs would disappear, it is a traceable fixed cost and should be allocated to the segment (Seal *et al.*, 2006:658; Garrison *et al.*, 2006:550; Anon, s.a.:1).

The traceable fixed costs are deducted from the contribution margin to obtain the **segment margin**. The segment margin represents the margin of the segment after it has covered all the costs to operate the margin. If a segment cannot cover all its own costs, the segment should probably not be retained. The segment margin should be used in decision making about whether to close a segment (Seal *et al.*, 2006:658; Garrison *et al.*, 2006:550-551).

Common fixed costs are deducted from the segment margin to obtain the net operating income of the organisation (Anon, s.a.:1).

An example of a segmented income statement is shown in example 2.3.

Example 2.3: A segmented income statement

Books Inc. offers three books for sale namely a cookbook, a travel guide and a handy speller. Each book sells for R10. The company’s most recent monthly income statement is given below:

	Product line			
	Total company	Cookbook	Travel Guide	Handy Speller
Sales	300,000	90,000	150,000	60,000
Less: Expenses	270,000	89,900	132,500	47,600
Printing costs	102,000	27,000	63,000	12,000
Advertising	36,000	13,500	19,500	3,000
General sales	18,000	5,400	9,000	3,600
Salaries	33,000	18,000	9,000	6,000
Equipment depreciation	9,000	3,000	3,000	3,000
Sales commissions	30,000	9,000	15,000	6,000
General administration	42,000	14,000	14,000	14,000
Net operating income	30,000	100	17,500	12,400

The following additional information is available about the company:

- Printing costs and sales commissions are variable costs, all other costs are fixed. Sales commissions are calculated at 10% of sales for any product.
- The general sales cost above includes the salary of the sales manager and other sales costs that are not traceable to any specific product line.
- The same equipment is used to produce all three books, therefore the depreciation on equipment has been divided equally among the three product lines. An analysis has been performed of the company’s activities. This indicates that the equipment is used 30% of the time to produce cookbooks, 50% to produce travel guides and 20% to produce handy spellers.

- General administration cost relate to the administration of the company as a whole. These costs have been allocated equally among the product lines.
- All other costs are traceable to the three product lines as indicated in the income statement above.

A segmented income statement is prepared based on the information provided:

	Product line			
	Total company	Cookbook	Travel Guide	Handy Speller
Sales	300,000	90,000	150,000	60,000
Less: variable expenses	132,000	36,000	78,000	18,000
Printing cost	102,000	27,000	63,000	12,000
Sales commissions	30,000	9,000	15,000	6,000
Contribution margin	168,000	54,000	72,000	42,000
Less: traceable fixed expenses	78,000	34,200	33,000	10,800
Advertising	36,000	13,500	19,500	3,000
Salaries	33,000	18,000	9,000	6,000
Equipment depreciation*	9,000	2,700	4,500	1,800
Segment margin	90,000	19,800	39,000	31,200
Less: common fixed expenses	60,000			
General sales	18,000			
General administration	42,000			
Net operating income	<u>30,000</u>			

* R9000 X 30%, 50% and 20%, respectively.

Source: (Garrison *et al.*, 2006:584-585, Adapted)

2.5 COSTING SYSTEMS

The **purpose** of a **managerial costing system** is stated by Garrison *et al.* (2006:88): “the essential purpose of any managerial costing system should be to **provide cost data** to help managers **plan, control, direct and make decisions**”.

There are **two basic costing systems** that are commonly used by manufacturing organisations to assign costs to products or services (Garrison *et al.*, 2006:88; Drury, 2004:40; Horngren *et al.*, 2006:99):

- Job-costing system.
- Process-costing system.

2.5.1 Job-costing system

In this system, the **cost object** is a unit or batch of output of a product that is **unique**. The product is called a **job**. The products (jobs) are **heterogeneous**. This system would typically be found in industries that provide customised products or services (Garrison *et al.*, 2006:89; Drury, 2004:40; Horngren *et al.*, 2006:99).

Examples are airline meals prepared by LSG SkyChefs and engineering companies making machines to meet individual customer specifications (Garrison *et al.*, 2006:89; Drury, 2004:40; Horngren *et al.*, 2006:99).

A job-costing system would **not be relevant** at Bread Factory A because the product, bread, is homogeneous and the products are not customised to a customer’s preference.

2.5.2 Process-costing system

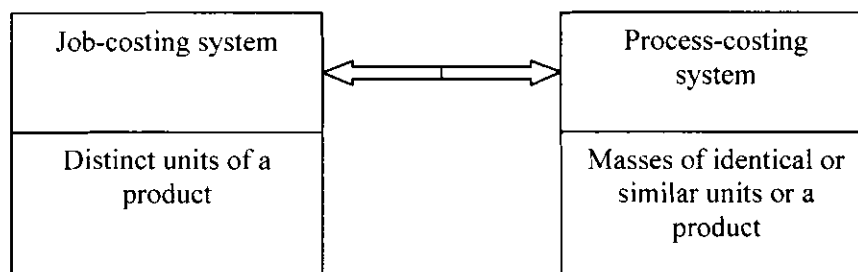
A **process-costing system** relates to situations where the organisation produces **masses** of **identical** or similar units of a product. These products are **homogeneous**. Products are generally produced in the same manner and flow through the production process on a **continuous basis** (Garrison *et al.*, 2006:89; Drury, 2004:40; Horngren *et al.*, 2006:98).

Examples are bottling beverages at Coca-Cola and oil refining (Garrison *et al.*, 2006:89; Drury, 2004:40; Horngren *et al.*, 2006:99).

Bread Factory A **definitely** would make use of a **process-costing system**. Bread is a homogeneous product and flows through the production process on a continuous basis.

Diagram 2.1 illustrates the two types of costing systems, namely job-costing and process-costing.

Diagram 2.1: Two types of costing systems



Source: (Horngren *et al.*, 2006:99)

2.5.3 Standard costing system

A **standard costing system** is a financial control system that enables management to analyse in detail **deviations** (variances) from the **budget**. Future costs can then be **controlled** more effectively (Drury, 2004:725; Vigario, 2005:261). Standard costs are the building blocks for preparing the budget (Edmonds *et al.*, 2006:321).

Any **control system** should have three basic parts, according to Hilton *et al.* (2006:648), namely:

- A predetermined or **standard performance**;
- a measure of **actual performance**; and
- a **comparison** of standard and actual performance (**variance analysis**).

Firstly, it is wise for an organisation to prepare a **budget** (predetermined or standard performance) as it provides the company with a goal and a map to work towards that goal (Vigario 2005:262; Hilton *et al.*, 2006:648). It is therefore vital for an organisation to not discard a budget (Vigario, 2005:262).

A standard can be defined as a **benchmark** or “norm” for measuring performance (Garrison *et al.*, 2006:429; Edmonds *et al.*, 2006:321; Hilton *et al.*, 2006:648). A standard represents

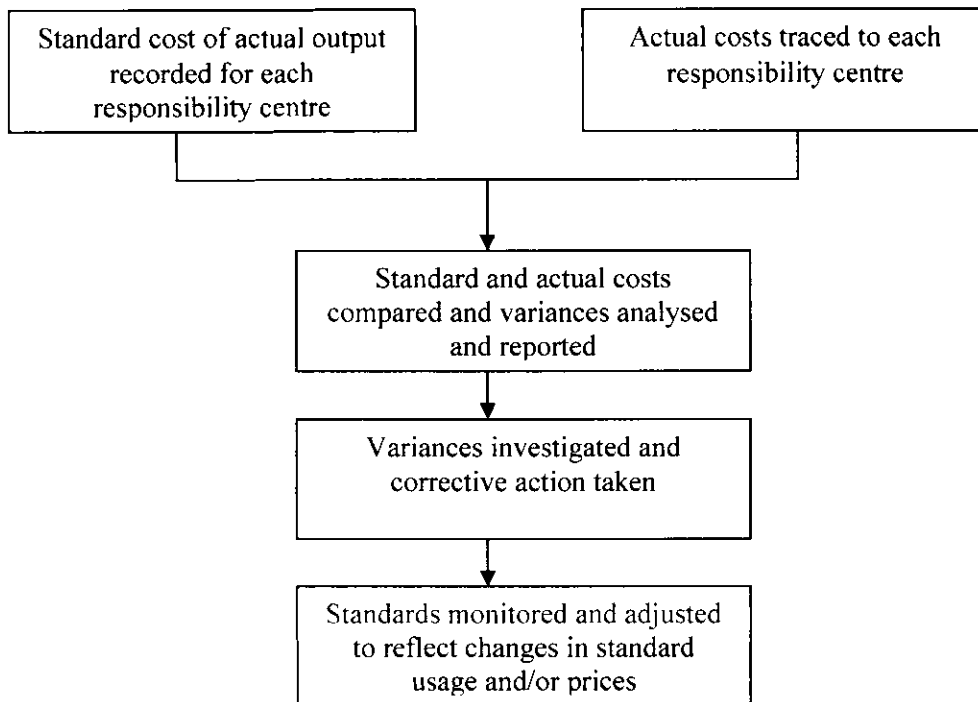
the amount that a cost or quantity **should be based on** in certain anticipated circumstances (Edmonds *et al.*, 2006:320). The **budget** represents the numbers and **benchmarks** against which an organisation measures their performance (Jehle, 1999:55).

Standard costs are **predetermined** costs. These standard costs should be attained under efficient operating conditions. Standard costs are **not the same as budgeted costs**. A **budget** is set for an **entire activity**, while a standard is the same information but only on a **per unit** basis (Drury, 2004:726). Drury (2004:726) states that “a standard therefore provides cost expectations per unit of activity and a budget provides the cost expectation for the total activity”.

Secondly, the **actual costs** incurred during the production process should be measured. **Thirdly**, the **variance** between the budgeted cost (standard cost per unit) and actual cost is **compared**. This variance is called a **cost variance**. Cost variances are analysed to obtain information to control costs (Hilton *et al.*, 2006:648). This process of analysing and investigating reasons for variances and eliminating it is called **management by exception** (Garrison *et al.*, 2006:429; Horngren *et al.*, 2006:222).

Management by exception is a valuable management tool. Through this process managers only concentrate on areas **not operating as expected**, instead of wasting their valuable time on areas **operating as expected** (Horngren *et al.*, 2006:222; Garrison *et al.*, 2006:429; Edmonds *et al.*, 2006:321; Hilton *et al.*, 2006:648-649).

Diagram 2.2: An overview of a standard costing system



Source: (Drury, 2004:728)

2.5.3.1 Setting standards

Standards should be set for each category of **manufacturing costs**, namely **direct material**, **direct labour** and **manufacturing overheads** (paragraph 2.3.6, page 19). Standards can be set using **two methods**: analysis of **historical data** and **task analysis** (Hilton *et al.*, 2006:649). Historical data can be used to set cost standards, but the danger in using this method is that the **historical data** will include past inefficiencies in the production operation (Drury, 2004:729). When an organisation has considerable production experience, historical data can be used as a reliable basis for predicting future costs (Hilton *et al.*, 2006:649). If an organisation produces a product for the first time, there will be no historical data available and this method would not be applicable.

When using **task analysis** to determine standards, **engineering studies** are used to determine these standards (Drury, 2004:729; Hilton *et al.*, 2006:649). Engineers who are intimately familiar with the production process will determine exactly how much direct material would be required and the way the machinery should be used in the production process. The result

of the engineering studies is standards for direct materials, direct labour and manufacturing overheads.

Standards are set for **quantity** and **price**. The engineers and production supervisors typically calculate and predict quantity standards while accountants, procurement and sales managers predict price standards (Garrison *et al.*, 2006:429). These standards should be both meaningful and attainable for a standard costing system to be successful (Vigario, 2005:264).

Example 2.4: A standard cost card for one loaf of bread

	Qty standard	Price standard	Standard cost
Direct material:			
Flour	500 g	R5.00 p / kg	R2.50
Other ingredients	20 g	R10.00 p / kg	R0.20
Wrapping	30 cm	R2.00 p / m	R0.60
Direct labour *	0.001 machine hour	R150 p / mh	R0.15
Manufacturing overheads	0.001 machine hour	R200 p / mh	R0.20
Standard cost - 1 loaf			R3.65

* 1 machine hour baking time produces 1 000 loaves

Source: (Researcher)

2.5.3.2 Ideal versus practical standards

The question can now be asked whether standards should be attainable all the time. Should standards be so difficult to attain that they become in effect the “impossible dream” (Garrison *et al.*, 2006:429; Hilton *et al.*, 2006:650; Vigario, 2005:264)? According to Hilton *et al.* (2006:650) “the answers to these questions depend on the purpose for which standards are used and the way standards affect behaviour”.

Ideal standards

Ideal standards refer to the “**impossible dream**”. These standards can only be attained under nearly perfect operating conditions, i.e. best circumstances. They do not make allowance for machine breakdowns or other disruptions in production. The best quality materials that can be obtained are used and most skilled and efficient employees are working at a peak effort of 100% of the time (Drury, 2004:733, Garrison *et al.*, 2006:429; Hilton *et al.*, 2006:650; Vigario, 2005:264). Managers argue about the motivational impact of using ideal standards. Vigario (2005:264) is of the opinion that “such standards **seldom represent a target** as they are seen as being impossible to achieve and so demotivate workers”.

Practical (attainable) standards

Practical or attainable standards are described as “tight but attainable” (Hilton *et al.*, 2006:651; Garrison *et al.*, 2006:431). Allowance is made for normal spoilage, machine breakdowns and lost time. Using practical standards keep employees on their toes, but the standards do not require miracles. It also produces the best norm that actual costs should be compared with. Variances from practical standards indicate deviations from normal operating conditions and require management’s attention (Drury, 2004:733; Garrison *et al.*, 2006:431; Hilton *et al.*, 2006:651; Vigario, 2005:264). Practical (attainable) standards are preferable for purposes of planning and budgeting (Drury, 2004:733).

2.5.3.3 Benefits and costs of standard costing systems

The **benefit** of a standard costing system is that it provides information that assists management to **control costs** (Hilton *et al.*, 2006:652; Edmonds *et al.*, 2006:322). Standard costing systems alert management about problem areas and it encourages proper planning. If standard costing is established and maintained properly, it can boost morale and also motivate employees (Edmonds *et al.*, 2006:322; Drury, 2004:733).

To implement and maintain cost standards are **time-consuming** and **costly**. To establish standards is **labour-intensive** and expensive. These standards should also be updated periodically to reflect changes in the cost structure of a product and to keep up with the changing production environment (Hilton *et al.*, 2006:652).

2.5.3.4 Developing manufacturing overhead standard rates

It is essential for planning and control to develop separate standard rates for variable and fixed overhead costs (Drury, 2004:730). A predetermined rate, also referred to as a standard rate, has to be calculated (Hilton *et al.*, 2006:694; Garrison *et al.*, 2006:94; Drury, 2004:730).

The allocation of manufacturing overhead costs is accomplished by using an appropriate **allocation base** (paragraph 2.2.2, page 14). Examples of allocation bases are direct labour hours, machine hours or production volumes (Garrison *et al.*, 2006:93; Horngren *et al.*, 2006:258; Drury, 2004:68).

The **predetermined rate** or **standard rate** is calculated as follows (Garrison *et al.*, 2006:94; Horngren *et al.*, 2006:258; Drury, 2004:71):

$$\text{Predetermined rate} = \frac{\text{Estimated manufacturing overhead cost}}{\text{Estimated total units in allocation base}}$$

This rate is then calculated for the variable and fixed manufacturing overheads.

The next step is to **allocate the overhead costs** to the cost objects. The formula for assigning overheads to the cost objects is (Garrison *et al.*, 2006:94; Horngren *et al.*, 2006:258; Drury, 2004:71):

$$\text{Overhead applied to cost object} = (\text{predetermined rate} \times \text{amount of the allocation base incurred by the cost object})$$

The difference between the standard overhead costs applied to the cost objects and the actual manufacturing overheads is referred to as a **variance** (paragraph 2.5.3.5, page 32).

2.5.3.5 Variance analysis

The third part in an effective control system is to compare budget (standard) performance with actual performance. This is called **variance analysis**.

A **variance** as defined by Longman Business English Dictionary (2001, 4:516) is “1. The amount by which two or more things are different, and 2. ACCOUNTING - the difference between what something actually costs and its usual or standard cost, or its cost when calculated earlier”.

Drury (2004:653) defines a **variance** as the difference between the standard and actual cost while Horngren *et al.* (2006:222) state that a **variance** is the difference between the actual amount and corresponding budgeted amount.

A **variance** is therefore the difference between what an organisation predicted the cost will be and what it actually is.

Standards are set for both price and quantity. Variances are also calculated based on price and quantity (Garrison *et al.*, 2006:429). Variance analysis is divided into material variances, labour variances and manufacturing overhead variances.

Bread Factory A does not currently use variance analysis.

Analysis and investigation of variances

The **analysis of variances** is crucial to determine the **factors** that cause the actual results to differ from the predetermined standards or budgeted targets (Drury, 2004:658; Horngren *et al.*, 2006:236; Garrison *et al.*, 2006:430).

One of the reasons for an adverse yield variance could be attributed to the use of **inferior quality materials**. In the bread industry it could be due to yeast that has passed its expiry date. Another reason for an adverse yield variance could be attributed to a **failure to follow standard procedures**. An example in the steel industry could be the practice that was followed for pouring molten metal, which was different from the most efficient practice that was determined when the standard yield was calculated (Drury, 2004:780).

Bread Factory A analyses and investigates quantity direct material yield variances daily. Referring to the example 2.4 (page 30): 20 loaves per 65 kg bag of flour. The reasons for the deviations are investigated and problems are resolved in order to prevent discrepancies from recurring. The result is that the efficiency of the production process improves daily.

2.5.3.6 Relevance of standard costing

The question whether the use of a standard costing system has become **outdated** has been raised quite often recently. According to Sulaiman *et al.* (2005:109) “many authors have predicted that the shorter product life cycles, advanced manufacturing technologies, decreasing emphasis on labour in the production process, and global competition may lead to

the **demise of standard costing**". Researchers conducting an exploratory study in Malaysia came to the following conclusion: "Despite its various criticisms, the empirical findings suggest that standard costing is **still being used** by a large majority of firms in Malaysia. Thus, Malaysian companies (both Japanese and local) perceive that the basic principles of standard costing remain sound" (Sulaiman *et al.*, 2005:109).

The use of the traditional management accounting techniques such as standard costing and variance analysis remains strong (Sulaiman *et al.*, 2004:493).

The assumption can therefore be made that the use of a standard costing system has not become outdated.

2.6 SUMMARY

The cost of a product or service in any organisation is necessary for planning, control and decision-making purposes. The management and control of costs are therefore crucial in any organisation, especially in an industry where competition is fierce and sales volumes are limited.

This chapter focused on explaining cost terminology and cost concepts. First the assignment of cost was discussed and secondly, cost behaviour. Knowledge of how cost would vary when activity levels change, forms an important part of planning, control and decision making. This information is used during budgeting, planning of production and sales and optimising inventory levels.

The discussion of the contribution theory followed. The calculation of the contribution of products is imperative for internal planning and decision-making purposes. Segment reporting assists in the decision-making process because it provides information about specific segments of an organisation. In reference to the case study of Bread Factory A, the contribution theory is used in the calculation of profitability of delivery routes.

The chapter concluded with a discussion of costing systems. Costing systems provide data to management in order to plan, control and make decisions. First job and process costing systems were discussed, followed by standard costing systems combined with variance analysis. Standard costing data provides the building blocks for budgeting, and variance analysis highlights inefficient operations within a manufacturing environment.

Thereby the first specific objective (objective 1.3.2.1, page 6), namely to conceptualise cost terms and concepts from the literature by referring to cost assignment, cost behaviour and costing systems, has been reached.

CHAPTER 3

COMPETITIVE ADVANTAGE

3.1 INTRODUCTION

The Longman Business English Dictionary (2001, 4:10) defines **competitive advantage** as “an advantage that makes a company more able to succeed in competing with others”.

Botten and Sims (2004:204) give the definition for **competitive advantage** as using the knowledge of competitive forces in order to place an organisation in a position where it exerts more competitive forces on competitors than competitors exert on the organisation.

According to De Wit and Meyer (2005:101) **competitive advantage** can only be achieved by creating superior value for buyers.

An organisation therefore has a competitive advantage if it succeeds in using their advantages to **outperform** their competitors.

Silvi and Cuganesan (2006:310) have highlighted that “in recent years, significant effort has been devoted to understanding and emphasizing the role of **knowledge** in conferring competitive advantage”. In order to gain **competitive advantage**, organisations have to obtain as much knowledge as possible.

According to Kazan *et al.* (2006:14) organisations have to use their **resources effectively** and **productively** in order to **compete** in an increasingly globalised economy.

The bread industry is an extremely competitive industry and bakeries have to compete to **maintain** their customer’s business and to gain **new business**. Each organisation will develop a strategy to deal with competitive rivals, to serve its particular base of customers and to act on the changes that impact on the way it operates. This **strategy** should enable the organisation to develop a **competitive advantage** that will lead to it competing effectively (Pitts & Lei, 2003:7). According to Chase *et al.* (2004:6) **efficiency** means “doing something at the lowest possible cost” while “**effectiveness** means doing the right things to create the most value for the company”.

Distribution costs of bread have to be considered when setting the selling price of a loaf. The distribution costs form part of the manufacturing overhead costs. The lower the distribution costs, the more profitable a bakery can be. Alternatively the selling price can be reduced, which can lead to higher sales volumes. A lower selling price combined with high quality in an extremely competitive industry, is a competitive advantage. **Competitive advantage starts with the formulation of an organisation's strategy.**

3.2 STRATEGY FORMULATION

There are **three** ingredients that are critical to the **success** of a strategy. The strategy must firstly be **consistent** with the conditions in the **competitive environment**. Secondly, the strategy must place **realistic** requirements on an organisation's resources and finally, the strategy must be **carefully executed** (Pearce & Robinson, 2003:123).

Strategy formulation in an organisation includes developing a **mission**, setting major **objectives**, assessing the **external** and **internal environments**, and evaluating and selecting **strategy alternatives** (Falshaw *et al.*, 2006:11). Strategy formulation in an organisation starts with the development of a **vision statement** and a **mission statement**. These statements give a broad direction that an organisation should and will attempt to follow (Botten & Sims, 2004:7; Ehlers & Lazenby, 2006:5).

A **vision statement** describes where an organisation ideally wants to be (Pitts & Lei, 2003:10). It is a dream that focuses on a desirable future and often has a strong emotional appeal (Ehlers & Lazenby, 2006:48; Pitts & Lei, 2003:10). The example of the vision statement of Woolworths will be used as an illustration:

Example 3.1: Vision statement of Woolworths

“We aspire to being the most trusted and respected African retail brand. We will achieve this by nurturing and building lifetime relationships with our customers. These relationships will be earned by us all making the Woollies difference.”

Source: (Ehlers & Lazenby, 2006:58)

A **mission statement** on the other hand is more specific than a vision statement. It describes the nature of the organisation's business, its customers, values and beliefs of the organisation

and also an element of sustainable competitive advantage (Botten & Sims, 2004:8; Ehlers & Lazenby, 2006:51; Pitts & Lei, 2003:11). The mission statement of SABMiller will be used as an example:

Example 3.2: Mission statement of SABMiller

SABMiller plc is an international company committed to achieving sustained commercial success, principally in beer and other beverages, but also with strategic investments in hotels and gaming. We achieve this by meeting the aspirations of our customers through quality products and services, by sharing fairly among all stakeholders the wealth and opportunities generated, and by seeking business partners who share our values. Thereby, we fulfil our goals of business growth and maximised long-term shareholder value, while behaving in a socially responsible and progressive manner.

The company's values then follow.

Source: (Ehlers & Lazenby, 2006:51)

In order to formulate a strategy that is **consistent** with the conditions in the competitive environment, an **environmental analysis** of the organisation is performed (Ehlers & Lazenby, 2006:5). A number of external factors influence an organisation's choice of direction and action. These factors, which constitute the **external environment**, can be divided into three subcategories (Pearce & Robinson, 2003:57):

- Factors in the **industry** environment.
- Factors in the **remote** environment.
- Factors in the **operating** environment.

There are models that an organisation can use to analyse these environments. The **industry analysis** can be performed by using **Porter's five forces** model, while the **PEST(EL) analysis** is used to analyse the **remote** environment. The **operating environment** include factors that are much more subject to the organisation's influence or control than the remote environment (Pearce & Robinson, 2003:82).

The **internal environment** is evaluated by performing a **SWOT analysis (corporate appraisal)** and **value chain analysis** (Botten & Sims, 2004:67).

The results of the environmental analysis will be used in setting **strategic objectives**.

3.3 EXTERNAL ENVIRONMENT

The external environment analysis consists of an industry analysis, remote environment analysis and operating environment analysis.

3.3.1 Industry analysis

The first stage in performing an **industry analysis** will be to **define the industry**. This is not as easy as it seems. What does help is to consider a “flow of goods” or “supply chain” diagram in order to define the **boundaries** of the industry (Anon, 2005a:33).

Example 3.3: Defining the boundaries of the bread industry

The process starts with farmers that grow wheat from the farmer the wheat goes to the miller where the wheat becomes flour, the flour then progresses to the bakery where the flour becomes bread and finally to the supermarket where it is sold. If the boundaries of the bread industry is considered, it is important to differentiate between the factors that are relevant to bakers but not to farmers. Another point to remember is that a vertically integrated company operates in more than one industry.

Source: (Anon, 2005a:33)

Once the industry is defined, the following **models** can be used to assist in identifying factors that **influence the industry** in which the organisation operates.

3.3.1.1 Porter’s Five Forces Model

Michael Porter from the Harvard Business School, United States, identified five forces that drive industry competition namely (Porter, 1998:3-4; Botten & Sims, 2004:28; Pearce & Robinson., 2003:70):

- Threat of new entrants
- Rivalry among existing firms

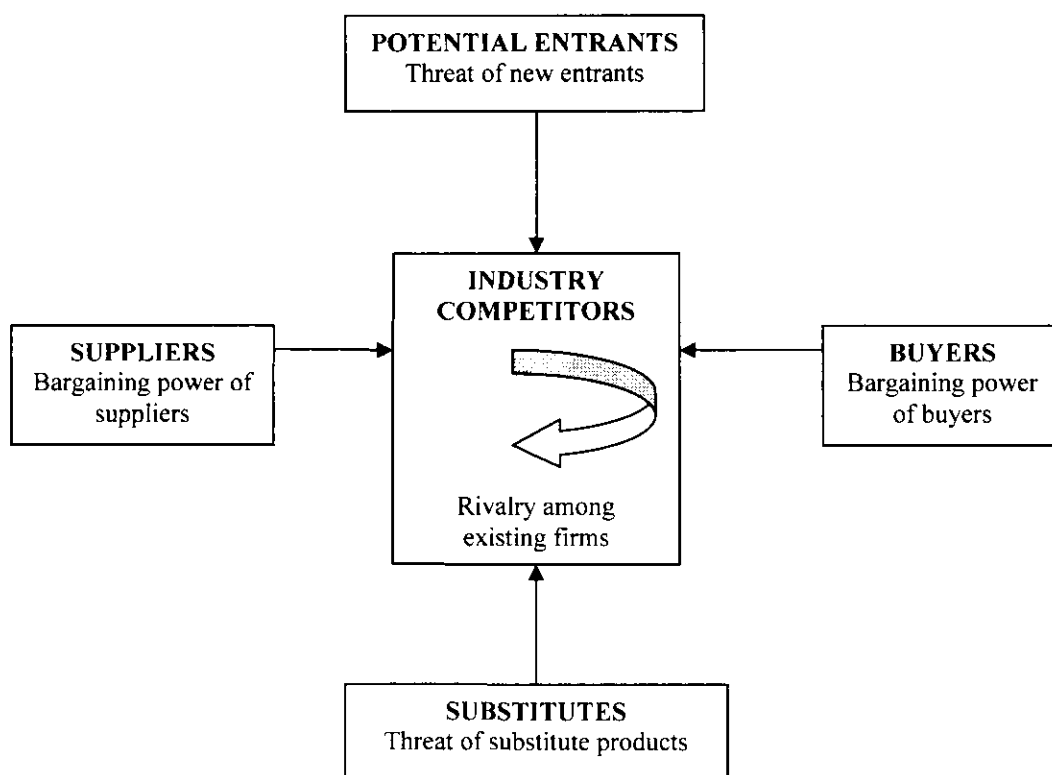
- Threat of substitute products
- Bargaining power of buyers
- Bargaining power of suppliers.

Porter (1998:4) highlights that “in order for any organisation to gain **competitive advantage** in an industry, it must find a position in the industry where it can best **defend** itself against these competitive **forces** or can **influence** them in its favour”.

All five of these forces have to be evaluated in order to determine the **impact** of each force. This will enable an organisation to determine the intensity of the industry forces influencing the external environment.

The five forces driving industry competition are illustrated in Figure 3.1.

Figure 3.1: Forces driving industry competition



Source: (Porter, 1998:4)

Each of the five forces will now be discussed in detail.

- **Threat of new entrants**

New entrants into the market threaten the market share of the existing competitors (Ehlers & Lazenby, 2006:96; Pearce & Robinson, 2003:70). It can lead to a **reduction in profit** of the existing competitors (Porter, 1998:56).

Many new entrants entered the bread industry since deregulation in 1991 (Anon, 1991c:14). The larger bakeries' market share dropped from 60% to 40% since deregulation (Anon, 1998:38).

The threat of new entrants into an industry depends, however, on the barriers to entry that are present combined with the reaction that a new entrant can expect from the existing competitors (Porter, 1998:7). The major sources of barriers to entry include capital requirements, economies of scale, switching costs from one supplier to another, access to distribution channels, etc. (Porter, 1998:7-10; Ehlers & Lazenby, 2006:96-97; Pearce & Robinson, 2003:71).

- **Rivalry among existing competitors**

This is the **strongest force** of the five forces. Existing competitors use tactics like price competition, advertising battles and new product innovations to gain market share. All of these tactics are used to differentiate your organisation's products from competitors and create a **competitive advantage** (Ehlers & Lazenby, 2006:99-100; Porter, 1998:17; Pitts & Lei, 2003:56; Pearce & Robinson, 2003:75).

The bread industry has very intense rivalry among the competitors. Product innovations such as foil packaging, vitamin-enriched bread and longer-life bread differentiate brand names from one another.

- **Substitute products**

Substitute products create an immediate **threat to profitability** (Ehlers & Lazenby, 2006:99; Pearce & Robinson, 2003:74). A substitute product as stated by Ehlers and Lazenby (2006:99) is "if a product or service from another industry can be used to perform similar functions as a product or service in the industry".

Substitute products for bread can be “mealiepap”, rice, potatoes, provita, etc. In the bread industry, the threat of substitute products is a real one. The increase in bread prices may have encouraged the lower income consumers to **switch** to imported staples such as rice, or to lower value added products, such as flour (Watkinson & Makgetla, 2002:6).

- **Bargaining power of buyers**

The **buyers** refer to the customers of the organisation. Buyers form a strong force because they always demand lower prices at a higher quality. When buyers have a large amount of bargaining power they can influence the **price** by forcing it **down** (Ehlers & Lazenby, 2006:98; Porter, 1998:24; Pearce & Robinson, 2003:73).

Buyers have bargaining power when (Ehlers & Lazenby, 2006:98-99; Pearce & Robinson, 2003:73):

- The seller sells large quantities of its products to a buyer. An example is: Pick ‘n Pay purchases a large quantity of bread from different bakeries, therefore Pick ‘n Pay has a large amount of bargaining power.
- The sales of the product represent a large portion of the seller’s revenue.
- Customers do not incur costs when switching from one product to another. It costs nothing for a customer to purchase a different brand of bread.
- The industry’s products are undifferentiated or standardised. An example in South Africa is MTN and VodaCom. Both deliver the same standardised product. The customers have a strong force of bargaining power to obtain the lowest prices.

In the bread industry, customers have a strong force of bargaining power and therefore have a strong impact on the price of bread.

- **Bargaining power of suppliers**

Suppliers are the organisations supplying the raw materials, machinery, etc. to participants in the industry. The supply of labour also forms part of the supplier group (Ehlers & Lazenby, 2006:97; Porter, 1998:27).

Michael Porter’s (1998:27) opinion is that “powerful suppliers can thereby **squeeze profitability** out of an industry unable to recover cost increases in its own prices.”

A supplier group is powerful if (Ehlers & Lazenby, 2006:97-98; Porter, 1998:27-28; Pearce & Robinson, 2003:73):

- It is dominated by a few large organisations.
- There are no substitute products that customers can purchase. Bread is manufactured by using flour milled from wheat. No substitute product can be used economically to produce bread.
- The supplier's product is crucial to the buyer's business. A bakery cannot produce bread without flour.

The supplier group in the bread industry, namely wheat millers, is powerful. In the case of Bread Factory A, the price of flour is determined by the holding company in favour of Miller A. Bread Factory A does not really have a choice.

3.3.2 Remote environment analysis

The remote environment analysis consists of a PEST(EL) analysis.

3.3.2.1 PEST(EL) analysis

PEST or **PESTEL** is an acronym for **political, economic, socio-cultural, technological, environmental** and **legal** analysis (Botten & Sims, 2004:29; Anon, 2005a:33; Pearce & Robinson, 2003:58). PEST analysis is the "industry standard" that is required when performing an industry analysis, but some writers prefer the more detailed PESTEL analysis (Botten & Sims, 2004:29).

Each of these factors has to be considered by evaluating its impact on the organisation. Take into account that these factors should not be considered on its own. For instance, political decisions do affect economic factors. Similarly, technological factors will only have an impact if they are socially accepted and permitted politically (Anon, 2005a:33).

Examples of factors are (Botten & Sims, 2004:29; Pearce & Robinson, 2003:68):

Political factors:

- Form of government
- Strength of opposition parties and groups
- Foreign trade regulations

- Government stability.

Economic factors:

- Level of economic development
- Taxation system
- Interest rates
- Inflation
- Unemployment disposable income.

Socio-cultural factors:

- Demographics
- Income distribution
- Lifestyle changes
- Attitudes to work and leisure
- Consumerism.

Technological factors:

- Government spending on research
- New discoveries / development
- Rates of obsolescence.

Ecological factors:

- Protection laws
- Energy consumption issues
- Waste disposal.

Legal factors:

- Monopolies legislation
- Effectiveness of legal system
- Employment law, product safety, etc.

3.3.3 Operating environment analysis

The operating environment is also called the **competitive** or **task** environment. The factors in the competitive environment that affect an organisation's success include the organisation's **competitive position**, the composition of its **customers**, the organisation's **reputation** among

suppliers and creditors, and its ability to attract **capable employees**. An organisation has much **more control** over the operating environment than it does over the remote environment. The organisation should therefore be more proactive in dealing with the operating environment (Pearce & Robinson, 2003:82).

3.3.4 Generic strategies

Organisations have to either take **offensive** or **defensive** action to create a **defendable position** in their industry and to cope successfully with the five competitive forces discussed in 3.3.1.1 (page 39). Each organisation has to identify a unique **competitive strategy** that reflects its particular circumstances (Porter, 1998:34).

Porter (1980) identified three generic strategy models that an organisation can use to create a competitive advantage and outperform other organisations within the same industry (Botten & Sims, 2004:259; Porter, 1998:34; Taylor, 2005:38):

- Overall cost leadership.
- Differentiation.
- Focus.

An **overall cost leadership** strategy concentrates on maintaining the lowest cost relative to competitors (Botten & Sims, 2004:259; Porter, 1998:35; Horngren *et al.*, 2006:457). An organisation can achieve this by maintaining very tight cost control (Porter, 1998:35).

A **differentiation** strategy is achieved by creating a perception that a product or service is unique with their industry (Botten & Sims, 2004:259; Porter, 1998:37; Horngren *et al.*, 2006:457). Porter (1998:37) lists approaches to differentiating: “Design or brand image (Mercedes in automobiles), technology (Hyster in lift trucks; Coleman in camping equipment), features (Jenn-Air in electric ranges), customer service (Crown Cork and Seal in metal cans), dealer network (Caterpillar Tractor in construction equipment), or other dimensions”.

The last generic strategy is focusing on serving a narrow strategic target like a particular buyer group, segment of a product line or geographic market, more effectively than competitors who competes more broadly (Botten & Sims, 2004:259; Porter, 1998:38).

Figure 3.2 combines the Porter's five forces model with the generic strategies that can help an organisation establish a competitive advantage and to maintain it.

Figure 3.2: Combining the five forces model with generic strategies

Force	How to mitigate the impact of this force	Generic strategies
1.Potential entrants	Build barriers to entry to deter new rivals	Economies of scale and lowest unit cost are barriers to entry (cost leadership), as are powerful brands and loyal customers (differentiation)
2.Buyer power	Either tie in your buyers through contracts, or loyalty, or increase the number of buyers so that you are less dependant on anyone	Buyers are less likely to leave you if they clearly value what you are offering - e.g. low prices (cost leadership) or high quality (differentiation)
3.Substitutes	Ensure that your product is unique, and, therefore hard to substitute	Quality / innovation – e.g. patents - are hard to copy (differentiation)
4.Supplier power	Either use only raw materials that are available from a range of suppliers, or widen your pool of suppliers	Cost leaders tend to be large owing to the economies of scale needed for this, which reduces supplier power. By using only undifferentiated supplies, you can easily switch suppliers, thereby reducing their bargaining power.
5.Competitive rivalry	Win competitive battles with your rivals	Cost leadership gives you the upper hand in any price war. If customers believe your product to be differentiated, they will not see your competitors' products as viable alternatives

Source: (Taylor, 2005:38)

3.4 INTERNAL ENVIRONMENT

The second ingredient that is critical to the success of a strategy is that the strategy must place **realistic requirements** on an organisation's resources. This requires a realistic analysis of an organisation's resources (Pearce & Robinson, 2003:123). A **SWOT analysis** and a **value-chain analysis** will provide the required information of the internal environment.

3.4.1 SWOT analysis (corporate appraisal)

SWOT is an acronym for the internal **strengths** and **weaknesses** and the environmental **opportunities** and **threats** facing an organisation (Pearce & Robinson, 2003:134; Ehlers & Lazenby, 2006:62; Botten & Sims, 2004:68). According to Botten and Sims (2006:68) “the SWOT analysis enables management to **interpret the information** they have gathered about their organisation and its environment in relation to how it affects the ability of the business to reach its **strategic goals**”.

The information gathered in the **external environmental analysis** (refer 3.3, page 39) provides the information necessary to identify the **opportunities** and **threats** in an organisation’s environment (Pearce & Robinson, 2003:134).

The **strengths** and **weaknesses** are information regarding what the organisation has or does not have in terms of **resources** and **capabilities** (Ehlers & Lazenby, 2006:63).

The **objective** of a **good strategy** will be to focus on **increasing** its **strengths**, **optimising opportunities**, **decreasing** the influence of its internal **weakness** and external **threats** (Ehlers & Lazenby, 2006:63; Pearce & Robinson, 2003:134).

The SWOT analysis captures the **knowledge** of the people who understand the various facets of the business, i.e. the managers (Botten & Sims, 2004:71). It is important that a **systematic discussion** of an organisation’s **resources** and basic **alternatives** takes place, because what one manager sees as an opportunity, another might view as a threat (Pearce & Robinson, 2003:135).

SWOT analysis is an aid to **strategic analysis**.

3.4.1.1 Strengths

A **strength** is a **resource** or **capability** that an organisation has relative to its competitors. It is a distinctive competence that gives an organisation a competitive advantage in their industry (Pearce & Robinson, 2003:135; Ehlers & Lazenby, 2006:63; Botten & Sims, 2004:68). An organisation’s strength arises therefore from the resources and capabilities within the organisation (Pearce & Robinson, 2003:135).

Examples of strengths are skilful employees, large financial reserves, a quality product or service and strong reputation (Ehlers & Lazenby, 2006:64).

3.4.1.2 Weaknesses

“A **weakness** is a **limitation** or **deficiency** in one or more resources or competencies relative to competitors that impedes a firm’s effective performance” as stated by Pearce and Robinson (2003:135). A weakness makes an organisation vulnerable to competitors (Botten & Sims, 2004:68).

Examples of weaknesses are limited financial resources, poor marketing skills, poor after-sales service and negative organisational culture (Ehlers & Lazenby, 2006:64).

3.4.1.3 Opportunities

An **opportunity** refers to a major **favourable** situation in the organisation’s environment (Ehlers & Lazenby, 2006:64; Pearce & Robinson, 2003:135). It represents a strategic challenge to an organisation (Botten & Sims, 2004:68).

Examples of opportunities are the discovery of a new product innovation, decrease in the interest rates (if organisation has a loan obligation) and closing down of one of its major competitors (Botten & Sims, 2004:68; Ehlers & Lazenby, 2006:64).

3.4.1.4 Threats

A **threat** is a major **unfavourable** situation in the organisation’s environment (Ehlers & Lazenby, 2006:65; Pearce & Robinson, 2003:135).

Examples of threats are unrest among the labour force, entrance of new competitors and slow market growth (Botten & Sims, 2004:68; Ehlers & Lazenby, 2006:65).

3.4.2 Value chain analysis

The Chartered Institute of Management Accountants (CIMA) defines a **value chain** as the business activities that add **value**, in the perspective of the end user, to the products or services produced by an organisation (Botten & Sims, 2004:74).

Pearce and Robinson (2003:137) agree with CIMA on the definition of a **value chain** but add that inputs are transformed into outputs by a chain of activities.

Ensign (2001:21) on the other hand states that a **value chain** conceptualises the activities that are needed in order to provide a product or service to a customer.

A **value chain** is therefore a chain of activities that adds value to an organisation's products or services and ultimately adds value to customers.

Michael Porter, the "father" of the Five Forces model (refer 3.3.1.1, page 39), developed the concept of the **value chain** (Botten & Sims, 2004:74; Ehlers & Lazenby, 2006:70; Ensign, 2001:21).

According to Kosior and Strong (2006:358) "the ultimate **customer**, once thought of as the "end of the line", now dictates the cost and performance requirements of logistical conduits". Customers and customer satisfaction has therefore become the focus of organisations and the reason for the optimisation of its value chain.

The examination of the value chain, also known as **value chain analysis**, is a systematic method of performing an internal analysis to determine which business activities really add value to the products or services of an organisation (Ehlers & Lazenby, 2006:70; Botten & Sims, 2004:74; Pitts & Lei, 2003:64).

Value chain analysis can be a useful tool that an organisation that seeks to achieve **competitive advantage** can use (Ensign, 2001:21).

The meaning of **value** in value chain analysis is described by Ehlers and Lazenby (2006:71) as the monetary value that customers are prepared to pay for what the organisation is providing them. **Value creation** on the other hand is seen through the eyes of the shareholders (Rathbone, 2006:40).

According to Porter, there are **two routes** through which an organisation can create **customer value** and therefore generate superior competitive performance (Botten & Sims, 2004:74; Ehlers & Lazenby, 2006:70; Pearce & Robinson, 2003:137):

- **Product differentiation** (refer Porter's generic strategies 3.3.4, page 45): by being more innovative than its competitors in finding ways to be unique and / or different.

- **Cost leadership:** by providing their customers with a lower cost product or service as their rivals but at the same quality of product or service.

The **generic value chain model** that Porter developed for a manufacturing organisation can be grouped into two categories, namely **primary activities** and **support activities** (Botten & Sims, 2006:75; Ensign, 2001:21; Ehlers & Lazenby, 2006:71; Pitts & Lei, 2003:69).

3.4.2.1 Primary activities

The **primary activities** are those activities that create the physical product or service by transforming the raw materials into products or services enjoyed by customers (Pitts & Lei, 2003:70; Ehlers & Lazenby, 2006:71).

Primary activities are (Botten & Sims, 2004:74; Ehlers & Lazenby, 2006:70; Pearce & Robinson, 2003:137):

- **Inbound logistics:** The activity that is associated with the receipt, handling and storage of materials and inventory. This includes warehousing, inventory control and vehicle scheduling.
- **Operations:** Activity that transforms the inputs into the final product. This activity is concerned with the generation, manufacture and / or production of products or services. Specific activities include machining, packaging, testing and equipment maintenance.
- **Outbound logistics:** This activity relates to the distribution of products or services to the distribution channels or customers directly. It includes finished goods warehousing, delivery vehicle operation and order processing.
- **Marketing and sales:** Providing customers with inducements to get them to purchase the product or service offered. It includes advertising and promotion, pricing and sales force issues.
- **Service:** Customer service to make sure that the value of a product is maintained or enhanced. It includes services such as installation, maintenance and training.

3.4.2.2 Support activities

These activities provide **support** to the primary activities. The performance of the primary activities depends heavily on the support activities. The **costs** of the support activities are usually classified as **manufacturing overhead costs** (refer 2.3.6, page 19), because the costs cannot be directly attributed to the products (Botten & Sims, 2006:75; Ehlers & Lazenby, 2006:72; Pitts & Lei, 2003:74).

Support activities are (Botten & Sims, 2004:75; Ehlers & Lazenby, 2006:72; Pearce & Robinson, 2003:137):

- **Procurement:** This activity refers to the purchasing of the necessary inputs of the organisation. The purchasing function includes the procedures of dealing with suppliers, billing systems and discounts.
- **Technology development:** Technology is very important for all the activities. There are rapid technological changes present in almost every industry. Technology includes a broad range from software found in computers, standard operating procedures used to manage a factory and customer servicing procedures.
- **Human resource management:** Human resource management refers to the working with people throughout an organisation. This activity focuses on recruitment, training, development, retention and compensation of employees. This support activity is extremely important to an organisation.
- **Firm infrastructure:** These activities assist all the value-adding functions in an organisation. It includes general management, finance, accounting and legal affairs.

3.4.2.3 Conducting a value chain analysis

In order to conduct a **value chain analysis**, the company's operations are **divided** into **specific activities** or business processes, grouping them similarly to the primary and support activities (Pearce & Robinson, 2003:139).

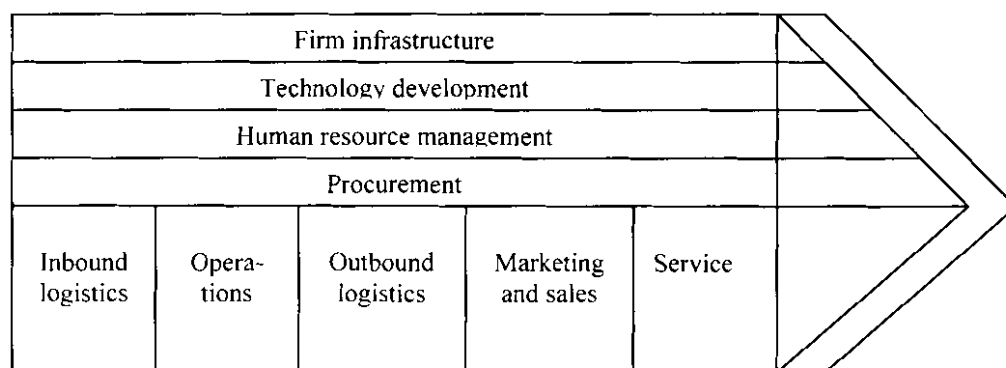
Each activity in the value chain **incurs costs**. After dividing the operations into activities, the next step is to **determine** and **attach** these costs to each activity. Through this process of

determining and assigning costs, the activities that create **cost advantages** or **disadvantages** are identified (Pearce & Robinson, 2003:141; Ehlers & Lazenby, 2006:71). According to Pearce and Robinson (2003:141), it “may also bring attention to several sources of **differentiation advantage** relative to competitors”.

The last step in conducting a value chain analysis is to **examine** the value chain that has been documented (Pearce & Robinson, 2003:141). **Opportunities** for **cost reduction** will be identified and value enhanced, or alternatively value may be enhanced when determining where **differentiation** takes place (Botten & Sims, 2004:78; Ehlers & Lazenby, 2006:71). A value chain is an excellent framework by which managers can determine the **strengths** and **weaknesses** of each activity by comparing it to competitors (Pitts & Lei, 2003:69).

Porter’s generic value chain is depicted in Figure 3.3.

Figure 3.3 Porter’s value chain



Source: (Botten & Sims, 2004:75)

3.5 SUMMARY

The aim for any organisation should be to **maximise shareholder value** taking into consideration the needs of all of its stakeholders, including the environment, suppliers, buyers, employees and creditors. An organisation can only achieve this by gaining a competitive advantage and outperforming their rivals.

This chapter focused on how an organisation can achieve a **competitive advantage**. First, attention was given to the formulation of a **strategy**. Strategic planning is imperative as it

provides a map towards that destination the organisation wants to travel. It forms the basis against which all strategic decisions should be measured, asking whether we are still on the right track to reach our destination.

Secondly, in order for an organisation to gain a competitive advantage, the **external** environment should be analysed. Two commonly used methods to analyse an organisation's **external environment** are discussed, namely Porter's five forces model and a PEST(EL) analysis. The external environmental factors play a significant role in the strategic decisions that an organisation makes. Special consideration should be given to the industry that the organisation operates in.

Lastly, the analysis of the internal environment of an organisation was discussed. The organisation should first consider what they are capable of by referring to their available resources – strengths, weaknesses, opportunities and threats (SWOT analysis). The organisation should also compile and produce a value chain analysis in order to focus on the value-adding activities and reducing and eliminating value-destroying activities.

When an organisation has formulated strategic objectives by referring to its mission, vision, external and internal environments, it will be a focused organisation on its way to building a **competitive advantage**.

Thereby the second specific objective (paragraph 1.3.2.2, page 6) has been reached, namely to conceptualise competitive advantage from the literature.

CHAPTER 4

TRANSFER PRICING

4.1 INTRODUCTION

The main ingredient, as well as the main manufacturing cost, in the manufacturing of bread is **flour**. According to the General Manager of Bread Factory A (2006), flour contributed to 75% of the manufacturing costs of all the types of bread for the financial year ending 2006.

The Longman Business English Dictionary (2001, 4:369) defines **transfer price** as “the price for something that is sold by one part of an organisation to another part, rather than to a final buyer”.

Hornigren *et al.* (2006:764) state that a **transfer price** is the price charged by one division or department to another division or department of the same organisation for a product or service supplied. Garrison *et al.* (2006:568) agree with this definition.

The transfer price at which the selling division sells and at which the buying division purchases, has a direct **effect** on each organisation’s **profits**. A high transfer price results in high profits for the selling division and low profits for the buying division, whereas a low transfer price has the opposite effect. The selling division would therefore prefer to have the transfer price as high as possible and the buying division would prefer the transfer price as low as possible. The established transfer price creates **revenue** for the selling division and **purchase cost** for the receiving (purchasing) division (Hilton *et al.*, 2006:790; Garrison *et al.*, 2006:568; Drury, 2004:883; Hornigren *et al.*, 2006:764; Edmonds *et al.*, 2006:372; Sahay, 2003:177-192).

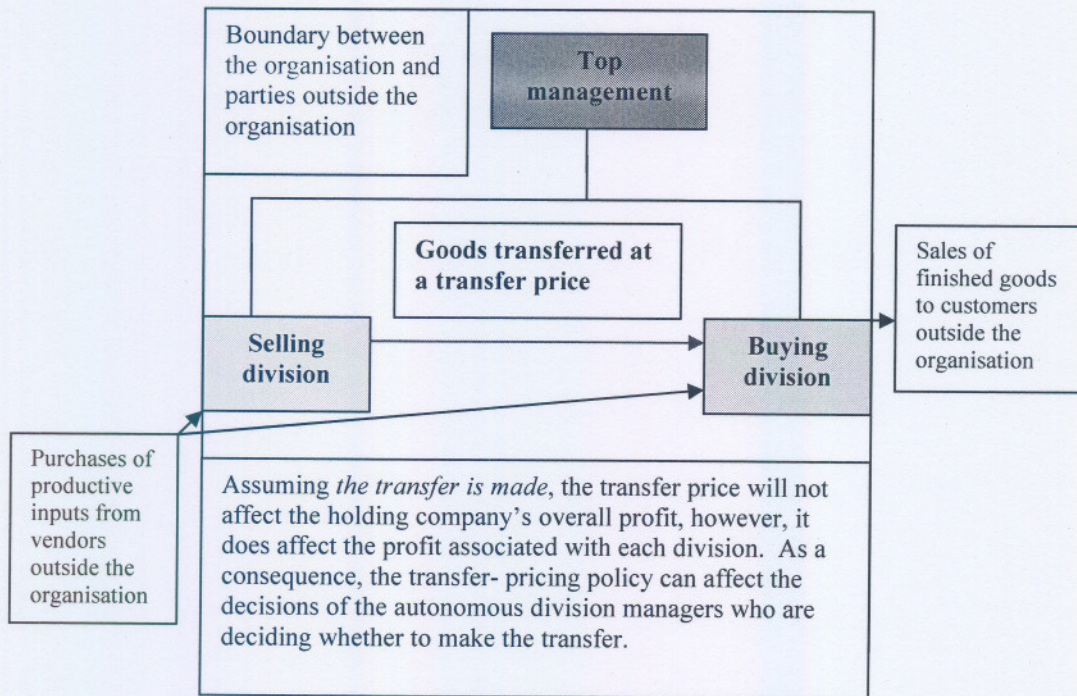
If the transfer is made, the transfer pricing policy has **no effect** on the **holding company’s** overall **financial performance**, because the sale and purchase are classified as intergroup sales and purchases. The determination of the transfer price is, however, **crucial** to the financial performance of the separate **affiliated companies** (Garrison *et al.*, 2006:568; Hilton *et al.*, 2006:790). If the affiliated companies’ performance is evaluated using performance measures such as return on investment (ROI), residual income (RI) or any other measure using reported profits, the transfer price affects these reported performance (Hilton *et al.*, 2006:791; Drury, 2004:885). Consequently, the transfer pricing policy can affect the

performance-related incentives of the divisional managers of the affected divisions (Hilton *et al.*, 2006:790).

One of the main objectives of establishing a transfer price according to Vigario (2005:244) is to “promote **divisional autonomy** without prejudice to the group”. This means that transfer prices should be set to establish incentives for autonomous divisional managers to make decisions that still support the group’s overall **strategies** and **goals** and fit its organisational structure (Hilton *et al.*, 2006:791; Horngren *et al.*, 2006:765).

Figure 4.1 illustrates the transfer-pricing scenario.

Figure 4.1: The transfer-pricing scenario



Source: (Hilton *et al.*, 2006:790)

4.2 METHODS FOR DETERMINING TRANSFER PRICES

There are three methods for determining transfer prices (Horngren *et al.*, 2006:765; Garrison *et al.*, 2006:568; Drury, 2004:885):

- Market-based transfer prices.
- Cost-based transfer prices.
- Negotiated transfer prices.

According to Cheng (2002:1-8) there is a fourth method for determining transfer prices, namely **dictated** transfer prices. This method indicates that transfer prices are dictated by top management.

An illustration will be used in order to better explain the different methods of determining transfer prices. Reference will be made to the figures indicated in the illustration.

Illustration: Information on Division A and Division B

Division A and Division B are divisions of the same company. Division A purchases wheat from farmers and mills the wheat until flour is the final product. Division A sells this flour to Division B.

Division A incurs the following standard costs:

Variable costs per 65 kg bag of flour:	R 35
Direct material: Wheat	R 30
Direct labour	R 3
Manufacturing overheads	R 2
Fixed costs:	R40 000 per month
Costs from other business functions:	
Distribution	R20 000 per month
Selling and administrative expenses	R20 000 per month

Division A's monthly production capacity of 65 kg flour is 20 000 bags. Division A sells this flour on the outside market at R45 per 65 kg bag.

Division B can purchase a 65 kg bag of flour on the outside market at R44 per bag. Division B's monthly consumption is 10 000 bags of 65 kg flour.

The following unit costs can be calculated based on **production capacity** of 20 000 bags of 65 kg of flour:

Fixed costs per unit:	$R40\,000 / 20\,000 = R2$
Distribution costs per unit:	$R20\,000 / 20\,000 = R1$
Selling and administrative expenses per unit:	$R20\,000 / 20\,000 = R1$

The different methods for determining transfer prices will now be discussed.

4.2.1 Market-based transfer prices

Setting the transfer price at an external **market price** is **ideal** where a market exists for the products transferred (Vigario, 2005:422; Hilton *et al.*, 2006:794; Garrison *et al.*, 2006:573; Drury, 2004:886). The market price can also be the price at which the selling division sells the product to **external customers** (Drury, 2004:885; Horngren *et al.*, 2006:765).

Another way to determine the market price will be to obtain the price a **competitor** is offering for a similar product (Drury, 2004:885).

The market-based transfer method will **not be applicable** where no competitive market for the product of the selling division exists (Drury, 2004:888; Garrison *et al.*, 2006:573; Horngren *et al.*, 2006:768).

In the case study, the price that Miller A sells flour to **external customers** (customers that do not form part of the group), will be regarded as the market price.

4.2.1.1 Advantages of using market-based transfer prices

The **advantages** of using market-based transfer prices are that it motivates divisional managers to maximise the division's profit (Horngren *et al.*, 2006:768), and divisional profits can be evaluated against direct competitors because the profit is a reflection of what the divisional profit would have been if the product were sold on the outside market (Drury, 2004:886; Garrison *et al.*, 2006:572; Horngren *et al.*, 2006:768).

4.2.2 Cost-based transfer prices

Management may choose to set the transfer price based on the **cost** of manufacturing the product. This is the **least desirable** transfer option because the incentive to control cost is lost if an organisation's goal is not to be profitable (Edmonds *et al.*, 2006:374).

Examples of cost-based transfer prices include using **variable manufacturing cost** (refer to paragraph 2.3.1, page 15), **variable and fixed manufacturing cost** (refer to paragraph 2.3.1, page 15 and paragraph 2.3.2, page 16), **cost-plus a mark-up** and **full cost of the product** as basis for determining transfer prices. Full cost of the product includes all manufacturing costs plus costs from other business functions such as research and development, distribution and customer service (Horngren *et al.*, 2006:765; Vigario, 2005:422; Drury, 2004:885).

The following is an example of cost-based transfer prices (Researcher).

Example 4.1: Cost-based transfer prices

Refer to the information in the illustration, page 56.

The transfer price from Division A to Division B can be calculated by applying the following methods:

- Transfer price based on variable cost: $R35$
Division A uses only **variable cost** as a transfer price.
- Transfer price based on variable and fixed cost: $(R35 + R2) = R37$
Division A uses **variable** and **fixed cost** as a transfer price.
- Transfer price based on variable cost plus a mark-up of 10%: $R35 + R3.50 = R38.50$
Division A bases its transfer price on **variable cost** and adds a **mark-up** of 10% on the variable cost.
- Transfer price based on full cost: $R37 + R1 + R1 = R39$
The full cost (variable cost, fixed cost, distribution costs and selling and administrative costs) is used as a transfer price.

- Transfer price based on full cost plus a mark-up of 10%: $R39 + R3.90 = R42.90$
Division A bases its transfer price on full cost plus a mark-up of 10%.

The following conclusions can be made:

- If Division A transfers at **variable cost** and Division B is its only customer, the revenue from the transfer will not be sufficient to cover the fixed cost and costs from other business operations. Division A will therefore incur a **loss**.
- If Division A transfers at **variable and fixed cost** and Division B is its only customer, the revenue from the transfer will not be sufficient to cover the costs from other business operations. Division A will again incur a **loss**.
- If Division A transfers at **variable cost plus a mark-up of 10%**, the revenue of R35.50 per 65 kg bag of flour, will not be sufficient to cover the full cost of R39 per 65 kg bag of flour. Division A will incur a **loss** per bag of R3.50.
- If Division A transfers at **full cost**, the revenue will be sufficient to cover all the costs. Division A will break even and therefore make **no profit**.
- If Division A transfers at **full cost plus a mark-up of 10%**, the revenue will be sufficient to cover all the costs and also show a **profit**. This is the **best transfer pricing policy alternative** based on cost.

4.2.2.1 Drawbacks of using cost-based transfer prices

To calculate cost-based transfer prices is relatively simple, but it has some major defects (Garrison *et al.*, 2006:572):

- **Bad decisions** and therefore **sub-optimisation** can be the result of using cost, particularly full cost, as a transfer price. Refer to example 4.1 (page 58) where the full cost of flour can never be less than R39 per bag (R35 variable cost per bag + R2 fixed cost per bag at full capacity + R2 distribution cost and selling and administration costs). If Division B can purchase a 65 kg bag of flour from an outside supplier at less than R39, say R37, *and* the transfer price was bureaucratically set at full cost (R39), Division B would never want

to buy flour from Division A since it can purchase it from another supplier at a lower cost. However, from the point of view of the company as a whole, flour should be transferred from Division A to Division B whenever Division A has idle capacity. The reason for this is that when Division A has **idle capacity** (refer example 4.2, page 61), it only costs the company R35 variable cost per 65kg bag of flour, but it costs Division B R37 to purchase from outside suppliers.

- When the organisation uses a cost-based transfer price policy, Division A will **never** show a **profit** on an internal transfer (refer to example 4.2, page 61). The only division that will show a profit is when the buying division (Division B) sells bread to outside parties.
- The last defect that cost-based transfer pricing has is that it does **not provide an incentive to control costs**. If the actual costs of Division A are simply transferred from Division A to Division B, there is very little incentive to try and reduce costs. One way to overcome this is by using a standard costing system (refer paragraph 2.5.3, page 27).

4.2.3 Negotiated transfer prices

A **negotiated transfer price** is the result of negotiations between the selling and buying divisions (Hilton *et al.*, 2006:795; Garrison *et al.*, 2006:568). In some circumstances, a negotiated transfer price could be **more beneficial** than a market-based transfer price (Drury, 2004:893; Edmonds *et al.*, 2006:374). The managers involved have much **better information** about the potential costs and benefits of the transfer than other managers in the organisation it preserves the **autonomy** of the divisions and its preserves the notion of **fairness** (Edmonds *et al.*, 2006:374; Garrison *et al.*, 2006:568).

According to Ghosh (2000:1-30) the **dependent variables** when transfer prices are **negotiated** between trading divisions “were **perceived fairness** of the transfer pricing policy, **inter-divisional conflict**, the economic outcome measure of **firm profit**, and the **time taken** by the managers to negotiate an agreement (since time is an important economic resource to the manager) and firm profit efficiency”.

4.2.3.1 Drawbacks of using negotiated transfer prices

There are **drawbacks** to using negotiated transfer prices. The negotiations could lead to **disagreement** between managers (conflict) resulting in divisiveness. It takes **time** to

negotiate an agreement. The negotiated transfer price depends on the **negotiation skills** of the manager involved (Drury, 2004:894; Hilton *et al.*, 2006:796; Garrison *et al.*, 2006:568).

In order for the negotiations to work effectively, it is important that managers from both the selling and buying divisions have **equal bargaining power**. **Unequal bargaining power** exists when the selling division has limited outlet possibilities while the buying division can source the product from a number of suppliers. Another possibility that could result in unequal bargaining power is when the transfers form a large portion of one of the division's business, while for the other division the transfer is only a small portion of their business (Drury, 2004:893).

There is a **range** of acceptable transfer prices. This range is generally the range of transfer prices within which both divisions' **profits will increase** when a transfer occurs. The actual transfer price agreed to by the two divisions' managers will fall anywhere between these limits (Garrison *et al.*, 2006:568-569).

The calculation of the **lowest and highest acceptable transfer prices** will be illustrated by example 4.2 (Garrison *et al.*, 2006:569-571, Adapted).

Example 4.2: Lowest and highest acceptable transfer prices

Refer to the information in the illustration, page 56.

The selling division's (Division A) lowest acceptable transfer price

Division A will only be interested in a transfer if its profit increases. Clearly the transfer price must not fall below the variable cost of R35 per 65kg bag of flour. In addition, if Division A has insufficient production capacity to fill Division B's order, then it would have to give up some of its regular sales. Division A would expect to be compensated for the contribution margin (sales price less variable cost) on these lost sales. In sum, if the transfer has no effect on fixed costs, then from Division A's point of view the transfer price must cover both the variable costs of producing the transferred units and any contribution margin forgone from lost sales (Garrison *et al.*, 2006:569; Horngren *et al.*, 2006:773).

Division A's perspective:

$$\text{Transfer price} \geq \text{Variable cost per unit} + \frac{\text{Total contribution margin on lost sales}}{\text{Number of units transferred}}$$

The buying division's (Division B) highest acceptable transfer price

Division B will only be interested in the transfer if its profit increases. If Division B has an outside supplier, the decision where to buy is simple. If Division A's price is less than the price offered by the outside supplier, Division B will buy from Division A (Garrison *et al.*, 2006:569; Horngren *et al.*, 2006:768).

Division B's perspective:

$$\text{Transfer price} \leq \text{Cost of buying from outside supplier}$$

Selling division with idle capacity

Idle capacity refers to the **excess production capacity** that Division A has for which **no market**, either internal or external, **exists**. Suppose that Division A is only selling 7 000 bags of 65 kg flour a month to external customers. That leaves unused capacity of 13 000 bags of 65 kg flour a month – more than enough to satisfy Division B's requirement of 10 000 bags of 65 kg flour a month. The range of transfer prices that would be considered by both divisions with the transfer of 10 000 bags of 65 kg flour a month can be calculated as follows (Garrison *et al.*, 2006:569-570; Horngren *et al.*, 2006:775):

1. The selling division, Division A, will be interested in the proposal only if:

$$\text{Transfer price} \geq \text{Variable cost per unit} + \frac{\text{Total contribution margin on lost sales}}{\text{Number of units transferred}}$$

Since Division A has sufficient idle capacity (13 000 bags), there are no lost external sales. The variable cost per 65 kg bag of flour is R35, therefore the **lowest acceptable transfer price** as far as Division A is concerned is also **R35**.

- The buying division, Division B, can buy similar flour from an outside supplier at R44. Therefore, Division B would be unwilling to pay more than R44 per 65 kg bag of flour for Division A's flour.

Transfer price \leq Cost of buying from outside supplier = **R44**

- Combining the requirements of both the divisions, the range of acceptable transfer prices in this situation is:

R35 \leq Transfer price \geq R44

The managers from both divisions should now **negotiate** on a transfer price within this range.

Selling division with no idle capacity

Suppose that Division A has no idle capacity; it is selling 20 000 bags of 65 kg flour to external customers at a price of R45 per 65 kg bag of flour. This means that in order for Division A to fill Division B's order, it will have to divert 10 000 bags of 65 kg flour from its external customers. The range of transfer prices that would be considered by both divisions with the transfer of 10 000 bags of 65 kg flour a month can be calculated as follows (Garrison *et al.*, 2006:570-571; Horngren *et al.*, 2006:775):

- The selling division, Division A, will be interested in the proposal only if:

$$\text{Transfer price} \geq \frac{\text{Variable cost}}{\text{per unit}} + \frac{\text{Total contribution margin on lost sales}}{\text{Number of units transferred}}$$

Since Division A has **no idle capacity**, there **are lost external sales**. The contribution margin on these lost external sales is R10 (R45 – R35) per bag of 65kg flour.

$$\text{Transfer price} \geq \text{R } 35 + \frac{\text{R}10 \times 10\,000}{10\,000} = \text{R}35 + \text{R}10 = \text{R}45$$

Therefore, as far as Division A is concerned, the transfer price must at least cover the revenue on the diverted sales of 10 000 bags, which is R45 per bag. This makes sense because the cost of producing the 10 000 bags of 65 kg flour is the same, whether they are

sold internally or on the external market. The only difference is that Division A loses some of the revenue if it transfers 10 000 bags at an amount less than R45 to Division B.

2. The buying division, Division B, can buy similar flour from an outside supplier at R44. Therefore, Division B would be unwilling to pay more than R44 per 65 kg bag of flour for Division A's flour.

Transfer price \leq Cost of buying from outside supplier = **R44**

3. Division A would insist on a transfer price of at least **R45** while Division B would refuse to pay anything more than **R44**. It is impossible to satisfy both managers simultaneously. **Thus there will be no agreement and no transfer will take place.** This does, however, make sense in terms of the company as a whole. The company would **sacrifice revenue of R45** per bag to **save costs of R44** per bag. The idea behind transfer pricing is that it is a mechanism for **dividing** between the buying and selling division any **profit** that the entire group earns as a result of the transfer. If the group **loses money** on the transfer, there will be **no profit** to split, and it will be impossible for the two divisions to come to an agreement.

Selling division has some idle capacity

Suppose that Division A can sell 15 000 bags of 65 kg flour on the external market. Division B can only purchase flour from one source, it cannot purchase 5 000 bags from one supplier and the other 5 000 bags from Division A.

To fill Division B's entire order of 10 000 bags of 65 kg flour, Division A must divert 5 000 bags of its external customers to Division B, and the rest of the 5 000 bags Division A can supply to Division B from its idle capacity. The range of transfer prices that would be considered by both divisions with the transfer of 10 000 bags of 65 kg flour a month can be calculated as follows (Garrison *et al.*, 2006:571):

1. As before, Division A will be interested in the proposal only if:

$$\text{Transfer price} \geq \frac{\text{Variable cost per unit}}{\text{per unit}} + \frac{\text{Total contribution margin on lost sales}}{\text{Number of units transferred}}$$

Since Division A does not have sufficient idle capacity to fill the entire order of 10 000 bags, there are lost external sales. The contribution margin on these lost external sales is R10 (R45 – R35) per bag of 65 kg flour.

$$\text{Transfer price} \geq \text{R } 35 + \frac{\text{R}10 \times 5\,000}{10\,000} = \text{R}35 + \text{R}5 = \text{R}40$$

Therefore, as far as Division A is concerned, the transfer price must cover the variable cost of R35 plus the R5 cost on lost sales.

2. The buying division, Division B, would be unwilling to pay more than R44 per 65 kg bag of flour (external supplier's price) for Division A's flour.

$$\text{Transfer price} \leq \text{Cost of buying from outside supplier} = \text{R}44$$

3. Combining the requirements of both the divisions, the range of acceptable transfer prices in this situation is:

$$\text{R}40 \leq \text{Transfer price} \leq \text{R}44$$

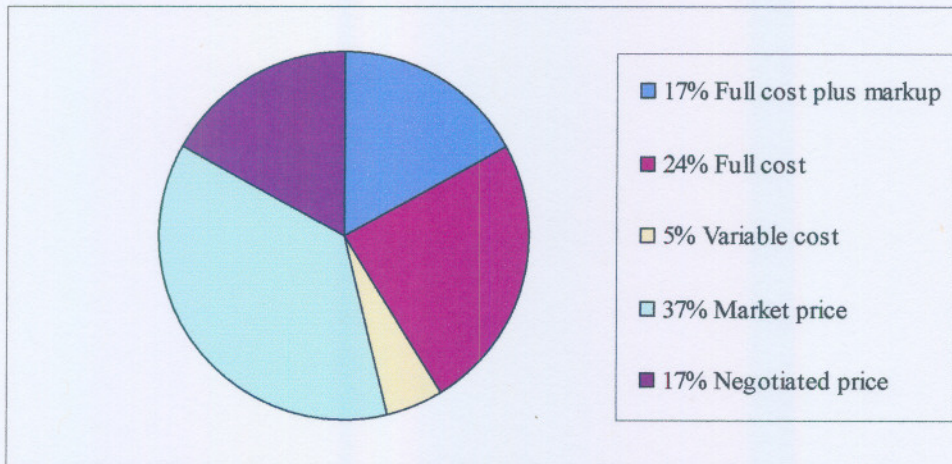
Again, the managers from both divisions should now **negotiate** on a transfer price within this range.

No outside supplier

If Division B has **no external supplier** to purchase flour from, the highest price it would be willing to pay would depend on how much Division B expects to earn, excluding the transfer price (Garrison *et al.*, 2006:571; Horngren *et al.*, 2006:776). If, for example, Division B expects to earn R60, after deducting its own costs, by selling bread manufactured from one bag of 65 kg flour, it would be willing to pay up to R60 per 65 kg bag of flour to Division A.

After the discussion of the different methods for determining transfer prices, it is interesting to know what method companies actually use to determine transfer prices. Figure 4.2 illustrates this.

Figure 4.2: What companies actually use as transfer prices



Source: (Tang, 1992:22-26)

4.3 SUMMARY

In this chapter the different methods for the determination of transfer prices were discussed. These methods include market-based transfer prices, cost-based transfer prices and negotiated transfer prices. Market-based transfer prices are the preferred method to determine transfer prices, while cost-based transfer prices are the least preferred method. Market-based transfer pricing uses the price that the selling division of an organisation can obtain externally for their product or service as the transfer price. Cost-based transfer prices are based on the selling division's cost of production of the product or service, while negotiated transfer prices are transfer prices negotiated between the selling and buying divisions of an organisation.

The determination of transfer prices in an organisation can be a very controversial issue and can create conflict amongst different divisions, especially if divisional managers' performance bonuses are measured based on the divisional performance.

Assuming the transfer does take place, the transfer pricing policy in an organisation has no direct effect on the profitability of the organisation as a whole, but when transfer prices are determined unfairly, it can lead to de-motivated staff which in turn can lead to lower productivity.

Thereby the third specific objective (paragraph 1.3.2.3, page 6) has been reached, namely to conceptualise transfer pricing determination from the literature.

CHAPTER 5

RESEARCH METHODOLOGY

5.1 INTRODUCTION

Henning *et al.* (2004:36) state that “(research) **methodology** refers to the coherent group of methods that complement one another and have the “goodness of fit” to deliver data and findings that will reflect the research question and suit the research purpose”.

Research methodology focuses on the process and the kinds of tools and procedures used (Babbie & Mouton, 2001:75).

Leedy and Ormrod (2005:12) define **research methodology** as the general approach the researcher follows while conducting the research. This approach prescribes, to some extent, the particular tools that the researcher selects.

The **research methodology** that the researcher follows refers to the methods (tools) used to obtain answers to the research questions and thus achieving the set **objectives**.

5.2 OBJECTIVES OF EMPIRICAL INVESTIGATION

The specific empirical objectives of this research (paragraph 1.3.2, page 6) are as follows:

- To calculate the profitability of the delivery routes in Bread Factory A (paragraph 1.3.2.5, page 6).
- To determine whether Bread Factory A follows the guidelines provided by the literature on competitive advantage (paragraph 1.3.2.6, page 6).
- To determine whether the most beneficial transfer price determination method is used in Bread Factory A (paragraph 1.3.2.7, page 6).

5.3 STUDY POPULATION

A Bread Factory affiliated to a holding company was selected as the research subject for this research project. Interviews were conducted with the General Manager and the Financial Manager of Bread Factory A. The un-audited financial data for the financial year ending in 2006 was examined and analysed as well as the 2006 marketing plan for Bread Factory A. A detailed discussion of the interviews conducted and the examination of the financial records and marketing plan of Bread Factory A will follow in the discussion of the measuring instruments used.

5.4 MEASURING INSTRUMENTS

The following measuring instruments were used during the research:

- Interviews with senior management of Bread Factory A.
- The examination and analysis of financial data for Bread Factory A.
- The examination and analysis of certain strategic documents of Bread Factory A.
- Quotations obtained from independent external suppliers for the supply of flour.

Detailed descriptions of these measuring instruments follow below.

5.5 THE INTERVIEW

The interview topic will be discussed using the following headings: objective of the interview; description of the interview; study sample of the interview; administration of the interview; analysis of the interview and the reliability and validity of the interview.

5.5.1 Objective of the interview

The **interview** is one of the most important, and essential, sources of useful information in a case study (Yin, 2003:89; Leedy & Ormrod, 2005:146).

The interview was used during the research as a medium to obtain relevant information about the environment that Bread Factory A operates in, including the external and internal environment. Another reason was to obtain a clearer understanding of the day to day

operations of Bread Factory A and the information that management uses to plan, control and make decisions.

5.5.2 Description of the interview

In a case study, the interviews conducted are **qualitative** and **semi-structured** in nature (Yin, 2003:89; Leedy & Ormrod, 2005:146; Sampson, 1972:10). When doing field research (as opposed to survey questionnaires), the less-structured interview is more **appropriate** (Babbie, 2004:300). The **advantage** of a semi-structured interview is that the researcher has a specific list of topics to cover and the time allocated to each topic is left to the discretion of the researcher. Any unexpected facts or unresolved questions can then be explored further, therefore maximising the collection of relevant data (Sampson, 1972:10; Babbie, 2004:300).

A **qualitative** interview is more guided conversations rather than structured questions (Yin, 2003:89; Babbie, 2004:300). The questions asked should be friendly and non-threatening in nature (Yin, 2003:90).

The questions asked in the interviews are **open-ended** (Yin, 2003:90; Babbie, 2004:244). Open-ended questions meaning that the respondent is asked his or her **own** answer to the question (Babbie, 2004:244). You can ask key respondents about the **facts** but also their **opinions** about the situation. Their insights about a situation can lead to more questions and can possibly identify other persons that the researcher can interview (Yin, 2003:90).

The following **guidelines** should be followed when **formulating** and **asking questions** (Breakwell, 1970:79-80; Babbie, 2004:246-249):

- Avoid formulating double-barrelled questions;
- Questions should not include jargon or complex words.
- Questions should be relevant.
- Questions should be short and to the point.
- Avoid biased and leading questions prompting respondents to answer in a certain way.

Leedy and Ormrod (2005:147) offer **guidelines on conducting a productive interview**:

- Identify some questions in advance: Questions should encourage respondents to converge about the topic addressed. When the conversation is drifting in an unproductive direction, the researcher should gently guide it back on its course.
- Ensure your interviewees are representative of the group.
- Find a suitable location: A quiet place with minimum distractions and interruptions.

- Establish and maintain rapport: Start the conversation with small talk until you are both relaxed and comfortable. These types of interviews are informal. Listen carefully and show interest in what the respondent is saying.
- Don not put words in the respondent's mouth: Listen carefully what the respondent is saying and let him or her say it in their own words.
- Record the respondent's answers: Whether using handwritten notes, shorthand or a tape recorder, ensure everything is captured that the person says, especially in an unstructured interview.
- Keep your reactions to yourself.
- Remember that you are not necessarily getting the facts.

Questions were asked based on a semi-structured interview questionnaire (appendix 1, page 138) compiled by the researcher.

5.5.3 Study sample of the interview

Qualitative, semi-structured interviews were conducted with:

- The General Manager of Bread Factory A; and
- the Financial Manager of Bread Factory A.

The respondents were chosen to conduct interviews with on the basis of the expertise and knowledge that they have acquired through years of service at Bread Factory A. Both the respondents have in-depth knowledge of the operations of Bread Factory A and the industry in which it operates.

5.5.4 Administration of the interview

The researcher planned the interviews as follows:

- Appointments were made with each respondent to interview them at Bread Factory A.
- The financial records of Bread Factory A were obtained beforehand to assist the researcher in preparing for the interview.
- The appointments were confirmed with the respondents beforehand.
- Interview questions were formulated by the researcher based on the financial records of Bread Factory A and based on the objectives defined by the researcher (paragraph 1.3, page 6).

The researcher has two tasks throughout the interview process (Yin, 2003:89):

- Following the line of inquiry as reflected by the researcher's case study design.
- Asking questions in an unbiased manner that will also serve the needs of the line of inquiry.

The researcher followed the following stages as suggested by Steinar Kvale (1996:88). He highlights seven stages in the complete interviewing process:

- *Thematising*: identifying and clarifying the purpose of the interviews and also the concepts that the researcher wants to explore (paragraph 5.2, page 67).
- *Designing*: designing the process that you will follow to accomplish your purpose (paragraph 1.5.2.1, page 7).
- *Interviewing*: performing the actual interviews.
- *Transcribing*: capturing and writing the actual text of the interviews. Once the interview process is complete, the researcher should create a written text of the interviews (Babbie, 2004:302).
- *Analysing*: interpreting the meaning of the gathered materials in relation to the purpose of the study (paragraph 6.2, page 78).
- *Verifying*: the reliability and validity of the materials should be checked (paragraph 5.5.6, page 72).
- *Reporting*: communicating your results to others (Chapter 7, page 122).

The analysis (stage five) of the interview will be discussed next.

5.5.5 Analysis of the interview

As highlighted by Steinar Kvale's seven stages (paragraph 5.5.4, page 71), the information gathered during the interview should be analysed.

After the completion of the interviews, the detailed notes taken by the researcher were written down in actual text to enable the researcher to interpret the information gathered. The data was first sorted into categories based on the objectives of the study (paragraph 1.3, page 6). The areas that still lacked information to complete the total understanding of the topic by the researcher were noted. The researcher contacted the respondents telephonically to ask for further information to clarify the unclear areas. Where appropriate additional financial records were sent via e-mail to the researcher, otherwise the additional information was

communicated by the respondents telephonically and the researcher **transcribed** this information (stage four of Steinar Kvale's seven stages, paragraph 5.5.4, page 71).

All the information gathered during the interviews was thoroughly documented by the researcher. This document was then sent to both respondents to check and agree that what was written was accurate.

5.5.6 Reliability and validity

Reliability is the extent to which a particular technique, applied repeatedly to the same object, consistently yields the same results each time. Validity should not be confused with reliability (Babbie, 2004:141; Neuman, 2006:188).

According to Henning *et al.* (2004:147), "**validity** asks the question whether, by using certain methods, we are investigating what we say we are investigating".

In conducting the interviews the researcher attempted to address the factors highlighted in table 5.1. These factors may influence the reliability of the results obtained (Woods & Catanzaro, 1988:136-137):

Table 5.1: Reliability of the interview

Threat	Specific examples	Control
Researcher's status position	Investigator may be well known to the participants. The gender of the investigator may influence the openness with which participants share information.	Clearly identify the researcher's role in the research setting. Describe the content and development of the researcher's role as the study evolves.
Participant choice	Intermediary may approach only those judged as "good" participants. Those who elect to participate may possess characteristics that differ from non-participants.	Encourage intermediaries to recruit participants non-selectively. Describe characteristics of participants and the decision processes involved in their choice to participate.
Social situation conditions	Participants may judge the appropriateness of information in relation to the context.	Delineate the context (social, physical and interpersonal) in which data is gathered. Record field notes immediately after data collection to ensure accurate recall of the structure and function of the context.
Methods of procedure	Replication of qualitative studies not possible. Constant comparative analysis may result in lack of agreement on description or composition of events.	Report precisely and thoroughly on the strategies used to collect, analyse and report data. Transcribe tape-recorded interviews verbatim. At least two coders perform theoretical coding. Phrase low inference descriptors in concrete, precise terms. Seek reaction to working analysis from selected participants. Compare findings with published studies and other investigators pursuing similar work.

Validity was ensured by taking into account the factors that could influence the validity of the interview. These factors are expounded out in table 5.2 (Woods & Catanzaro, 1988:137):

Table 5.2: Validity of the interview

Threat	Specific examples	Control
History and maturation	Particular problem when data is generated over time (e.g., longitudinal studies).	Identify those changes that are recurrent, progressive, and cyclical as the sources of change. Distinguish maturation from effects of intervening phenomena through use of constant comparative analysis and discrepant-case analysis.
Observer effects	Participants may become dependant on researchers for status enhancement or satisfaction or psychological needs. Participants may behave abnormally to put self in best light, lie, omit relevant data, or misrepresent their Claims. Researchers may see and report data as a function of their position.	Independent corroboration from multiple participants, discrepant-case analysis, and observation. Substantive and theoretical coding likely to elicit contrived responses. Comparison of data to theories and analytical models derived from literature. Presentation of data in relation to researcher's position and relationships. constant comparative analysis and validity checks with participants.
Selection and regression	Possible distortion of data by selection of participants (see above).	Recruit participants who meet purposive sampling criteria. Question commonly assumed meanings, utilise discrepant-case analysis, compare data across sampling categories.
Mortality	Longitudinal study requiring hours of commitment.	Remind participants often that they are experts in the topic of study (input valued). Provide consistent follow-up to participants in the form of information about the ongoing study. Make it easy for participants to notify the investigator of address changes (e.g., provide return postcards).

5.6 THE EXAMINATION OF THE FINANCIAL RECORDS

The examination of the financial records will be discussed under the following headings: objective; administration; analysis; and reliability and validity.

5.6.1 Objective

The financial records of Bread Factory A were examined to obtain information on the distribution costs of bread to customers and transfer prices paid to Miller A for flour purchases.

5.6.2 Administration

The Financial Manager of Bread Factory A provided the financial records. These financial records included:

- Profit and loss statement of Bread Factory A;
- sales volumes of Bread Factory A;
- inventory control sheets of Bread Factory A;
- detailed maintenance, diesel and oil costs per delivery vehicle for Bread Factory A;
- delivery route details; and
- details of inter-group purchases between Bread Factory A and Miller A.

The profit and loss statements for the financial year ended during 2006 were obtained. This included monthly figures as well as cumulative budget and actual figures. The other financial records were obtained for one month with detailed information about weekly operations. In congruence with the confidentiality agreement with Bread Factory A, the month used is not divulged. This was done in order to perform calculations based on a four-week period and then compare the calculations were compared with a month's figure on the profit and loss statement.

5.6.3 Analysis

The information obtained was examined and the income and costs relating to distribution costs and transfer prices were extracted according to the literature as discussed in Chapters two to four.

5.6.4 Reliability and validity

The researcher is unable to directly manipulate the financial data of Bread Factory A. The formulas and classifications that are used are described in the literature and have been developed by a panel of experts in the Management Accounting field. This ensures the **validity** of the formulas and classifications.

When referring to **reliability**, the assumption is made that the financial records provided by Bread Factory A, are accurate in their application of accepted accounting practice.

5.6.5 QUOTATIONS FROM INDEPENDENT EXTERNAL SUPPLIERS

The objective, administration, analysis and the reliability and validity of the comparison with competitor' prices will be discussed in this section.

5.6.6 Objective

Quotations obtained from direct miller competitors were examined in order to obtain information to determine the market-based transfer price (paragraph 4.2.1, page 57) of the different types of flour.

5.6.7 Administration

Independent (**Telephonic**) quotations of flour purchases were obtained by the researcher from direct miller competitors. These quotations were obtained for the different flour types. The same **credit terms** that apply to Bread Factory A with Miller A were used as one of the criteria. Another criterion is that the flour has to be **delivered** to Bread Factory A. The prices obtained therefore included a general delivery fee. The researcher did not provide the direct competitors with the quantities required per different flour type, in congruence with the confidentiality agreement with Bread Factory A.

5.6.8 Analysis

The direct miller competitor prices of the different flour types were compared with the actual transfer prices paid by Bread Factory A to Miller A.

5.6.9 Reliability and validity

The researcher is unable to directly manipulate the transfer prices paid by Bread Factory A to Miller A. The quotations obtained from the direct competitors are based on the same criteria that Bread Factory A purchases flour from Miller A. The quotations were obtained by the researcher. No direct manipulation is possible. This ensures the **validity** of the comparison. When referring to **reliability**, the assumption is made that the transfer prices provided by Bread Factory A are accurate.

5.7 SUMMARY

The research methodology followed while conducting this research was discussed in this chapter.

First the objectives of the empirical investigation were highlighted (paragraph 1.3.2, page 6) followed by a description of the study population.

The measuring instruments used during the research were interviewing, examination of the financial records and comparison with competitor prices. Each of these measuring instruments was discussed in detail. The objective of each of the measuring instruments were indicated, the administration thereof, analysis of the data obtained through each of the measuring instruments and the reliability and validity of using each measuring instrument.

CHAPTER 6

ANALYSIS OF RESULTS

6.1 INTRODUCTION

The general aim of this research was to determine whether general management accounting principles were applied in Bread Factory A with specific reference to the financial viability of the delivery routes (paragraph 1.3.1, page 6). Certain specific objectives were also set. These specific objectives included a literature study on cost assignment, cost behaviour and costing systems, and a literature study on competitive advantage (objectives 1.3.2.1 to 1.3.2.2, page 6). These literature studies were covered in chapters two and three. The literature study was completed in chapter four with a discussion on the determination of transfer prices (objectives 1.3.2.3, page 6).

This chapter discusses the results of the research under the following headings:

- 6.2. Interviews
- 6.3. Analysis of each cost item in the determination of delivery route contribution (objective 1.3.2.4, page 6)
- 6.4. Calculation of delivery route profitability (objective 1.3.2.5, page 6)
- 6.5. Competitive advantage (objective 1.3.2.6, page 6)
- 6.6. Comparison of transfer prices with third party quotations (objective 1.3.2.7, page 6)

6.2 INTERVIEWS

Semi-structured interviews were conducted with the General Manager and the Financial Manager of Bread Factory A. Questions were asked based on an interview questionnaire (appendix 1, page 138) compiled by the researcher. Due to the nature of a semi-structured interview, the questions asked were open-ended (paragraph 5.5.2, page 69). More questions were prompted by the discussions. The results of the interviews will now be discussed.

6.2.1 Manufacturing Process

According to the General Manager of Bread Factory A, the factory manufactures bread seven days a week. On Saturdays, manufacturing ends early in the morning, but commences again

in the late afternoon. Bread is delivered every day by the delivery vehicles, but on Sundays only about one third of the delivery vehicles deliver bread.

6.2.2 Financial Accounting System

Bread Factory A uses an in-house developed financial accounting system. According to the Financial Manager, this system is not very effective and most of the control, for example inventory control and dispatch summary (paragraph 6.2.5.4, page 85) is kept on Microsoft Excel.

6.2.3 Financial Reporting

The Financial Manager of Bread Factory A stated that financial reporting to the holding company occurs monthly. A very detailed profit and loss statement is prepared and reported monthly by the Financial Manager of Bread Factory A. The General Manager of Bread Factory A highlighted that the holding company prescribes the format of the profit and loss statement and income and costs are handled as per the holding company's instructions. According to the General Manager of Bread Factory A, the factory does not have a balance sheet. All the assets and liabilities are recognised by the holding company.

Internally, financial reporting occurs weekly as highlighted by the General Manager and Financial Manager of Bread Factory A. A week starts on Saturday and ends on the following Friday.

Most of the profit and loss statement items will now be discussed in detail.

6.2.4 Sales

According to the Financial Manager of Bread Factory A, the **delivered sales volumes** equal the net loaves sold. The reason is that except for a few individuals that purchase single loaves at Bread Factory A itself, all the loaves are delivered. According to the Financial Manager, the sales volumes are split per different classification of bread. The sales figures used in Bread Factory A's calculation of the delivery route contribution are the actual sales volumes, per classification, of the past week multiplied by the current selling price of that specific classification.

Sales will be discussed by referring to outside group sales, intergroup sales, intergroup purchases sold, sales of factored goods and stales, returns, write offs and discounts.

6.2.4.1 Outside group sales

According to the Financial Manager of Bread Factory A and the profit and loss statement, most of Bread Factory A's sales consist of sales to customers that do not form part of the group. They classify these sales as "outside group sales". The General Manager of Bread Factory A highlighted that these customers are spread over a radius of some 120km from Bread Factory A. The General Manager of Bread Factory A indicated that the factory does not have sales representatives as it is traditionally known. The drivers of the delivery vehicles have the responsibility to obtain sales orders from the existing customers on their delivery route. The driver can therefore be regarded as the sales representative for that delivery route.

The selling price of Bread Factory A's bread is determined and set by Bread Factory A itself, according to the General Manager of Bread Factory A. The selling price is determined based on competitors' pricing and the cost of production. The General Manager and Financial Manager of Bread Factory A agreed that some customers receive discounts (refer paragraph 6.2.4.6, page 81).

Customers have a number of options to pay for purchases, according to the Financial Manager, namely:

- Cash on delivery;
- cash on the day after delivery;
- on credit: customers have credit terms; and
- bank transfers.

According to the Financial Manager of Bread Factory A, the drivers have the responsibility to collect the payments. If they have a cash shortage, it is deducted from their salaries at the end of the month.

6.2.4.2 Intergroup sales

Both the General Manager and Financial Manager of Bread Factory A agreed that bread is sold to another bread factory that is also part of the group. This is recorded as intergroup sales.

6.2.4.3 Intergroup purchases sold

Bread is bought from another Bread Factory and then sold to Bread Factory A's customers as indicated by the Financial Manager of Bread Factory A. This is recorded as intergroup purchases sold. According to the Financial Manager, these sales volumes are negligible.

6.2.4.4 Sales of factored goods and stales

Bread Factory A purchases other items such as chips and cookies, which the drivers sell when they deliver bread. The stale bread is also sold. According to the Financial Manager and the profit and loss statement, this turnover is minimal.

6.2.4.5 Returns

The Financial Manager of Bread Factory A has indicated that a customer of Bread Factory A can take less bread than what they have ordered. This results in excess bread on the delivery vehicle, which is known as "returns". Once the driver has finished his deliveries, he returns to Bread Factory A where the returns are accepted back into inventory by the dispatching unit. The dispatcher counts the number of loaves returned and both the dispatcher and the driver sign for it.

6.2.4.6 Discounts

The General Manager and Financial Manager of Bread Factory A agreed that some customers receive discount from the regular selling price of Bread Factory A's selling price. Discounts cannot be negotiated by the driver, it can only be negotiated and approved by the General Manager of Bread Factory A. Discounts can be granted based on the following:

- Competitor pricing: if a competitor offers a better price than Bread Factory A, Bread Factory A offers discount in order to retain the customer; and
- when a new customer is on an existing delivery route, it is assumed that the delivery costs are already covered (refer to the contribution theory, paragraph 2.4, page 21). These sales will then contribute only to the profit of Bread Factory A.

According to the Financial Manager of Bread Factory A, the discount agreements are captured into the financial accounting system. The driver of the delivery vehicle has a list of sales prices per customer on his delivery route. When he delivers the bread to a customer, he completes a hand-written invoice based on the sales volumes delivered and the list of selling

prices that he has. Once he has completed his deliveries, he returns to the factory with a list of sales volumes delivered to each customer. The sales volumes are captured on the financial accounting system and the discounts given to customers are calculated automatically. Discounts are controlled and checked daily by the Financial Manager of Bread Factory A.

6.2.5 Cost of sales

The cost of sales cost in the profit and loss statement consists of cost of raw materials, cost of factored goods and cost of intergroup purchases. According to the Financial Manager and the profit and loss statement of Bread Factory A, the cost of sales only includes the direct material cost. The labour costs and manufacturing overhead costs as per the classification in the profit and loss statement of Bread Factory A are viewed as indirect costs (refer paragraph 2.2.1, page 13).

Cost of sales will be discussed under the following headings: cost of raw materials, dispatching of bread, write-offs and inventory control.

6.2.5.1 Cost of raw materials

According to the Financial Manager of Bread Factory A, the cost of raw materials consists of the cost of:

- Flour;
- other ingredients; and
- wrapping.

According to the Financial Manager of Bread Factory A, the cost of raw materials per unit (loaf of bread) per classification is calculated on a monthly basis. The actual flour, other ingredients and wrapping costs used to manufacture each classification of bread are calculated and divided by the total production volume per classification of bread. The Financial Manager of Bread Factory A indicated that due to the internal requirement of weekly calculating and reporting delivery route contribution, the cost of raw material figures used is the previous month's cost of raw materials.

Both the General Manager and Financial Manager of Bread Factory A agreed that all the flour is purchased from Miller A. The Financial Manager of Bread Factory A indicated that Miller A is part of the holding company that owns Bread Factory A. It is therefore also an inter-

group purchase. The General Manager and the Financial Manager of Bread Factory A indicated that the price at which the flour is purchased from Miller A is not negotiated by Bread Factory A. There is also no indication given to Bread Factory A as to how this transfer price of flour is determined.

The other ingredients and wrapping form the rest of the cost of raw materials.

6.2.5.2 Dispatching of bread

The dispatching of bread from Bread Factory A to customers is a very important function where tight control is maintained by Bread Factory A as indicated by the Financial Manager of Bread Factory A.

As mentioned in paragraph 6.2.4.1 (page 80), the drivers are also the sales representatives for Bread Factory A. According to the Financial Manager of Bread Factory A, the drivers obtain, during their daily deliveries, orders for bread for the next day or for the next delivery from customers. At the end of their deliveries, all the orders are added together and a global order is submitted by the driver for his specific delivery route to Bread Factory A. The General Manager obtains all these orders at each day-end and assigns sales volumes to drivers, based on production volumes and priority of customers. This means that the drivers do not always obtain all of their orders that they have requested. The General Manager of Bread Factory A agreed with this, but highlighted that customers almost always receive the orders that they have requested. It is then the driver's responsibility to assign volumes to customers.

The Financial Manager of Bread Factory A indicated that the personnel at the dispatching function obtain a list of allocated volumes per delivery vehicle. It is their responsibility to ensure that the actual dispatched volumes correspond with the list of allocated volumes. Once the delivery truck is loaded and the driver has counted and checked the dispatched volumes, both the driver and the responsible dispatcher sign the dispatch document.

The Financial Manager of Bread Factory A highlighted that after the deliveries have been completed, the driver returns to Bread Factory A. If it has returns (paragraph 6.2.4.5, page 81), the dispatcher counts and checks the returns back into inventory.

According to the Financial Manager of Bread Factory A, a dispatch summary is kept manually by the dispatching unit and electronically by the accounting staff. The Financial

Manager checks the dispatch summary daily. Any discrepancies are investigated and resolved daily.

6.2.5.3 Write-offs

Both the General Manager and Financial Manager of Bread Factory A agreed that write-offs of bread occur frequently due to the nature of the product. When it is very warm, the write-offs increase dramatically. Bread cannot be kept fresh for too long and customers will not accept bread that is not up to standard.

According to the Financial Manager of Bread Factory A, the reasons for write-offs are:

- Bread gets squashed during loading or off-loading;
- customers take less bread than what they ordered; or
- over-supply of bread.

The General Manager and Financial Manager agreed that it is crucial that Bread Factory A keeps write-offs as low as possible, because bread that is written off means lost profit. Management of Bread Factory A controls write-offs very tightly and the Financial Manager checks and signs off this figure daily.

According to the Financial Manager of Bread Factory A, a calculation is performed weekly to determine whether the quantity of write-offs is acceptable or not. The Financial Manager of Bread Factory A has explained the calculation. The calculation is described below.

Step 1:

1. Calculate the number of loaves **produced** based on a **65 kg bag of flour**:

Produced = transferred from production to dispatch + difference between opening and closing inventory of bread in Bread Factory A

2. Calculate the number of loaves **sold** based on a **65 kg bag of flour**.

The **production** volume and the **sales** volume are **actual volumes**, and the flour used is the **actual flour** used during **production**.

Step 2:

The difference between 1 and 2 is calculated. According to the Financial Manager of Bread Factory A, the management of Bread Factory A has set a monthly target for the difference. The result of the calculation is compared with the actual target in order to measure the operational performance of Bread Factory A and to determine whether write-offs are of an acceptable level.

6.2.5.4 Inventory control

Inventory control in Bread Factory A is crucial. According to the Financial Manager of Bread Factory A, the dispatch summary is kept to keep track of the movement of bread in and out of Bread Factory A. The Financial Manager indicated that Bread Factory A uses a first-in-first-out (FIFO) inventory valuation method. The actual movement of bread is recorded on the dispatch summary, one can therefore refer to this as “book” stock. The dispatch summary calculates what the actual inventory should be in the factory. This book stock figure is then compared with the actual physical stock inside the factory. According to the Financial Manager of Bread Factory A, discrepancies between the book stock and physical stock can be due to:

- Errors during dispatching;
- wrong sales volumes recorded and captured;
- wrong returns recorded and captured; and
- theft.

The Financial Manager of Bread Factory A highlighted that the management of Bread Factory A has prepared an incentive scheme for the dispatching unit. If the discrepancies between the book stock and physical stock for a four or five week period are below a certain number of loaves, a cash reward is given to the employees of the dispatching unit. According to the Financial Manager of Bread Factory A, this incentive scheme seems to be working well.

The book stock and physical stock are compared daily and checked by the Financial Manager. The Financial Manager highlighted that discrepancies are investigated and resolved daily.

6.2.6 Costs

According to the Financial Manager of Bread Factory A, expenses in the profit and loss statement consist of production expenses, distribution expenses, selling expenses, administration expenses and depreciation.

6.2.6.1 Production costs

The Financial Manager highlighted that the production expenses include **indirect expenses** (refer paragraph 2.2.1, page 13) such as the fuel that the ovens consume, laundry and cleaning, repairs and maintenance, water and electricity, salaries and wages and depreciation of the plant, ovens and tools. According to the profit and loss statement of Bread Factory A, production expenses for the past financial year amounted to 28% of the controllable expenses of Bread Factory A and 10% of total sales income.

Each of these expenses will now be discussed in detail.

- **Oven fuel**

According to the General Manager of Bread Factory A, the ovens that are used to bake the bread consume fuel. This fuel can only be purchased from one supplier and it is expensive. Both the General Manager and the Financial Manager of Bread Factory A indicated that the fuel the oven uses increases when production increases.

- **Laundry and cleaning**

The Financial Manager indicated that expenses are incurred to keep Bread Factory A clean and according to the standards of general health and safety that they have to adhere to. Laundry and cleaning expenses include general cleaning supplies that are used in the factory as well as the wages paid to cleaning staff. Laundry and cleaning wages are also paid to staff that works through a labour broker. These laundry and cleaning wages are referred to as outsourced laundry and cleaning wages.

- **Repairs of the building**

Repairs and maintenance expenses are incurred in order to maintain the factory in a decent operational condition. According to the Financial Manager of Bread Factory A, the building repairs and maintenance expenses are split into material and outwork and wages. The material and outwork expenses consist of expenses such as light bulbs, locks for new doors, new doors, etc. The wages paid for repairs occur on an ad-hoc basis to contracted staff.

- **Power**

The General Manager and the Financial Manager of Bread Factory A have explained that the power costs at Bread Factory A are calculated by the power supplier as follows:

Bread Factory A has a contract with the power supplier that a fixed lower rate is paid for a set power usage before eight in the morning. If the power usage increases to above a set certain level, a higher rate is charged. When a delivery truck off-loads flour into the flour container, the delivery truck uses high levels of power. If the delivery truck off-loads after eight in the morning, the power usage increases to above the set level, and a higher rate is charged by the power supplier. This higher rate is then charged by the power supplier to Bread Factory A for the rest of the month.

- **Water**

According to the Financial Manager of Bread Factory A, the water expense consists of general water usage in the factory including cleaning, drinking water, sanitary usage and then water is also used in the production process. Water is used as an ingredient for baking bread. The water expense annually amounts to less than 1% of the total production expenses, according to the profit and loss statement of Bread Factory A.

- **Protective clothing**

The protective clothing expense is expenses relating to staff uniforms as indicated by the Financial Manager of Bread Factory A. Staff members receive a uniform once a year.

- **Repairs plant**

The repairs and maintenance cost is split in the profit and loss statement into material and outwork cost, rebuilding cost and wages paid for repairs and maintenance performed. The material costs of repairs and maintenance on the plant occur on an ad-hoc basis according to the Financial Manager of Bread Factory A. There is a correlation with the production volumes, but it will be very difficult to determine the correlation. Repairs and maintenance cost on the plant would increase when production increases due to more wear and tear on the plant. Equipment might suffer a breakdown three months after Bread Factory A had to temporarily increase production due to a competitor's strike for example.

The Financial Manager of Bread Factory A indicated that a provision is created monthly for rebuilding costs that might occur. Once rebuilding occurs, the difference between the provision and the actual costs are expensed in the profit and loss statement of Bread Factory A. The wages paid for repairs performed on the building occur on an ad-hoc basis.

- **Production salaries**

The Financial Manager indicated that fixed salaries are paid to certain production staff.

- **Production wages**

The Financial Manager highlighted that production wages are paid at a fixed rate per hour to certain production staff. When production increases, the total production wages would increase. Staff earns different rates per hour and overtime rates are also paid. Production wages annually amount to 7% of the controllable expenses of Bread Factory A.

- **Wrapping wages**

According to the Financial Manager these wages are paid to staff responsible in the production process for wrapping of the bread.

- **Vehicle operating costs**

The Financial Manager of Bread Factory A indicated vehicle operating cost can occur in the production expenses as well as in the distribution expenses. The vehicle operating cost

occurring in the production expenses relates to costs to maintain other vehicles, not delivery vehicles, used by Bread Factory A. These costs include general maintenance costs on other vehicles.

- **Technical fees**

Bread Factory A has to comply with regulations on health and safety, according to the Financial Manager of Bread Factory A. Technical fees are paid to a specialist that assists in the inspections to ensure that they comply. Other technical fees are paid to a specialist that assists Bread Factory A when they have a problem with the bread recipes. If the texture of the bread changes suddenly, this specialist assists in resolving the problem with the recipe. These expenses occur on an ad-hoc basis and a provision is created by Bread Factory A to reduce the impact of the expense on a monthly basis. If the actual expense is more than the provision, the difference will be expensed in the profit and loss statement of Bread Factory A when it occurs. If the actual expense is less than the provision, the provision will be reversed and the expense reduced when the actual expense is incurred.

6.2.6.2 Distribution costs

According to the Financial Manager of Bread Factory A, customers do not pay additional fees for deliveries these expenses are carried solely by Bread Factory A. **Distribution cost** formed 52% of the controllable expenses of Bread Factory A for the last financial year and 19% compared to total sales income, according to the profit and loss statement of Bread Factory A. It is therefore essential that the distribution costs be controlled as tightly as possible. Any reduction in the distribution costs will increase profit.

According to the Financial Manager of Bread Factory A, the distribution cost expenses include bread and confectionery boxes, protective clothing, delivery wages, dispatch salaries, drivers' commission, outsource costs of drivers and dispatchers and vehicle operating costs.

First some clarification on the delivery process of bread at Bread Factory A.

- **Delivery vehicles**

According to the General Manager, Bread Factory A owns the 47 delivery vehicles that they use for deliveries. The capacity of the delivery vehicles differs from a capacity of 160 baskets to 670 baskets. A basket can carry eight to ten loaves. Each delivery vehicle is assigned to a

specific driver and a specific delivery route. The reasoning behind this is that each driver is responsible for the general condition of the delivery vehicle. The dedicated driver is responsible for the vehicle. They have to adhere to service intervals and report general maintenance requirements. The driver is held fully responsible for abuse of the vehicle.

Both the General Manager and Financial Manager of Bread Factory A agreed that the maintenance on the delivery vehicles is outsourced. A fixed fee per kilometre travelled is paid to a contractor. The contracted party is responsible for the following:

- Servicing of the delivery vehicles;
- attending to breakdowns on the road; and
- replacement of broken delivery vehicle parts caused by general wear and tear on the delivery vehicles.

The General Manager highlighted that the contracted party used to be responsible for the diesel that the delivery vehicles consumed and the delivery vehicles' tyres. but since September 2006 the contract has been changed to exclude diesel and tyres. A reduced fee per kilometre has been negotiated.

- **Delivery routes**

The General Manager of Bread Factory A indicated that delivery routes of bread have been developed over a period of time based on the logistics of customers. A GPS (Global Positioning System) map has been drawn up for each delivery route. The kilometres travelled on that route will be different each day because not all customers are serviced daily. One day the kilometres travelled on the route might be 50 and the next day it might be 60.

Each delivery vehicle is assigned to a specific route according to the General Manager of Bread Factory A. The reason being that the capacity of the delivery vehicle must compare with the sales volumes usually delivered on that route. Another reason is that the driver of that specific delivery vehicle is also the sales representative for that delivery route. The driver knows the customers and has a relationship with them. The General Manager insisted that it would be a foolish marketing decision to change drivers every now and again.

According to the General Manager, Bread Factory A has the following options when a delivery route is **not profitable**:

- Closing the distribution route and servicing the customers by adjusting current distribution routes to incorporate the customers previously serviced by the closed route; or
- increase sales volumes on that distribution route to make the route profitable; or
- closing a distribution route and losing the customers altogether.

- **Drivers' commission**

Both the General Manager and Financial Manager of Bread Factory A agreed that the management of Bread Factory A has developed a drivers' incentive scheme whereby drivers earn commission based on the sales volumes of their delivery route. The more loaves the driver sells the higher his or her commission will be. This is also a way to try and reduce the returns, because the driver does not earn commission on returns.

- **Bread and confectionery boxes**

The Financial Manager of Bread Factory A indicated that the bread and confectionery boxes refer to the plastic baskets in which the bread and confectionery are loaded to prevent them from squashing when they are transported to customers. These baskets are purchased as and when they are broken or stolen. The expense is immediately recognised in the profit and loss statement. No inventory is kept of these baskets, because the baskets do not last very long. New baskets are purchased monthly.

- **Protective clothing**

The protective clothing expense comprises the uniforms that the sales staff (drivers and van assistants) wears i.e. shirts, pants and hats, according to the Financial Manager of Bread Factory A.

- **Delivery wages**

Each delivery vehicle has an allocated driver and van assistant, according to both the General Manager and Financial Manager of Bread Factory A. The same driver and the same van assistant are always responsible for the same route. It is imperative that the combination of the driver, van assistant and delivery route stays constant in order to maintain the marketing strategy that Bread Factory A is following.

The driver's commission will be discussed in the paragraph following dispatch salaries (page 92). The expenses allocated to delivery wages are the wages of the van assistants. The van assistants receive a fixed wage per day. The only exception is that when the driver of the route is on leave, the van assistant qualifies for an additional fixed cents per loaf calculated on the delivered sales volumes of the delivery route. The drivers have three weeks leave out of a possible 52-week year. The reason for the additional commission paid to the van assistant is to compensate them for maintaining the customer relationships while the driver is on leave. The commission paid to the van assistants also form part of the delivery wages expense.

- **Dispatch salaries**

According to the Financial Manager of Bread Factory A, the dispatch salaries expense comprises the salaries of the dispatch supervisors. The dispatch supervisors receive a fixed salary per month whether 1 000 loaves have been dispatched or 10 000 loaves.

- **Drivers' commission**

The drivers' remuneration is based on an incentive scheme developed by Bread Factory A whereby drivers earn **commission** based on the sales volumes of their delivery route. The more loaves the driver sells the higher his or her commission will be. The commission is calculated based on a fixed cent per loaf of bread sold. There is however a fixed minimum salary that a driver can earn. When the commission is more than the minimum salary, the driver earns only commission, but when the commission is less than the minimum salary, he or she would earn the minimum salary. Most of the drivers earn more than the basic salary and an assumption will therefore be made that the drivers' commission is only commission.

Example 6.1: Calculation of drivers' commission

The minimum salary is, for example, set at a R1 000 per month. The driver earns commission of say R0.10 per loaf sold. He sells 12 000 loaves for the month. His commission would be calculated at 12 000 loaves x R0.10 = R1 200 for the month. The minimum salary is set at R1 000. He would therefore earn R1 200 for the month.

Source: (Researcher)

- **Outsource cost of drivers**

The cost of outsourcing of drivers is exactly the same in nature as drivers' commission cost (paragraph 6.2.6.2, page 90). The only difference is that these drivers work through a labour broker.

- **Outsource cost of dispatchers**

The outsource cost of dispatchers consists of the salaries paid to the loader and dispatching clerks. The loader and dispatching clerks earn a fixed salary per month. The dispatchers are responsible to load all the delivery vehicles irrespective of the delivery route.

- **Vehicle operating costs**

Both the General Manager and Financial Manager of Bread Factory A agreed that vehicle operating costs consist of the maintenance cost paid to an outsourced contracted party responsible for the maintenance of the delivery vehicles, the cost of repairs of delivery vehicles that Bread Factory A is responsible for, insurance and licenses.

A fixed fee per kilometre travelled is paid to the contractor. The contracted party is responsible for the following:

- Servicing of the delivery vehicles;
- attending to breakdowns on the road; and
- replacement of broken delivery vehicle parts caused by general wear and tear on the delivery vehicles.

The contracted party used to be responsible for the diesel that the delivery vehicles consumed and the delivery vehicles' tyres, but since September 2006 the contract has been changed to exclude diesel and tyres. A reduced fee per kilometre has been negotiated.

Bread Factory A is responsible for the following:

- Replacement of broken delivery vehicle parts not caused by general wear and tear;
- tyres (since September 2006);
- diesel (since September 2006);
- licensing fees; and
- insurance.

6.2.6.3 Selling costs

According to the Financial Manager the selling expenses include promotion costs and salaries and wages.

6.2.6.4 Administration costs

The Financial Manager of Bread Factory A highlighted that administration expenses include expenses such as salaries and wages of administrative personnel, bank charges, computer expenses, insurance, office equipment expenses, security, staff refreshments, telephone, etc.

6.2.6.5 Depreciation

The Financial Manager of Bread Factory A stated that depreciation is calculated on each delivery vehicle in order to compensate for wear and tear on the delivery vehicles. Depreciation per delivery vehicle is calculated using the straight-line method over a period of seven years. The initial purchase price is used as a basis for the calculation of depreciation.

The General Manager of Bread Factory A highlighted that depreciation should be ignored in the calculation of the delivery route contribution, because depreciation is a non-cash item and an irrelevant cost (paragraph 2.3.8, page 21) because the cost does not change when a delivery route is closed.

This concludes the information obtained during the interviews conducted.

6.3 ANALYSIS OF EACH COST ITEM IN DETERMINATION OF DELIVERY ROUTE CONTRIBUTION

The general objective of this study (paragraph 1.3.1, page 6) is to determine the financial viability of Bread Factory A's delivery routes. This can be determined by calculating a **delivery route segment margin** (paragraph 2.4.1.1, page 23) detailing the contribution margin (paragraph 2.4, page 21). This will be accomplished by preparing a **segmented income statement** (paragraph 2.4.1.1, page 23) (objective 1.3.2.5, page 6). A delivery route is regarded as a segment (paragraph 2.4.1.1, page 23). The use of the delivery route segment margin will enable the management of Bread Factory A to make decisions regarding the financial viability of a delivery route.

In order to prepare a segmented income statement, it is necessary to analyse each of the cost items to determine its cost behaviour, traceability and relevance to the decision (objective 1.3.2.4, page 6).

The following cost items, based on costs indicated in the profit and loss statement of Bread Factory A, should be analysed to determine whether it should be taken into account in the calculation of the delivery route profitability:

- Production costs (paragraph 6.2.6.1, page 86);
- distribution costs (paragraph 6.2.6.2, page 89);
- selling costs (paragraph 6.2.6.3, page 94); and
- administrative costs (paragraph 6.2.6.4, page 94).

In order to achieve the specific research objective 1.3.2.4 (page 6), these costs will be analysed and classified in terms of their:

- *Behaviour*: variable costs (paragraph 2.3.1, page 15), fixed costs (paragraph 2.3.2, page 16), semi-variable costs (paragraph 2.3.3, page 18) and semi-fixed costs (paragraph 2.3.4, page 18).
- *Traceability*: direct and indirect costs (paragraph 2.2.1, page 13).
- *Relevancy*: relevant and irrelevant costs (paragraph 2.3.8, page 21) and traceable fixed costs or common fixed costs (paragraph 2.4.1.1, page 23).

Costs that are **relevant** to the decision to close a segment will be included as part of the delivery segment margin. Therefore only **variable costs** and **traceable fixed costs** will be relevant costs.

Each cost will now be discussed and classified based on the above-mentioned criteria.

6.3.1 Production costs

Manufacturing costs include direct materials, direct labour and manufacturing overheads (paragraph 2.3.6, page 19). Direct materials and direct labour are usually classified as **direct costs**, while manufacturing overheads are **indirect costs** (paragraph 2.2.1, page 13).

Bread Factory A classifies **all** production costs as **indirect costs** and do not assign these costs as manufacturing costs. Bread Factory A refers to **production cost** as **manufacturing cost**. These production costs are **manufacturing overheads** and should be analysed to determine whether these costs are fixed or variable costs. If production costs are **variable**, these costs should be included as part of the delivery route contribution margin. The fixed production costs should then be classified as either **traceable fixed cost** or **common fixed cost** (paragraph 2.4.1.1, page 23) as prescribed by the **segment reporting approach** (paragraph 2.4.1.1, page 23). When all the **traceable fixed costs** have been deducted from the contribution margin, the result will be a **delivery route segment margin** (paragraph 2.4.1.1, page 23).

The production costs consist of oven fuel, laundry and cleaning, repairs and maintenance of the building, power, water, protective clothing, repairs and maintenance of the plant, production salaries and wages, wrapping wages, vehicle operating costs and technical fees. Each cost will now be discussed in detail to determine whether it is a **variable** (paragraph 2.3.1, page 15) or **fixed cost** (paragraph 2.3.2, page 16). If it is a fixed cost, the fixed costs should be classified as either **traceable** or **common fixed cost** (paragraph 2.4.1.1, page 23).

6.3.1.1 Oven fuel

The oven fuel (paragraph 6.2.6.1, page 86) can be classified as a **variable cost** and the **allocation base** (paragraph 2.2.2, page 14) to use to assign the total cost to the cost objects is the total sales volume. The reason is the more bread Bread Factory A bakes, the higher the fuel consumption.

6.3.1.2 Laundry and cleaning

These costs (paragraph 6.2.6.1, page 86) can be classified as a **common fixed costs** because it cannot be traced directly to the segment and are fixed costs incurred to support the operations of more than one segment in the organisation (paragraph 2.4.1, page 22).

6.3.1.3 Repairs building

These costs (paragraph 6.2.6.1, page 87) are incurred on an ad-hoc basis and can be classified as a **common fixed cost** because it cannot be traced directly to the segment, and are fixed costs incurred to support the operations of more than one segment in the organisation (paragraph 2.4.1, page 22).

6.3.1.4 Power

The cost of power (paragraph 6.2.6.1, page 87) in Bread Factory A cannot be classified as a semi-variable cost (paragraph 2.3.3, page 18) as it is generally done due to the nature of the cost (paragraph 6.2.6.1, page 87). The delivery of the flour affects the power usage more than the manufacturing process. Power costs cannot be classified as a variable cost either. The researcher therefore classified it as a **common fixed cost**, because it cannot be traced directly to the segment and will still be incurred if the segment closes.

6.3.1.5 Water

Due to the water cost (paragraph 6.2.6.1, page 87) being insignificantly small, and the difficulty to obtain a relevant allocation base to assign the variable portion, the researcher classified the water cost as a **common fixed cost**.

6.3.1.6 Protective clothing

The cost of the uniforms (paragraph 6.2.6.1, page 87) can be classified as a **common fixed cost** because it cannot be traced directly to the segment and is fixed costs incurred to support the operations of more than one segment in the organisation (paragraph 2.4.1, page 22).

6.3.1.7 Repairs plant

All the costs relating to repairs of the plant (paragraph 6.2.6.1, page 88) are classified as a **common fixed cost** because it cannot be traced directly to the segment and are fixed costs incurred to support the operations of more than one segment in the organisation (paragraph 2.4.1, page 23).

6.3.1.8 Production – Salaries

The salaries paid to production staff (paragraph 6.2.6.1, page 88) can be classified as a **common fixed cost** because the cost will still exist even if a segment closes.

6.3.1.9 Production – Wages

The production wages are classified as **variable costs**. In order to allocate the production wage costs (paragraph 6.2.6.1, page 88), an **allocation base** has to be identified. An appropriate allocation base would be total sales volumes because as the sales increase, the production wages increase proportionally. The difference between the production volumes and sales volumes is the write-offs (paragraph 6.2.5.3, page 84). The write-offs cost is not shown separately in the profit and loss statement of Bread Factory A, but is absorbed into the cost of sales. Therefore it would be accurate to use sales volumes to allocate production wages to the different bread types and not use production volumes.

6.3.1.10 Wrapping – Wages

Wrapping wages (paragraph 6.2.6.1, page 88) are treated in exactly the same manner as production wages (paragraph 6.3.1.9, page 98). The cost is allocated as **variable costs** based on sales volumes.

6.3.1.11 Vehicle operating costs

This cost (paragraph 6.2.6.1, page 88) can be classified as a **common fixed cost** because it cannot be directly traced to a segment and will not be influenced by a decision to close a segment.

6.3.1.12 Technical Fees

The technical fees cost (paragraph 6.2.6.1, page 89) is classified as a **common fixed cost** because it cannot be directly traced to a segment and will not be influenced by a decision to close a segment.

A summary of all the production costs, classified either as variable or traceable or common fixed costs, is tabulated below.

Table 6.1 Classification of Bread Factory A's production costs

Cost	Indirect		
	Relevant		Irrelevant
	Variable cost	Traceable fixed	Common fixed
Oven fuel	<input type="checkbox"/>		
Laundry and cleaning			<input type="checkbox"/>
Repairs building			<input type="checkbox"/>
Power			<input type="checkbox"/>
Water			<input type="checkbox"/>
Protective clothing			<input type="checkbox"/>
Repairs plant			<input type="checkbox"/>
Production salaries			<input type="checkbox"/>
Production wages	<input type="checkbox"/>		
Wrapping wages	<input type="checkbox"/>		
Vehicle operating costs			<input type="checkbox"/>
Technical fees			<input type="checkbox"/>

6.3.2 Distribution costs

The **distribution costs** in the profit and loss statement include bread and confectionery boxes, protective clothing, delivery wages, dispatch salaries, drivers' commission, outsource costs of drivers and dispatchers and vehicle operating costs.

Each cost will now be discussed in detail in order to determine its cost behaviour, traceability and relevance (refer to paragraph 6.3, page 94). In determining traceability (direct and indirect costs) reference is made to the **cost object** (paragraph 2.2, page 13). Specific objective 1.3.2.5 (page 6) requires separate cost data for the delivery routes and therefore the cost object is a delivery route.

6.3.2.1 Bread and confectionery boxes

The cost of bread and confectionery boxes (paragraph 6.2.6.2, page 91) can be attributed to the distribution cost, but it cannot be directly attributed to the **cost object** in a cost-effective way. The cost is therefore an **indirect cost**.

The cost of bread and confectionery boxes is **not a variable cost** because the total costs do not increase proportionally when the activity level increases. There are too many factors other than sales volume that have an influence, such as handling, climate, routes travelled, etc. It is, however, **relevant** to the decision because the total costs of bread and confectionery boxes will change when a delivery route closes. Its behaviour will therefore be classified as **traceable fixed cost**, because it can be traced to the delivery function although not to a specific delivery route. A predetermined fixed overhead rate (paragraph 2.5.3.4, page 32) will be calculated using annual total sales volume as an allocation base (paragraph 2.2.2, page 14).

6.3.2.2 Protective clothing

The cost of these clothes (paragraph 6.2.6.2, page 91) cannot be directly attributed to the cost object in a cost-effective way and is therefore classified as **indirect cost**.

Protective clothing cost is **not a variable cost** because the total cost does not increase proportionally when the activity level increases. For purposes of the delivery route profitability calculation, the behaviour of this cost is **relevant** because the cost will be reduced if a segment closes due to the fact that there will be a reduction in staff. Its behaviour will therefore be classified as a **traceable fixed cost**. A predetermined fixed overhead rate (paragraph 2.5.3.4, page 32) will be calculated using annual total sales volume as an allocation base (paragraph 2.2.2, page 14).

6.3.2.3 Delivery wages

The cost of delivery wages (paragraph 6.2.6.2, page 91) is directly attributable to a specific delivery route and can therefore be assigned to the cost object in a cost-effective way. The cost will therefore be classified as a **direct cost**.

The cost is a **relevant cost** because the cost will change if the deliveries do not take place.

The cost of the delivery wages is a **fixed cost**, except for the three week period that the drivers are on leave, then the cost changes to a combination of **fixed** and **variable** cost. Due to the small portion variable cost, the researcher classified the delivery wages as a **traceable fixed cost** (paragraph 2.4.1.1, page 23).

6.3.2.4 Dispatch salaries

This cost (paragraph 6.2.6.2, page 92) can be classified as an **indirect cost** because it cannot be assigned to the cost object in a cost-effective way.

The cost is an **irrelevant cost** because the cost will not change as a consequence of the decision under review and will not affect the decision. The cost will still have to be incurred whether the dispatch supervisors are responsible for dispatching a thousand or two thousand loaves monthly.

The dispatch salaries are a **fixed cost** because the monthly cost stays constant even if the activity level varies. The dispatch salaries are a **common fixed cost** because it cannot be allocated to only one segment.

6.3.2.5 Drivers' commission

The driver's commission (paragraph 6.2.6.2, page 92) can be classified as **direct cost** because the cost can be assigned to the cost object in a cost-effective way. The commission of cents per loaf can be assigned to a loaf of bread sold.

Drivers' commission cost is a **relevant cost**. **Relevant costs** are **expected future costs** that will change as a direct consequence of the **decision** under review. When a decision is made to close a delivery route, the driver's commission of that route will not be incurred.

The cost of drivers' commission is a **variable cost** because when the activity level changes the cost changes in direct proportion. i.e. when the sales volume increases, the drivers' commission increases in direct proportion.

6.3.2.6 Outsource cost of drivers

The outsource cost of drivers (paragraph 6.2.6.2, page 93) will be treated in exactly the same manner as drivers' commission (paragraph 6.3.2.5, page 101). The cost classification would also be a direct, relevant and variable cost.

6.3.2.7 Outsource cost of dispatchers

This cost (paragraph 6.2.6.2, page 93) can be classified as an **indirect cost** because it cannot be assigned to the cost object in a cost-effective way.

The cost is an **irrelevant cost** because the cost will not change as a consequence of the decision under review and will not affect the decision. The cost will still have to be incurred whether the loader and dispatching clerks are responsible for dispatching a thousand or two thousand loaves monthly.

The outsource cost of dispatchers is a **fixed cost** because the monthly cost stays constant even if the activity level varies. The outsourced cost of dispatchers is a **common fixed cost** because it cannot be allocated to only one segment.

6.3.2.8 Vehicle operating costs

The vehicle operating cost (paragraph 6.2.6.2, page 93) can be classified as a **direct cost** because the cost is directly attributable to the cost object (delivery route). Each delivery vehicle is assigned to a specific delivery route and therefore the cost of maintaining and operating that vehicle can be assigned to that delivery route.

Delivery vehicle operating cost is a **relevant cost**. When a decision is made to close a delivery route, the kilometres travelled on that delivery route will cease to exist and with that the fixed fee per kilometre travelled paid to the contracted party. The other maintenance cost of that delivery vehicle will also fall away.

The vehicle operating cost consists of two elements, namely an element based on a fixed fee per kilometre travelled and an element that is the cost of the replacement parts of the delivery vehicles, the licensing fees and insurance. The first element is the fixed fee per kilometre travelled that is paid to the contracted party for maintenance on the delivery vehicles. The cost is variable based on kilometres travelled but not variable based on sales volume. The cost will **not** increase proportionally when the activity level (sales volume) increases. It can therefore not be classified as a **variable cost**. The cost is, however, directly traceable to a segment and will therefore be classified as a **traceable fixed cost**.

The other element is the cost of the replacement parts of the delivery vehicles, the licensing fees and insurance. Since September 2006 Bread Factory A will be responsible for the cost of

diesel and tyres of the delivery vehicles and these costs will not form part of the fixed rate payable to the contractor. The researcher classified the second element of the vehicle operating costs as **traceable fixed costs** because it is directly attributable to a specific vehicle that travels a specific delivery route and therefore a to specific segment.

A summary of the cost behaviour, traceability and relevance of the distribution costs is tabulated in table 6.2.

Table 6.2: Summary of the cost behaviour, traceability and relevance of distribution costs

Cost	Traceability		Behaviour			Relevance	
	Dir	Ind	VC	Tr	Co	Rel	Irrel
Bread/confectionery boxes		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
Protective clothing		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
Delivery wages	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>	
Dispatch salaries		<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>
Drivers' commission	<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>	
Outsource cost of drivers	<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>	
Outsource cost of dispatchers		<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>
Vehicle operating cost	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>	

Abbreviations:

- Dir: Direct cost
- Ind: Indirect cost
- VC: Variable cost
- Tr: Traceable fixed cost
- Co: Common fixed cost
- Rel: Relevant cost
- Irrel: Irrelevant cost

6.3.3 Selling costs

Selling costs (paragraph 6.2.6.3, page 94) include promotional costs and salaries and wages. These costs are indirect costs and irrelevant to the decision. Selling costs are classified as a **common fixed cost**.

6.3.4 Administrative costs

Administrative costs (paragraph 6.2.6.4, page 94) are handled in exactly the same manner as selling expenses, i.e. it is treated as a **common fixed cost**.

This concludes the analysis of each cost item to determine its cost behaviour, traceability and relevance in the calculation of the delivery route profitability.

6.4 CALCULATION OF DELIVERY ROUTE CONTRIBUTION

In order to achieve the specific research objective (paragraph 1.3.2.5, page 6) the delivery route profitability using the segment reporting approach (paragraph 2.4.1, page 22), will now be calculated by the researcher. A Microsoft Excel **model** (appendix 2, page 141) will be **developed** by the researcher and provided to Bread Factory A for future calculation of a delivery route segment margin per delivery route.

This will be achieved by referring to the literature discussed in chapter 2 (page 12). A delivery route at Bread Factory A can be classified as a **segment** (paragraph 2.4.1, page 22). A **segmented income statement** (paragraph 2.4.1.1, page 23), detailing the **contribution margin** (paragraph 2.4, page 21) and a **delivery route segment margin** (paragraph 2.4.1.1, page 23) are therefore the projected end result. The cost behaviour, traceability and relevancy of the costs as determined in paragraph 6.3 (page 94) will be used to compile the segmented income statement. The delivery route segment margin is the result of the accurate measurement and allocation of the distribution costs. The financial viability of the delivery routes can therefore be determined which will lead to the optimisation of delivery routes (refer hypothesis, page 7).

When applying this theory to Bread Factory A's delivery routes, the calculation should be performed as follows:

The **income** that is generated by a delivery route less:

- the **variable manufacturing cost of the sales** volumes sold on that particular delivery route, and
- the **variable distribution costs** to service that delivery route.

The result will be a **delivery route contribution margin**. The **traceable fixed costs** should then be deducted from the delivery route contribution margin to calculate the **delivery route segment margin**.

The use of the **delivery route segment margin** will enable the management of Bread Factory A to make decisions regarding the **viability** of a delivery route (paragraph 6.3, page 94).

The delivery route segment margin per delivery route is required by management on a weekly basis. For purposes of internal reporting, a week starts on Saturday and ends on the following Friday. The researcher has used the same classification of a week, starting on a Saturday and ending on the following Friday and performed the calculation of a segment margin based on a four-week month information. The result will be a delivery segment margin per one month. Each of the items used by Bread Factory A in the calculation will now be discussed in detail.

6.4.1 Sales

For purposes of the delivery route profitability calculation, only the outside group sales volumes (paragraph 6.2.4.1, page 80) and intergroup sales volumes (paragraph 6.2.4.2, page 80) are considered. The intergroup purchases sold and sales of factored goods and stales sales volumes are negligible (paragraph 6.2.4.3 to 6.2.4.4, page 81).

The **sales volumes** are split per different classification of bread (paragraph 6.2.4, page 79). The **income** generated by a delivery route will be calculated by multiplying the actual sales volumes per different type of bread with the current selling price of the same type of bread (paragraph 6.2.4, page 79).

Discounts (paragraph 6.2.4.6, page 81) granted on sales are the actual discounts per delivery route as per the financial accounting systems. Discounts are directly deducted from sales to obtain a net sales figure.

6.4.2 Cost of sales

The cost of sales comprises the cost of raw materials, cost of factored goods and cost of intergroup purchases (paragraph 6.2.5, page 82).

6.4.2.1 Cost of raw materials

The cost of raw materials comprises the cost of flour, other ingredients and wrapping (paragraph 6.2.5.1, page 82). Inventory of flour, the other ingredients and wrapping is kept by Bread Factory A. Bread Factory A uses a first-in-first-out (FIFO) inventory valuation method (paragraph 6.2.5.4, page 85). This method issues inventory in the order in which it is received, meaning the oldest inventory is the first to be used (Niemand *et al.*, 2004:45; Uliana & Marcus, 1990:38). The **cost of raw material** figures, in volume and monetary value, for the raw materials inventory is calculated monthly by Bread Factory A, using the following formula:

Beginning inventory + purchases – closing inventory = **production usage**

The cost of the raw materials **used in production** represents the **cost of raw materials**. The cost of raw materials therefore incorporates that which was sold plus any write-offs (refer paragraph 6.2.5.3, page 84).

The **cost of raw materials per unit** (loaf of bread) per classification is calculated by Bread Factory A (paragraph 6.2.5, page 82) on a monthly basis. The actual flour, other ingredients and wrapping costs used to manufacture each classification of bread in a particular month are calculated and divided by the total production volume per classification of bread for that month.

A simple example to illustrate the calculation of cost of raw materials per unit per classification of bread is provided below.

Example 6.2: Calculation of cost of raw materials per unit

FLOUR	Type A			Type B		
	Volume	Per unit	R-value	Volume	Per unit	R-value
Opening stock	5,000	1.50	7,500.00	4,000	1.25	5,000.00
+ Purchases	100,000	1.75	175,000.00	80,000	1.20	96,000.00
- Closing stock	-1,000	1.75	-1,750.00	-2,000	1.20	-2,400.00
Production usage	104,000	1.74	180,750.00	82,000	1.20	98,600.00
OTHER INGREDIENTS						
Opening stock	200	0.20	40.00	150	0.18	27.00
+ Purchases	20,000	0.20	4,000.00	25,000	0.19	4,750.00
- Closing stock	-500	0.20	-100.00	-100	0.19	-19.00
Production usage	19,700	0.20	3,940.00	25,050	0.19	4,758.00
WRAPPING						
Opening stock	10,000	0.05	500.00	12,000	0.05	600.00
+ Purchases	200,000	0.05	10,000.00	200,000	0.05	10,000.00
- Closing stock	-8,000	0.05	-400.00	-15,000	0.05	-750.00
Production usage	202,000	0.05	10,100.00	197,000	0.05	9,850.00
Cost of sales per unit						
	Type A			Type B		
	Loaves	R		Loaves	R	
Production usage:						
Flour		180,750.00			98,600.00	
Other ingredients		3,940.00			4,758.00	
Wrapping		10,100.00			9,850.00	
Total cost		<u>194,790.00</u>			<u>113,208.00</u>	
Units produced	<u>71,200</u>			<u>38,000</u>		
Cost of sales per unit		<u>2.74</u>			<u>2.98</u>	

(Source: Researcher)

Due to the internal requirement of weekly calculating and reporting delivery route contribution, the cost of raw materials figures used is the **previous month's** cost of raw materials (paragraph 6.2.5.1, page 82).

6.4.2.2 Cost of factored goods

Inventory of factored goods (paragraph 6.2.4.4, page 81) is kept. The cost of the factored goods is calculated by using the following formula:

Beginning inventory + purchases – closing inventory = cost of sales

The cost of factored goods is not taken into account in the calculation of the delivery route contribution, because the profit compared to the bread sales is negligible (paragraph 6.2.4.4, page 81).

6.4.2.3 Cost of intergroup purchases

Inventory of intergroup purchases (paragraph 6.2.4.3, page 81) is kept. The cost of the intergroup purchases is calculated by using the following formula:

Beginning inventory + purchases – closing inventory = cost of sales

The cost of intergroup purchases is not taken into account in the calculation of the delivery route contribution, because the profit compared to the bread sales is negligible (paragraph 6.2.4.3, page 81).

6.4.3 Production costs

Production costs are classified as **indirect** costs (paragraph 6.2.6.1, page 86; paragraph 6.3.1, page 95). These costs can be divided into **variable** and **traceable fixed costs** (paragraph 6.3.1, page 95). According to the literature (paragraph 2.5.3.4, page 32) a **predetermined overhead rate** based on the traceable fixed production costs should be calculated.

The **allocation base** (paragraph 2.2.2, page 14) will be the sales volumes.

The actual figures were adjusted in congruence with the confidentiality agreement with Bread Factory A. The figures will not be shown in the calculation due to its confidentiality.

Calculation 6.1: Calculation of a predetermined traceable fixed production costs rate (paragraph 2.5.3.4, page 32):

$$\begin{aligned}\text{Predetermined rate} &= \frac{\text{Annual budgeted traceable fixed production costs}^*}{\text{Annual budgeted sales volumes}} \\ &= \mathbf{R0.1538 \text{ per unit sold}}\end{aligned}$$

*The annual budgeted traceable fixed productions costs included in the calculation of the predetermined rate are:

- Laundry and cleaning (paragraph 6.3.1.2, page 96);
- repairs building (paragraph 6.3.1.3, page 96);
- power (paragraph 6.3.1.4, page 97);
- water (paragraph 6.3.1.5, page 97);
- protective clothing (paragraph 6.3.1.6, page 97);
- repairs plant (paragraph 6.3.1.7, page 97);
- production salaries (paragraph 6.3.1.8, page 97);
- vehicle operating costs (paragraph 6.3.1.11, page 98);and
- technical fees (paragraph 6.3.1.12, page 98).

These budgeted costs were obtained from the profit and loss statement of Bread Factory A.

The overhead to be applied to the cost object will be calculated by multiplying the predetermined rate with the sales volumes per delivery route (paragraph 2.5.3.4, page 32).

6.4.4 Distribution costs

An analysis of the cost behaviour, traceability and relevancy of distribution costs was performed and summarised (table 6.2, page 103). The **variable** distribution costs, namely drivers' commission (paragraph 6.3.2.5, page 101) and outsource cost of drivers (paragraph 6.3.2.6, page 101) were taken into account in calculating the contribution margin.

- **Vehicle operating costs**

The **vehicle operating cost** (paragraph 6.3.2.8, page 102) can be divided into a **fixed rate per kilometre** travelled and a **predetermined rate** for **other expenses** that include the replacement cost of broken delivery vehicle parts not caused by general wear and tear, licensing fees, insurance, and since September 2006, tyres and diesel. For purposes of the actual calculation of the delivery route segment margin (table 6.2, page 103), the fixed fee paid to the contractor will still include the tyres and diesel expenses because the fee per kilometre travelled was only re-negotiated during September 2006. For purposes of the model (appendix 2, page 141) developed for Bread Factory A, the fixed fee payable to the contractor excludes diesel and tyres. These costs (diesel and tyres) will be classified as **traceable fixed cost** (paragraph 6.3.2.8, page 102). The **allocation base** (paragraph 2.5.3.4, page 32) to use is the kilometres travelled by the delivery vehicles.

The actual figures were adjusted in congruence with the confidentiality agreement with Bread Factory A.

Calculation 6.2: Calculation of a predetermined other vehicle operating cost rate (paragraph 2.5.3.4, page 32):

$$\begin{aligned} \text{Predetermined rate} &= \frac{\text{Annual budgeted other vehicle operating costs}^*}{\text{Annual budgeted kilometres travelled}} \\ &= \mathbf{R0.1975 \text{ per kilometre travelled}} \end{aligned}$$

*The annual budgeted traceable fixed other vehicle operating costs included in the calculation of the predetermined rate are:

- Repairs: Mechanical
- Repairs: Bodywork
- Insurance
- Licences

These budgeted costs were obtained from the profit and loss statement of Bread Factory A. The overhead to be applied to the cost object will be calculated by multiplying the predetermined rate with the actual kilometres travelled on the delivery route.

- **Other distribution costs**

The other distribution costs, namely bread/confectionery boxes (paragraph 6.3.2.1, page 99), protective clothing (paragraph 6.3.2.2, page 100) and delivery wages (paragraph 6.3.2.3, page 100) are classified as **traceable fixed costs**.

A predetermined rate (paragraph 2.5.3.4, page 32) should be calculated for the bread/confectionery boxes (paragraph 6.3.2.1, page 99) and protective clothing (paragraph 6.3.2.2, page 100). The **allocation base** (paragraph 2.2.2, page 14) to use is the annual sales volumes.

The actual figures were adjusted in congruence with the confidentiality agreement with Bread Factory A. The figures will not be shown in the calculation due to its confidentiality.

Calculation 6.3: Calculation of a predetermined other distribution costs rate (paragraph 2.5.3.4, page 32):

$$\begin{aligned} \text{Predetermined rate} &= \frac{\text{Annual budgeted distribution costs}^*}{\text{Annual budgeted sales volumes}} \\ &= \mathbf{R0.0170 \text{ per unit sold}} \end{aligned}$$

*The annual budgeted traceable fixed other distribution costs included in the calculation of the predetermined rate are:

- Bread/confectionery boxes
- Protective clothing

These budgeted costs were obtained from the profit and loss statement of Bread Factory A.

The delivery wages can be traced directly to the delivery routes and are the actual costs incurred per delivery route. The breakdown of the delivery wages per delivery route was obtained from the Financial Manager of Bread Factory A.

6.4.5 Actual calculation of the profitability of the delivery routes

The profitability of the delivery routes affects the profitability of Bread Factory A directly. If a delivery route is not profitable it compromises the profit of Bread Factory A. It is therefore imperative that Bread Factory A knows which routes are profitable and which routes incur losses.

The researcher developed a model (appendix 2, page 141) to assist Bread Factory A in measuring the profitability of delivery routes. After analysing all the costs that could affect the profitability of the delivery routes, the actual calculation of the profitability of the delivery routes for a **four-week period** was performed by the researcher based on the method of calculation described in paragraph 6.4 (page 104).

The **actual figures** were obtained from Bread Factory A's financial records and have been adjusted in congruence with the confidentiality agreement with Bread Factory A.

The actual figures were obtained from the following sources in Bread Factory A:

Actual sales volumes per delivery route:	Sales summary
Sales price per unit:	Financial Manager: Bread Factory A
Cost of raw material:	Calculation of actual raw material input costs performed by Bread Factory A
Drivers' commission:	Financial Manager: Bread Factory A
Oven fuel, production wages and wrapping wages:	Profit and loss statement for the financial year 2006 of month under review: Bread Factory A
Predetermined rates:	Calculations performed by researcher using the profit and loss statement of Bread Factory A (paragraph 6.4.3 to 6.4.4, pages 108 to 109)

Actual kilometres travelled:

Delivery vehicles maintenance records kept
by outsourced party

Fixed rate per kilometre:

Financial Manager: Bread Factory A

Discounts:

Sales summary

Delivery wages:

Sales summary

Only the first five delivery routes' results of the calculation are tabulated below.

Table 6.3: Calculation of the actual profitability of delivery routes at Bread Factory A for a combined four-week period

	Routes				
	Route 1	Route 2	Route 3	Route 4	Route 5
<i>Sales volumes - in units (SV)</i>	18,930	12,671	19,215	21,697	19,732
Type A	6,221	2,702	949	0	4,525
Type B	2,797	2,041	1,961	3,041	1,109
Type C	6,964	5,282	3,288	1,918	7,675
Type D	215	293	0	0	43
Type E	0	0	3,201	12,905	0
Type F	2,733	2,353	9,815	3,832	6,379
	R	R	R	R	R
<i>Sales price per unit (SP)</i>					
Type A	2.37	2.37	2.37	2.37	2.37
Type B	2.70	2.70	2.70	2.70	2.70
Type C	2.07	2.07	2.07	2.07	2.07
Type D	2.31	2.31	2.31	2.31	2.31
Type E	2.07	2.07	2.07	2.07	2.07
Type F	2.34	2.34	2.34	2.34	2.34
<i>Discounts</i>	2,326.94	445.23	1,737.93	2,549.52	5,378.79
<i>Cost of raw material (CRM)</i>					
Type A	1.0737	1.0737	1.0737	1.0737	1.0737
Type B	1.2435	1.2435	1.2435	1.2435	1.2435
Type C	0.9160	0.9160	0.9160	0.9160	0.9160
Type D	1.0585	1.0585	1.0585	1.0585	1.0585
Type E	0.9160	0.9160	0.9160	0.9160	0.9160
Type F	1.0585	1.0585	1.0585	1.0585	1.0585
<i>Drivers' commission (DC)</i> <i>(including outsourced)</i>					
Type A	0.063	0.063	0.063	0.063	0.063
Type B	0.072	0.072	0.072	0.072	0.072
Type C	0.063	0.063	0.063	0.063	0.063
Type D	0.072	0.072	0.072	0.072	0.072
Type E	0.063	0.063	0.063	0.063	0.063
Type F	0.072	0.072	0.072	0.072	0.072
<i>Oven fuel (OF)</i>	0.0481	0.0481	0.0481	0.0481	0.0481
<i>Production wages (PW)</i>	0.0408	0.0408	0.0408	0.0408	0.0408
<i>Wrapping wages (WW)</i>	0.0187	0.0187	0.0187	0.0187	0.0187
<i>Kilometres travelled (KM)</i>	869	1,150	2,944	3,034	2,333
<i>Fixed rate per kilometre (RKM)</i>					
Rands	R 1.2540	R 1.2540	R 1.2540	R 1.2540	R 1.2540
<i>Predetermined rates per unit:</i>					
<i>Other production costs (OP)*</i>	R 0.1538	R 0.1538	R 0.1538	R 0.1538	R 0.1538
<i>Other vehicle operating cost per km (OV)**</i>	R 0.1975	R 0.1975	R 0.1975	R 0.1975	R 0.1975
<i>Other distribution costs (OD)***</i>	R 0.0170	R 0.0170	R 0.0170	R 0.0170	R 0.0170

Segmented income statement					
Sales (SV X SP) less discounts	41,276.04	28,586.50	42,207.72	45,312.84	39,254.48
Less variable expenses:	22,938.06	15,282.38	23,175.74	25,179.33	23,500.02
Cost of raw materials (SV X CRM)	19,657.23	13,078.68	19,792.01	21,416.41	20,066.38
Oven fuel (SV X OF)	910.78	609.66	924.49	1,043.89	949.35
Production wages (SV X PW)	771.56	516.47	783.17	884.32	804.23
Wrapping wages (SV X WW)	354.20	237.10	359.53	405.97	369.20
Drivers' commission (SV X DC)	1,244.30	840.48	1,316.54	1,428.74	1,310.87
Contribution margin	18,337.98	13,304.12	19,031.98	20,133.51	15,754.46
Less: traceable fixed expenses	5,165.66	4,337.33	8,057.80	8,613.08	7,259.47
Other production costs (SV X OP)	2,911.43	1,948.86	2,955.27	3,336.93	3,034.72
Vehicle operating costs (KM X RKM)	1,089.48	1,442.35	3,691.27	3,804.89	2,925.33
Other vehicle operating costs (KM X OV)	171.54	227.11	581.21	599.10	460.61
Other distribution costs (SV X OD)	321.21	215.01	326.05	368.16	334.81
Delivery wages (Actual)	672.00	504.00	504.00	504.00	504.00
Segment margin	13,172.32	8,966.79	10,974.18	11,520.43	8,494.98

* Calculation 6.1, page 109

** Calculation 6.2, page 110

*** Calculation 6.3, page 111

6.5 COMPETITIVE ADVANTAGE

In order to achieve the specific research objective (paragraph 1.3.2.6, page 6), namely to determine whether Bread Factory A follows the guidelines provided by the literature on competitive advantage, the strategic documents of Bread Factory A were analysed and discussed with the management of Bread Factory A.

- **Literature**

According to the literature discussed in chapter 3 (page 36), the guidelines provided on competitive advantage include:

- Strategy formulation: formulating a vision statement and mission statement (paragraph 3.2, page 37).
- Performing an external environmental analysis (paragraph 3.3, page 39) using Porter's Five Forces model (paragraph 3.3.1.1, page 39) and a PEST(EL) analysis (paragraph 3.3.2.1, page 43).
- Porter's generic strategies (paragraph 3.3.4, page 45).
- Performing an internal environmental analysis by referring to a SWOT analysis (paragraph 3.4.1, page 47) and a value chain analysis (paragraph 3.4.2, page 48).

The application of this literature in Bread Factory A will now be discussed.

- **Case study**

Bread Factory A produces an annual **marketing plan**. The marketing plan commences with the **vision** and the **mission** (paragraph 3.2, page 37) of Bread Factory A. The marketing plan is produced annually by the management of Bread Factory A.

It is followed by an analysis of the **internal** and **external environment** using the following methods:

- Porter's five forces model (paragraph 3.3.1.1, page 39);
- SWOT analysis (paragraph 3.4.1, page 47); and
- Porter's generic strategies (paragraph 3.3.4, page 45)

The marketing plan is completed with a **conclusion** of the impact that the environment has on Bread Factory A and steps to be taken to address the influences and reduce the impact thereof.

This marketing plan is sent to the holding company's head office for scrutiny and approval.

According to the General Manager of Bread Factory A, once a year the General Manager attends a group-wide strategy session where the group's strategy is discussed as well as that of the affiliated organisations. The purpose of this strategy session is to communicate the

group's strategic objectives to all the affiliated organisations and to discuss each affiliated organisation's strategy based on its marketing plan.

As highlighted by the literature, a value chain analysis (paragraph 3.4.2, page 48) assists in the analysis of the internal environment. The General Manager prepared a value chain for Bread Factory A in the year 2000. It includes a breakdown of the primary activities, namely inbound logistics, operations, outbound logistics, marketing and sales and service. The support activities include the firm's infrastructure, human resources, technology development and procurement. An updated version of the value chain of Bread Factory A does not exist and the value chain does not form part of the annual marketing plan as produced by Bread Factory A.

The value chain of Bread Factory A is illustrated in figure 6.1.

Figure 6.1: The value chain of Bread Factory A

Firm Infrastructure	Financing, Legal Support, Accounting				
Human resources	Recruiting, training, incentive system, employee feedback				
Technology Development	Inventory System, Material Selection	Process Optimisation	Truck Routing Procedure	Presentation of Bread	Return Procedure
Procurement	Flour, Water, etc.	Process Equipment	Trucks, Diesel, Crates	Bread, Shelves	
	Delivery of Raw Materials, Storage	Manufacture of bread, Wrapping, Packing on Crates	Loading, Delivery to customers	Pricing, Promotions, Discounts,	Customer Returns
	Inbound Logistics	Operations	Outbound Logistics	Marketing and Sales	Service

Source: (General Manager: Bread Factory A, 2000)

6.6 COMPARISON OF TRANSFER PRICES WITH THIRD PARTY QUOTATIONS

In order to achieve the specific research objective (paragraph 1.3.2.7, page 6), namely to determine whether the most beneficial transfer price determination method is used in Bread

Factory A, the different methods for determining transfer prices as prescribed by the literature in chapter 4 (page 54) were considered and applied to Bread Factory A.

Bread Factory A purchases the main ingredient in the production process, namely flour, from Miller A. Miller A and Bread Factory A form part of the same holding company (paragraph 6.2.5.1, page 82). The price at which Bread Factory A purchases flour from Miller A is therefore called a **transfer price** (paragraph 4.1, page 54).

The literature in chapter 4 (page 54) prescribes three methods for determining transfer prices, namely market-based transfer prices (paragraph 4.2.1, page 57), cost-based transfer prices (paragraph 4.2.2, page 58) and negotiated transfer prices (paragraph 4.2.3, page 60).

The analysis of the results of each method will now be discussed.

- **Market-based transfer price**

In order to determine the market price of flour, the researcher obtained quotations to purchase flour from direct competitors of Miller A as suggested by the literature in paragraph 4.2.1 (page 57). Three independent quotations on flour prices were obtained based only on **payment terms** and **delivery**. The payment terms were specified as cash on delivery and delivery charges were included in the price of the quotations. There were no negotiations on the purchase prices and it is probable that discount on the quoted prices would be given due to the large volume of flour purchased.

Quotations were obtained from Miller B, Miller C and Miller D for the following types of flour:

- White bread flour; and
- brown bread flour.

The purchase prices were compared based on percentage difference with the prices of Miller A. The actual prices cannot be published in congruence with the confidentiality agreement with Bread Factory A and Millers B, C and D. The results of the comparison are tabulated in table 6.4.

Table 6.4: Comparison of purchase prices of flour with Miller A's transfer prices

	Miller A	Miller B	Diff with Miller A	Miller C	Diff with Miller A	Miller D	Diff with Miller A
White bread flour	100.00%	91.33%	-8.67%	81.88%	-18.12%	95.25%	-4.75%
Brown bread flour	100.00%	94.53%	-5.47%	86.23%	-13.77%	97.46%	-2.54%

Abbreviation: Diff: Difference

Table 6.4 indicates that Miller B's white bread flour price is 8.67% cheaper and brown bread flour's price is 5.47% cheaper than Miller A's flour prices. When comparing Miller C's prices, white bread flour's price is 18.12% cheaper than Miller A's prices while brown bread flour's price is almost 14% cheaper. Miller D's white bread flour's price is 95.25% of Miller A's price, while brown bread flour's price is 97.46% of Miller A's price. Miller A's flour prices are therefore the most expensive compared to the three direct competitors' quotations.

- **Cost-based transfer price**

Unfortunately the researcher did not have access to the financial records of Miller A (paragraph 7.3, page 127) and was therefore unable to determine the transfer price of flour from Miller A to Bread Factory A based on cost (paragraph 4.2.2, page 58). The highest and lowest acceptable transfer prices based on cost could not be calculated.

The researcher did not have access to Miller A's customer base to determine whether it has an external market to sell flour or whether Bread Factory A is the only client of Miller A. If Bread Factory A is the only client of Miller A, the transfer price set by Miller A should cover the full costs of Miller A in order not to incur a loss (example 4.1, page 58).

The researcher also does not have information about the production capacity of Miller A's plant to determine whether it has idle capacity. If Miller A does have idle capacity, the transfer price could be affected as illustrated by example 4.2 (page 61). The only costs Miller A would then have to recover from the income of the transfer would be the variable costs, because the fixed costs would already have been recovered by Miller A's other sales. The lowest acceptable transfer price for Miller A would then be based on variable costs.

- **Negotiated transfer price**

Bread Factory A **cannot negotiate** (paragraph 4.2.3, page 60) the price at which the flour is purchased. It has therefore no power to negotiate supplier or price (paragraph 6.2.5.1, page 82).

Due to the cheaper quotations obtained from the three direct competitors of Miller A (table 6.4, page 119) it would be more beneficial for Bread Factory A to purchase flour from one of these suppliers. The purchase would depend on the impact that it has on Bread Factory A and Miller A's holding company's financial results. The switch of suppliers would also depend on the qualitative factors such as the quality of flour, delivery of the flour, etc.

The researcher did not have access to the holding company's financial records to determine whether the current method of determining transfer prices is beneficial to the group as a whole.

6.7 SUMMARY

In this chapter an analysis of the results were performed. The results were discussed based on the research objectives set in chapter 1 (page 6).

First the information gathered through the interviews that were conducted was discussed. This was followed by an analysis of each of the cost items used in the determination of the delivery route contribution. These costs were analysed and classified either as direct or indirect costs, variable or fixed, controllable or non-controllable and relevant or irrelevant costs. The researcher used these classifications of the cost items to calculate delivery route profitability using the segment reporting approach.

Fierce competition in the bread industry required an analysis of the competitive advantage of Bread Factory A. The strategic documents that Bread Factory A prepares were evaluated to ensure compliance with the literature discussed in chapter 3.

The chapter was concluded with a comparison of transfer prices of flour with third party quotations in order to determine whether the transfer price that Bread Factory A pays to Miller A is market-related.

Thereby the specific objectives relating to empirical studies in Bread Factory A (paragraph 1.3.2.4 to 1.3.2.7, page 6) have been reached namely to determine the behaviour, traceability and relevancy of costs used in the calculation of the profitability of delivery routes, to calculate the delivery route profitability per delivery route, to determine whether Bread Factory A follows the guidelines provided by the literature on competitive advantage and to determine whether the most beneficial transfer price determination method is used.

CHAPTER 7

CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

The final specific research objectives (paragraph 1.3.2.8 to 1.3.2.10, page 6) were to formulate recommendations regarding the method used to measure the profitability of delivery routes at Bread Factory A, to formulate recommendations regarding Bread Factory A's approach to achieve competitive advantage and to formulate recommendations regarding the determination of transfer prices of flour from Miller A to Bread Factory A.

In this concluding chapter, the findings of the research will be discussed. Furthermore, the limitations are highlighted and recommendations are made.

7.2 CONCLUSIONS

The conclusions of the research will be discussed based on the specific theoretical objectives of the research and the results obtained during the empirical study.

7.2.1 Conclusions regarding the specific theoretical objectives

The specific objectives regarding the literature study (objectives 1.3.2.1 to 1.3.2.3, page 6) are discussed below:

7.2.1.1 Cost terms and concepts referring to cost assignment, cost behaviour and costing systems

The cost terms and concepts were researched from the literature (Chapter 2, page 12), referring to cost assignment, cost behaviour and costing systems (objective 1.3.2, page 6). The research revealed that in order to manage costs effectively and to determine accurate product costs, costs have to be assigned accurately. Accurate product costs are imperative in an industry where competition is fierce, where switching costs are non-existent and where substitute products exist. Bread Factory A operates in such an industry. **Accurate product costing** enables management to set prices based on accurate information and improved strategic decision making.

Costs can only be assigned accurately once the behaviour of the cost has been identified. The behaviour of costs directly affects decisions regarding the activity levels of the production plant at Bread Factory A. The contribution theory and segment reporting are very important tools that can be used by organisations to improve planning, control and decision making. These tools appear to improve information about the delivery route profitability in Bread Factory A and therefore assist in improved decision making regarding the viability of delivery routes.

The costing systems incorporate the information about cost assignment and cost behaviour into reports that management can use to improve planning, control and decision making.

7.2.1.2 Competitive advantage

The literature study on competitive advantage (Chapter 3, page 36) as highlighted by objective 1.3.2.3, page 6, provided the theory to measure Bread Factory A's approach to competitive advantage.

In an industry where the barriers to entry have decreased rapidly since deregulation in 1991, new competitors are frequently entering the market. Smaller bakeries do not require a huge capital outlay and there is very little product differentiation, therefore the larger bakeries are fighting to maintain their sales volumes. **Strategic direction** and **decision making** are imperative to remain competitive and to remain profitable.

7.2.1.3 Determination of transfer pricing

From the literature study on determination of transfer pricing (chapter 4, page 54) as highlighted by objective 1.3.2.4 (page 6) it is clear that the determination of a *transfer pricing* policy is a controversial issue. *The effect of the transfer pricing policy should not have an impact on the profitability of the holding company, but it does impact on the "softer" issues, such as staff morale of the selling and buying divisions.*

The ideal transfer pricing policy to adopt is the **market-based transfer price** and the least ideal transfer pricing policy is the variable cost-based transfer price determination method, depending on whether the organisation has idle capacity or not. When the transfer price exceeds the market-based transfer price, it can have an effect on the buying division's staff morale and productivity and it directly affects the profitability of the buying division. Decisions can be made based on inaccurate information, because a segment might appear to

make a loss when in actual fact it would be profitable if the raw materials or intermediate goods were purchased at a lower price.

7.2.2 Conclusions regarding the specific empirical objectives

The conclusions regarding the specific empirical objectives (objective 1.3.2.4 to 1.3.2.7, page 6) are discussed below.

7.2.2.1 The behaviour, traceability and relevancy of costs used in the calculation of the profitability of delivery routes at Bread Factory A

In chapter 6, page 78, the researcher analysed the cost assignment and cost behaviour of the following costs (objective 1.3.2.4, page 6) to determine its use in the calculation of the profitability of delivery routes:

- Cost of sales;
- production expenses; and
- distribution costs.

The following conclusions were reached:

- Cost of sales expenses in the profit and loss statement of Bread Factory A only consist of the cost of raw materials, cost of factored goods and cost of intergroup purchases. The *indirect manufacturing overhead expenses (production expenses)* did not form part of the cost of sales cost per unit. The cost assignment by Bread Factory A was therefore not accurate and these expenses were not taken into account when decisions regarding the profitability of delivery routes were made.
- Theoretically the calculation of the profitability of the delivery routes used by Bread Factory A cannot be called a delivery route **contribution**, because not only variable costs are taken into account during the calculation. The accurate term would be a **delivery route segment margin**.
- All the other costs were assigned accurately.

7.2.2.2 The calculation of the delivery route profitability per delivery route at Bread Factory A

A calculation of the profitability of the delivery routes was performed (objective 1.3.2.5, page 6) by the researcher using the segmented income statement approach after all the costs were analysed to determine its behaviour, traceability and relevancy and accurate allocation. The researcher followed management accounting principles as prescribed by the literature (chapter 2, page 12) to conclude that an accurate calculation of the delivery route profitability per delivery route will be achieved by using the template prescribed in appendix 2 (page 141). The delivery route segment margins calculated for delivery routes 1 to 5 were all positive, (table 6.3, page 114) indicating that they contributed towards the recovery of the fixed costs of Bread Factory A as a whole.

7.2.2.3 Compliance of Bread Factory A with literature on competitive advantage

Objective 1.3.2.6 (page 6) was to determine whether Bread Factory A complies with the literature on competitive advantage. Bread Factory A produces an annual marketing plan that is sent to the holding company's head office for approval. This marketing plan highlights the vision and mission of Bread Factory A. A competitors' analysis is performed using Porter's five forces model. A SWOT analysis highlights the strengths, weaknesses, opportunities and threats of the environment that Bread Factory A operates in. An analysis of the market is performed indicating what the key success factors are that would ensure sustained growth for Bread Factory A, both in profit and volumes.

Porter's generic strategies are discussed to form a clear strategic direction for Bread Factory A. To complete the marketing plan, a conclusion is drawn based on all the information gathered.

The researcher can therefore conclude the following:

- Bread Factory A does comply with the literature on competitive advantage as discussed in chapter 3 (page 36).
- One of the weaknesses raised in the marketing plan of Bread Factory A is that there is no clear strategic direction due to the non-existence of a dedicated marketing department. It therefore does not help that strategic direction exist only on paper, but cannot be executed. Definite steps have to be taken to execute the defined strategy especially in the extremely competitive environment that Bread Factory A operates in.

7.2.2.4 Transfer price determination method used in Bread Factory A

Bread Factory A has **no power** over the **supplier** and **price** of flour provided by Miller A. The transfer price of flour is determined and enforced by the holding company. The transfer price has no effect on the profitability of the holding company, but it has a definite impact on the profitability of Bread Factory A and Miller A.

The researcher came to the following conclusions by referring to the literature in chapter 4 (page 54) and comparison with competitor flour prices:

- The ideal transfer pricing determination method (objective 1.3.2.7, page 6) is to use the **market-based transfer price** (paragraph 4.2.1, page 57). This method enables organisational profits to be evaluated against direct competitors because the profit is a reflection of what the divisional profit would have been if the product was sold on the outside market (paragraph 4.2.1.1, page 57). The method that was used to determine the transfer pricing policy by the holding company of Bread Factory A is the **dictated** transfer price method (paragraph 4.2, page 56).
- Based on a comparison with three direct competitors, the price paid by Bread Factory A to Miller A for flour is in all three cases **much higher** (up to 18% higher for white bread flour) than the market price. The prices obtained from the competitors were before any discount was given for bulk purchases.
- The transfer pricing policy can affect the **performance-related incentives** and the morale and productivity of the management of Bread Factory A.
- Due to the high cost of flour, compared with direct competitors, the production cost of bread in Bread Factory A is higher than what it would be if flour was obtained at market value. **Decisions** regarding the profitability of delivery routes would therefore be affected, for example, a delivery route segment margin would be calculated as a loss, but if the cost of flour was market-based, the delivery route would record a profit. The result could be ineffective decision making regarding the viability of delivery routes.

7.3 LIMITATIONS OF THE RESEARCH

The following shortcomings were identified during the research:

- The financial records of Miller A and the holding company could not be obtained. This would have enabled the researcher to determine whether the transfer pricing policy was to the advantage of the holding company as a whole.
- Interviews were not conducted with the holding company's staff to obtain the reasoning behind the transfer pricing policy.
- The classifications of costs were performed based on the literature (chapter 2, page 12) and interviews (paragraph 6.2, page 78) conducted with the management of Bread Factory A. Some assumptions were made in the classifications of the costs due to the complexity and different factors influencing the costs.

7.4 RECOMMENDATIONS

The following recommendations are made based on the specific objectives (paragraph 1.3.2.8 to 1.3.2.10, page 6).

7.4.1 Measurement of the profitability of delivery routes at Bread Factory A

The following recommendations are made in terms of the calculation of profitability of the delivery routes at Bread Factory A (objective 1.3.2.8, page 6):

- The **segment reporting** approach (paragraph 2.4.1, page 22) should be followed when reporting the profitability of delivery routes at Bread Factory A.
- Bread Factory A should classify production costs and distribution costs as either variable, traceable fixed costs or common fixed costs.
- The variable production expenses, namely oven fuel, production wages and wrapping wages should be allocated to the **variable cost of sales**, based on the total sales volumes.

- The other production expenses should be classified as either traceable or common fixed costs.
- After the other production expenses are classified as either traceable or common fixed costs, the traceable fixed costs should be allocated as part of the delivery route segmented income statement and the calculation of delivery route segment margin.
- Bread Factory A should compile all the variable expenses (cost of raw materials, drivers' commission, oven fuel, production wages and wrapping wages) and deduct the variable expenses from the total sales to obtain a **contribution margin**.
- Traceable fixed costs should be deducted from the contribution margin to obtain the **segment margin**.
- Bread Factory A should make decisions based on the **segment margin** per delivery route.

7.4.2 Bread Factory A's approach towards achieving competitive advantage

The following recommendations are made based on Bread Factory A's approach towards achieving competitive advantage (objective 1.3.2.9, page 6):

- Bread Factory A should take definite steps to execute the defined strategy especially in the extremely competitive environment that Bread Factory A operates in.
- An updated version of the value chain of Bread Factory A should be created by Bread Factory A and included in their annual marketing plan.

7.4.3 Determination of transfer prices of flour from Miller A to Bread Factory A

The following recommendations are made based on the determination of transfer prices for transfers from Miller A to Bread Factory A:

- The holding company should involve both Bread Factory A and Miller A in the setting of the transfer price of flour. **Negotiations** should take place between these three parties to ensure that a more market-related transfer price is set.

- **Decisions** regarding the profitability of delivery routes should be reconsidered after adjustments have been made to the cost of raw materials. These adjustments should take into account the higher price paid to Miller A for flour.

7.5 SUMMARY

In this chapter the conclusions and recommendations resulting from the study were presented and discussed.

First the conclusions based on the literature study were discussed. This was followed by the conclusions reached based on the empirical study. The conclusions resulting from the study can be briefly summarised as that Bread Factory A mostly adheres to management accounting principles as prescribed by the literature study (chapter 2 to 4).

The limitations of the research were discussed and the chapter concluded with the recommendations.

The areas where improvements are necessary are highlighted by the **recommendations**:

- The **segment reporting** approach should be followed by Bread Factory A in the calculation of delivery route profitability.
- **Production expenses** should be analysed and assigned to the cost of sales figure of products manufactured.
- Bread Factory A should make decisions on the viability of delivery routes based on the **segment margin**.
- Bread Factory A should take definite steps to **execute** the defined strategy especially in the extremely competitive environment that Bread Factory A operates in.
- An updated version of the **value chain** of Bread Factory A should be created by Bread Factory A and included in their annual marketing plan.

- The holding company of Bread Factory A should reconsider its **transfer pricing policy** on flour and enter into negotiations with both Bread Factory A and Miller A.
- **Decisions** regarding the profitability of delivery routes should be reconsidered after adjustments have been made to the cost of raw materials.

The last research objective was thereby reached and the research study concluded.

BIBLIOGRAPHY

- ANON. 1990. Off to market. *Financial Mail*, 117(1):78, 6 Jul.
- ANON. 1991a. Price set to rise as bread subsidy goes. *Pretoria News*: 2, 28 Febr.
- ANON. 1991b. Nuwe tydvak vir bakbedryf. *Die Transvaler*: 11, 1 Mar.
- ANON. 1991c. Om den brode. *Beeld*: 14, 30 Mei.
- ANON. 1991d. Half-baked deregulation. *Financial Mail*, 122(7):79-80, 15 Nov.
- ANON. 1998. Surplus strangles wheat farmers. *Farmer's Weekly*: 38, 22 May.
- ANON. 2004. Performance is evaluated. *Sowetan*: 10, 31 Aug.
- ANON. 2005a. Management Accounting – Business strategy. *Financial Management*, 33-34, 1 Febr.
- ANON. 2005b. Management Accounting – Performance evaluation. *Financial Management*, 45-47, 1 Mar.
- ANON. s.a. Segment reporting and decentralization – Chapter 12.
http://northonline.sccd.ctc.edu/pbouker/ACC230_Folder/Chapter12_SegmentReporting.htm
Date of access: 23 Oct. 2006
- BABBIE, E. 2004. The practice of social research. 10th ed. Belmont, Calif.: Wadsworth/Thomson Learning. 493 p.
- BABBIE, E. & MOUTON, J. 2001. The practice of social research. South African edition. Oxford: Oxford University Press. 674 p.
- BOTTEN, N & SIMS, A. 2004. Management Accounting – Business strategy. Oxford: Elsevier Ltd. 623 p.
- BRAND. 1991. Price set to rise as bread subsidy goes. *Pretoria News*: 2, 28 Febr.

BREAD FACTORY A. 2006. Marketing plan. 6 p.

BREAD FACTORY A. 2006. Profit and loss statement. 18 p.

BREAKWELL, G.M. 1990. Interviewing. London: The British Psychological Society. 100 p.

CHASE, R.B., JACOBS, F.R. & AQUILANO, N.J. 2004. Operations management for competitive advantage. 10th ed. New York: McGraw-Hill/Irwin. 765 p.

CHENG, J.M. 2002. A breakthrough in transfer pricing: The renegotiate-any-time system. *Management Accounting Quarterly*, 1-8, Winter.

DE WIT, B & MEYER, R. 2005. Strategy synthesis: Resolving strategy paradoxes to create competitive advantage (Text and readings). 2nd ed. London: International Thomson Learning. 469 p.

DRURY, C. 2004. Management and cost accounting. 6th ed. London: International Thomson Learning. 1280 p.

EDMONDS, T.P., EDMONDS, C.D., OLDS, P.R. & SCHNEIDER, N.W. 2006. Fundamental managerial accounting concepts. 3rd ed. New York: McGraw-Hill/Irwin. 654 p.

EHLERS, M.B. & LAZENBY, J.A.A. 2006. Strategic management, Southern African concepts and cases. 5th ed. Pretoria: Van Schaik. 308 p.

ENSIGN, P.C. 2001. Value chain analysis and competitive advantage. *Journal of General Management*, 27(1):18-42, Autumn.

FALSHAW, J.R., GLAISTER, K.W. & TATOGLU, E. 2006. Evidence on formal strategic planning and company performance. *Management Decision*, 44(1):9-30.

FINANCIAL MANAGER: BREAD FACTORY A. 2006. Verbal communication with the researcher. Bread Factory A.

GARRISON, R.H., NOREEN, E.W. & BREWER, P.C. 2006. *Managerial Accounting*. 11th ed. New York: McGraw-Hill/Irwin. 863 p.

GENERAL MANAGER: BREAD FACTORY A. 2006. Verbal communication with the researcher. Bread Factory A.

GHOSH, D. 2000. Complementary arrangements of organizational factors and outcomes of negotiated transfer price. *Accounting Organizations and Society*, 25(7):661-682.

HANSEN, D.R. & MOWEN, M.M. 2003. *Cost Management: accounting and control*. 4th ed. Cincinnati, Oh.: South –Western College. 1029 p.

HENNING, E., VAN RENSBURG, W. & SMIT, B. 2004. Finding your way in qualitative research. Pretoria: Van Schaik. 179 p.

HILTON, R.W., MAHER, M.W. & SELTO, F.H. 2006. *Cost Management, Strategies for Business Decisions*. 3rd ed. New York: McGraw-Hill/Irwin. 914 p.

HORNGREN, C.T., DATAR, S.M. & FOSTER, G. 2006. *Cost accounting: a managerial emphasis*. 12th ed. Upper Saddle River, N.J.: Prentice Hall. 868 p.

HUGHSON, L. 1992. Bakery business: deregulation fetters still in place? *Food Review*, 35 – 37, Aug / Sept.

JEHLE, K. 1999. Budgeting as a competitive advantage. *Strategic Finance*, 81(4):54-57.

KARAMI, A., ROWLEY, J. & ANALOUI, F. 2006. Research and knowledge building in management studies: an analysis of methodological preferences. *International journal of Management*, 23(1):43-52.

KAZAN, H., ÖZER, G. & ÇETIN, A.T. 2006. The effect of manufacturing strategies on financial performance. *Measuring Business Excellence*, 10(1):14-25.

KOSIOR, J.M. & STRONG, D. 2006. Supply/demand chain modeling utilizing logistical-based costing. *Journal of Enterprise Information Management*, 19(3):346-360.

KVALE, S. 1996. Interviews: an introduction to qualitative research interviewing. Thousand Oaks, Calif.: Sage Publications. 326 p.

LEEDY, P.D. & ORMROD, J.E. 2005. Practical research: planning and design. 8th ed. Upper Saddle River, N.J.: Prentice Hall. 319 p.

LONGMAN BUSINESS ENGLISH DICTIONARY. 2001. 4th ed. Essex: Pearson Education Limited. 533 p.

LYONS, H. 2005. Food industry case studies: a suitable medium for publication. *British Food Journal*, 107(9):702-713.

MAKGALEMELE, T. 2006. Bakeries cheat consumers with underweight bread. *Saturday Weekend Argus*: 1, 29 Apr.

MARTIN, R. s.a. Management Accounting: concepts, techniques & controversial issues. <http://www.maaw.info/Chapter6.htm#concepts> Date of access: 21 Oct. 2006

MILLER B. 2006. Verbal communication with the researcher. Potchefstroom.

MILLER C. 2006. Verbal communication with the researcher. Potchefstroom.

MILLER D. 2006. Verbal communication with the researcher. Potchefstroom.

MOOS, A. 2003. Broodprys styg in Julie. *Beeld*: 3, 7 Aug.

NAIDU, E. 2006. Consumer bodies call for action on underweight bread. *Sunday Independent*: 2, 21 May.

NEUMAN, W.L. 2006. Social Research Methods: qualitative and quantitative approaches. 6th ed. Boston: Allyn and Bacon. 592 p.

NIEMAND, A., MEYER, L., BOTES, V.L. & VAN VUUREN, S.J. 2004. Fundamentals of cost and management accounting. 5th ed. Johannesburg: LexisNexis. 695 p.

OED (Oxford English Dictionary). 1978. Cost. Oxford: Oxford University Press.

- PEARCE, J.A.II. & ROBINSON, R.B.Jr. 2003. *Strategic Management: Formulation, implementation and control*. 8th ed. New York: McGraw-Hill/Irwin. 344 p.
- PITTS, R.A. & LEI, D. 2003. *Strategic Management: Building and sustaining competitive advantage*. 3rd ed. Canada: Thomson Learning South-Western. 555 p.
- PORTER, M. 1998. *Competitive strategy: Techniques for analyzing industries and competitors*. New introduction. New York: Free Press. 396 p.
- QUÉRÉE, A. & YEOH, J. 2006. Segment reporting through the eyes of management. *Chartered Accountants Journal*, 85(2):64-65.
- RATHBONE, C.L.H. 2006. Value creation. *Financial Management*. 40, July/Aug.
- RIEGE, A.M. 2003. Validity and reliability tests in case study research: a literature review with “hands-on” applications for each research phase. *Qualitative Market Research: an international journal*, 6(2):75-86.
- RUSHINEK, A. & RUSHINEK, S.F. 1994. Improving profitability with segmented income statements for Local Area Networks. *Industrial Management & Data Systems*, 94(2):7-15.
- SAHAY, S.A. 2003. Transfer pricing based on actual cost. *Journal of Management Accounting Research*, (15):177-192.
- SAMPSON, P. 1972. Qualitative research and motivation research. (In Worcester, R.M., ed. *Consumer Market Research Handbook*. London: McGraw-Hill. p. 7-27.)
- SANDERS, J., ALEXANDER, S. & CLARK, S. 1999. New segment reporting. Is it working? *Strategic Finance*, 81(6):35-38.
- SCHOLTZ, H.G. 1999. Die invloed van deregulering op die bemarking van brood. Potchefstroom: NWU. (Skripsie – MBA) 37 p.
- SEAL, W., GARRISON, R.H. & NOREEN, E.W. 2006. *Management Accounting*. 2nd ed. Berkshire: McGraw-Hill Education. 971 p.

- SILVI, R. & CUGANESAN, S. 2006. Investigating the management of knowledge for competitive advantage: a strategic cost management perspective. *Journal of Intellectual Capital*, 7(3):309-323.
- STANLEY, J. 2004. Comparables key to transfer pricing. *Business day*: 6, 11 Oct.
- SULAIMAN, M., AHMAD, N.N.N. & ALWI, M.N. 2005. Is standard costing obsolete? Empirical evidence from Malaysia. *Managerial Auditing Journal*, 20(2):109-124.
- SULAIMAN, M., AHMAD, N.N.N. & ALWI, M.N. 2004. Management accounting practices in selected Asian countries: A review of the literature. *Managerial Auditing Journal*, 19(4):493-508.
- TANG, R.Y.W. 1992. Transfer pricing in the 1990s. *Management Accounting*, 22-26, Febr.
- TAYLOR, M. 2005. Management Accounting – Business Strategy. *Financial Management*, 38-40, 1 Nov.
- TSHETLO, T. 2006. SABS finds bread underweight. *Citizen*: 9, 3 May.
- ULIANA, E. & MARCUS, D. 1990. Accounting for managers: an introduction to financial and management accounting. 3rd ed. Kenwyn: Juta. 153 p.
- VAN ROOYEN, S. 2004. The financial viability of the training and development of pharmacist's assistants. Potchefstroom: NWU. (Mini-dissertation – M.Comm) 232 p.
- VIGARIO, F. 2005. Managerial Accounting. 3rd ed. F. Vigarario. 532 p.
- WATKINSON, E. & MAKGETLA, N. 2002. South Africa's food security crisis. <http://www.naledi.org.za/cgi-bin/naledi/na-showitem.pl?publication:1033299505> Date of access: 4 Oct. 2006.
- WOODS, N.F. & CATANZARO, M. 1988. Nursing research: theory and practice. St. Louis: Mosby. 590 p.

YIN, R.K. 1981. The case study crisis: some answers. *Administrative Science Quarterly*, 26:58-65.

YIN, R.K. 2003. Case study research: design and methods. 3rd ed. California: Sage Publications, Inc. 181 p.

ZIMMERMAN, J.L. 2006. Accounting for decision making and control. 5th ed. New York: McGraw-Hill/Irwin. 800 p.

APPENDIX 1: SEMI-STRUCTURED INTERVIEW QUESTIONNAIRE

THE APPLICATION OF MANAGEMENT ACCOUNTING PRINCIPLES IN THE BREAD INDUSTRY: A CASE STUDY

GENERAL

1. What is your job title?
2. Who do you report to – your line of authority?
3. How long are you employed at Bread Factory A?

FINANCIAL REPORTING

4. Briefly explain the ownership structure of Bread Factory A.
5. Which financial accounting package do you use?
6. How often does internal reporting occur?
7. In which format do you report internally?
8. How often does external reporting occur?
9. In which format do you report externally?
10. What are your main sources of information when preparing the financial records?

MANUFACTURING

11. Briefly explain the manufacturing process you follow to produce bread.
12. Which inventory do you keep at Bread Factory A for use in the production process?
13. With reference to the inventory suppliers: do you have one or many suppliers? Explain.
14. Briefly explain the inventory control process.

FINANCIAL RECORDS

15. I obtained a copy of your financial records. Briefly explain what each of the line items on the profit and loss statement consist of (income and expenses).
16. Did you develop the format of your reporting system yourself or is it prescribed by the holding company?

SEMI-STRUCTURED INTERVIEW QUESTIONNAIRE (CONT.)

SALES

17. Briefly explain your sales order system?
18. How do you maintain your customer base?
19. What strategy do you employ to increase your customer base?
20. Briefly explain your pricing structure?
21. Do customers qualify for discounts?
22. Based on what criteria do customers qualify for discounts?
23. Briefly explain your invoicing system?
24. Do you grant credit?

DESPATCHING OF BREAD

25. Briefly explain the despatching process of bread from Bread Factory A.
26. What control measures do you have in place to ensure that discrepancies between what was dispatched and what was loaded on the delivery trucks are eliminated?

DELIVERY OF BREAD

27. How often do you deliver bread?
28. Who determined the delivery routes?
29. How was the delivery routes determined?
30. Briefly explain the delivery process and the expenses involved.
31. Do the delivery vehicles belong to Bread Factory A or are the delivery function outsourced?
32. The delivery salaries and wages paid, how is it calculated and why?
33. Do you currently measure profitability of delivery routes?
34. If you do, how is it calculated?
35. How often do you measure the profitability of delivery routes?

COMPETITIVE ADVANTAGE

36. Do you have a strategic document with a clear vision and mission?
37. Do you set strategic objectives?
38. How often do you revise or update your strategy?

SEMI-STRUCTURED INTERVIEW QUESTIONNAIRE (CONT.)

COMPETITIVE ADVANTAGE (CONT.)

39. Are you responsible for your own strategy or is it prescribed by the holding company?

GROUP

40. Do you enter into any inter company transactions?

41. If yes, please provide details.

**APPENDIX 2: MICROSOFT EXCEL MODEL TO CALCULATE THE DELIVERY
ROUTE SEGMENT MARGIN**

	Routes				
	Route 1	Route 2	Route 3	Route 4	Route 5
<i>Sales volumes - in units (SV)</i>	0	0	0	0	0
Type A					
Type B					
Type C					
Type D					
Type E					
Type F					
	R	R	R	R	R
<i>Sales price per unit (SP)</i>					
Type A					
Type B					
Type C					
Type D					
Type E					
Type F					
<i>Discounts</i>					
<i>Cost of raw material (CRM)</i>					
Type A					
Type B					
Type C					
Type D					
Type E					
Type F					
<i>Drivers' commission (DC)</i> <i>(including outsourced)</i>					
Type A					
Type B					
Type C					
Type D					
Type E					
Type F					
<i>Oven fuel (OF)</i>					
<i>Production wages (PW)</i>					
<i>Wrapping wages (WW)</i>					
<i>Kilometres travelled (KM)</i>					
<i>Rate per kilometre (RKM)</i>					
<i>Rands</i>					
<i>Predetermined rates:</i>					
<i>Other production costs (OP)</i>					
<i>Other vehicle operating costs (OV)</i> <i>(including tyres)*</i>					
<i>Other distribution costs (OD)</i>					

TEMPLATE TO CALCULATE THE DELIVERY ROUTE SEGMENT MARGIN

Segmented income statement					
Sales (SV X SP) less discounts					
Less variable expenses:					
Cost of raw materials (SV X CRM)					
Oven fuel (SV X OF)					
Production wages (SV X PW)					
Wrapping wages (SV X WW)					
Drivers' commission (SV X DC)					
Contribution margin					
Less: traceable fixed expenses					
Other production costs (SV X OP)					
Vehicle operating costs (KM X RKM)					
Other vehicle operating costs (KM X OV)					
Other distribution costs (SV X OD)					
Delivery wages (Actual)					
Segment margin					