

**PLAUT ACTIVITY BASED COSTING : AN EVALUATION OF ITS RELEVANCE
IN MULTI-PRODUCT COMPANIES**

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by
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Finally to my Lord and Saviour whom, with contrition I have to admit, I neglected most of all in the months prior to the completion of this work : "Thank you Lord that, because of who you are, you never leave us nor forsake us".

I certify that except as noted above and in the body of the text where indicated, the work in this report is my own and all references used are accurately reported.

Signed :

A handwritten signature in dark ink, appearing to read 'A. van der Merwe', written over a horizontal line.

A. van der Merwe

ABSTRACT

This research report is aimed at testing the relevance of Plaut Activity Based Costing, at a time in the international management accounting domain when debates are rife as to the future direction management accounting should take.

Relevance was tested using nine parameters. These nine parameters were acquired from contemporary management accounting literature. Questionnaires were sent to a population of Plaut Activity Base Costing users, who had to rate it as an approach to management accounting for its relevance against each parameter.

The findings of this research report are that the Plaut Activity Base Costing concept gives a superior degree of relevance. Of specific significance is the highly positive effect it has on the profitability of the companies that employ it. The findings also show that enhanced profitability is the product of the effective addressing of a wide range of issues within an organisation.

Plaut Activity Based Costing also tested highly positive on the other eight parameters for relevance.

The aim of the research report was achieved, and it can be unequivocally stated that a management accounting method does exist today that ensures relevance to its practitioners.

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Glossary of abbreviations and terms.

Abbreviations:

ABC	-	Activity base costing
ABS	-	Absolute value.
ACP	-	Analytical cost plan.
BOM	-	Bills of material.
CMA	-	Classic management accounting.
CUM	-	Cubic meters.
EDP	-	Electronic data processing.
FCA	-	Fixed cost absorption.
LH	-	Labour hours.
LHM	-	Labour hours maintenance.
MH	-	Machine hours.
MIS	-	Management information system.
SAP	-	Systems applications programs - a German software house.
OP	-	Operating.
OR	-	Organising.
PC	-	Planning and Control.
PH	-	Planning hours.
PPI	-	Plan price iteration.
ROI	-	Return on investment.
SH	-	Support hours.
SQM	-	Square meters.
SUH	-	Set-up hours.
TK	-	Ton-kilometres.

Terms:

Bills of material - a list that indicates all the raw material, semifinished parts and purchased items that are needed to manufacture a product.

Cost accounting - see management accounting.

Cost driver - that function/activity that a cost centre performs that results in its expense pattern.

Classic management accounting - the traditional approach to management accounting, using mainly direct labour as an allocation base.

Direct cost centre/activity base - a cost centre/ activity base of which the costs are charged directly to the receiver with a standard cost rate.

Indirect cost centre/activity base - a cost centre/activity base of which the costs are allocated indirectly by means of standard allocations to the receiver.

Non-measurable/secondary indirect cost centre/activity - a cost centre/activity of which the authorised budget is determined as a function of its receivers' activities.

Plaut ABC - a comprehensive approach to management accounting that utilises cost centre accounting, product costing and contribution margin management.

Primary cost - a cost is a primary cost when it is incurred

initially, i.e. an expense that triggers a flow of money out of the company.

Primary cost centre/activity base - a cost centre/activity base of which the costs are allocated or charged to a product.

Proportional cost - that part of total cost that has a linear relationship to the cost driver of the cost centre.

Relevance - the degree of practical pertinence supplied by a management accounting method to an organisation.

Routings - a sheet that indicates the total number of operations that a product must pass through in its manufacturing process.

Secondary cost - a cost that is charged, allocated or settled within an organisation i.e. this implies the flow of money within an organisation.

Secondary cost centre/activity base - a cost centre/activity base of which the costs are allocated or charged to other cost centres.

Variable cost - that part of cost that fluctuates over time, fluctuations are independent of cost centre activity levels. Variability are normally addressed in the Plaut ABC concept by the use of standards to smooth cost rates.

Chapter 1

1. Introduction.

In this chapter the historic background to the research report and an introduction to the topic will first be given. In this regard and in defining the topic, I relied heavily on *Relevance Lost, The Rise and Fall of Management Accounting* by Johnson and Kaplan, 1987, in which an excellent exposition is given of the historic development and the decline of management accounting.

The introduction to the topic will be followed by a statement of the purpose of the report and a detailed definition of the research topic. Next, the scope of the research report and the constraints on the report will be discussed.

The chapter will be concluded with the hypothesis to be tested for and the plan of development for the report.

2. Historic background to the research topic.

Although bookkeeping has been around for centuries the demand for management accounting information - information about transactions occurring within organisations - is a much more recent practice. In the centuries prior to the 1800's businesses tended to be small privately owned entities, with not much of an organisational structure and conducting business as buying and selling of goods or just selling a service, for example a blacksmith. Such a business, if in need of labour, would purchase it from the market.

In the 19th century, the industrial revolution brought gains to larger organisations through economies of scale. This resulted in larger firms with hierarchical structures. These organisations needed to be managed more thoroughly internally to ensure long-term viability.

The price of output from internal operations and the viability of internal services as opposed to purchased services became increasingly important, thus was born - management accounting. These early systems focused on conversion costs and produced summary measures such as cost per hour or cost per ton. This was normally the product of direct costs such as labour and material and an overhead allocation. The goals of these systems were to identify the different costs for the semifinished and final products as well as information on efficiencies and productivity measures. Formal financial statements did not have pre-eminence at this stage.

These early management accounting systems were established in the 19th century railways, textile and steel conversion industries. They were primarily intended to ensure the effective and efficient execution of the mono-activities of these types of organisations. Financial accounting and management accounting were still operating independently of each other.

Towards the latter half of the 19th century management accounting got a further push from the scientific management movement. The production standards developed by Frederick Taylor and the like

were easily converted into standard costs. This was used for management decision making - primarily pricing. The final developments in management accounting occurred in the early decades of this century with the emergence of multi-activity diversified corporations. More intricate measures became necessary to manage these organisations as the number of products produced and markets serviced increased. The development here was largely done by engineers for their own use. The information contained a lot of detail and was highly suited to product costing and management decision making.

The problem of how to allocate capital to multi-activities was effectively addressed by F. Donaldson Brown from the Du Pont Corporation (Kaplan, 1987, p. 11) by the introduction of the return on investment (ROI) concept. ROI was used to measure upper levels of management while departmental levels of management were still measured on efficiencies and productivity.

By 1925, virtually all management accounting practices used today had been developed: budgets for cash, income and capital, cost accounts, flexible budgets, sales forecasts, standard costs, variance analysis, transfer prices and divisional performance measures. (Kaplan, 1987, p. 12).

3. Introduction to the research topic.

In the decades following the 1920's management accounting systems did not keep up with the continued diversification in products

and increased complexity in production processes.

This can mainly be attributed to three factors:

- The emphasis placed on financial accounting at the time, to the detriment of management accounting.
- The lack of electronic data processing (EDP) capabilities in the decades following the 1920's.
- The costs involved in maintaining an additional system for management accounting.

The end result is what Johnson and Kaplan (1987) dubbed: 'Relevance Lost, The Rise and Fall of Management Accounting'. By implication, management accounting has reached the stage in the 1980's, in practice, where it was of little or no use to management for planning, control and decision making. This applies in all three areas of application in an organisation - namely operational, managerial and strategic.

4. A detailed definition of the research topic.

While financial accounting rapidly grew in stature after the 1920's, management accounting systems fell into neglect.

This is partly due to the fact that family-owned businesses were replaced by large shareholder-owned businesses. The vested interests of shareholders, pressures from capital markets, regulatory bodies and records for taxation purposes resulted in a lot more emphasis being placed on financial accounting and the

financial reports that it produced. Thus was born the public accountant who had a keen interest in establishing well-defined procedures for corporate financial reporting.

These auditors had little interest in the relevance of information for internal planning, control and decision making. Their concern was rather for the impact on reported profits. Inventory valuation for example, would be governed by conservative accounting practices based on objective, verifiable and realised financial transactions. This had two major implications:

- A too aggregate approach to product costing was adopted.
- Allocation bases were often incorrectly used and over exhausted - for example a 700 % overhead burden on labour costs.

This injudicious use of allocation bases was further aggravated by the reduction of the labour component in production and the drastic increase in the use of computers and robotics in the latter half of this century.

The lack of EDP technology in the first half of this century did nothing to stop the stagnation of management accounting from 1920 onward. The cost of maintaining an additional system for management accounting also added to the degeneration.

Management accounting ended up being a system dictated to by the external reporting mentality of financial accounting. This

resulted in it supplying information too late for effective control, with too little detail. Its focus was also distorted to that of period related short term profit reporting.

This resultant irrelevance is apparently assumed to apply in the 1990's in management accounting on an international scale. This is apparent from the debate amongst international academics on the current state of management accounting as well as the seminars and conferences being held worldwide to propose solutions to the current problem of irrelevance.

It seems to be accepted as fact that there is no management accounting method available today that ensures relevance, i.e. all have fallen prey to the regression of the past 70 years and the financial accounting syndromes that have captivated management accounting internationally.

This report questions this broadside levelled at management accounting in general since the mid 1980's. It will attempt to show that what is currently envisaged by 'enlightened' practitioners and academics alike, to restore relevance to management accounting, is unnecessary since a management accounting method that ensures relevance has been in existence since 1946.

Is it really necessary for managers to develop new systems parallel to their financial accounting systems on Personal Computers (Kaplan, 1990) to restore relevance? Or to try and

bridge the gap by patching their existing classic management accounting systems (Porter and Akers, 1987; Bromwich and Bhimani, 1989; Ferrara, 1990; Piper and Walley, 1991). The latter first having to overcome its intrinsic flaws (Kaplan, 1987; Cooper and Kaplan, 1988; Johnson, 1988; Cooper, 1990; Dugdale, 1990; Ostrenga, 1990; Morrow and Connolly, 1991).

The management accounting method that will be tested for its relevance is the Plaut Activity Based Costing (Plaut ABC) concept, instituted in 1946 by Dr. Plaut in Germany. By the end of the 1980's the Plaut ABC concept has been implemented in just over 2300 companies in 7 countries, namely Germany, Austria, Switzerland, the Netherlands, Italy, Namibia and South Africa. The concept is therefore an international one that should be considered whenever the relevance of management accounting is addressed in the 1990's.

5. Primary purpose of this report.

The research project will evaluate the Plaut ABC concept for its relevance as a management accounting method through empirical research. This will be done by testing for its relevance against the parameters for a relevant management accounting method.

The primary purpose of this research report is therefore to prove that Plaut ABC is a management accounting method that ensures relevance in practice today.

6. The scope of this research report.

This report does not attempt to prove that management accounting in general has not lost its relevance. The irrelevance of classic management accounting (CMA), as taught and practised in cost accounting today, is accepted as fact. What was said above on the section on historical development and by way of introduction to the topic of this report, is considered to apply specifically to CMA. The irrelevance of CMA has been thoroughly debated in the last few years (Kaplan, 1987; Cooper and Kaplan, 1988; Johnson, 1988; Cooper, 1990; Dugdale, 1990; Ostrenga, 1990; Morrow and Connolly, 1991) and even staunch proponents of CMA have admitted to it lacking (Porter and Akers, 1987; Piper and Walley, 1990; Ferrara, 1990).

The scope of this report is an international one and will, in addition to its primary purpose, also attempt to highlight two additional facts:

- Cooper and Kaplan either committed a serious oversight (wilfully or unknowingly) or their scope with 'Relevance Lost', in 1987 was too limited to be able to come to the conclusions which they did with regard to management accounting today.
- The debate currently raging on supposedly 'new' solutions to the problems of management accounting, such as Kaplan's Personal Computer approach to ABC, is an unnecessary re-invention of the wheel.

The research will further be carried out within the constraints

as set out below, and any expositions and interpretations of the results of this research project, outside of the said limitations, should therefore be considered as subject to certain assumptions or as purely hypothetical.

7. The constraints on the report.

The research project was only carried out amongst **multi-product companies** that have implemented the Plaut ABC concept since 1946. A multi-product company being a company with 20 or more end products. It therefore follows that the results of this project do not directly apply to other versions or interpretations of Activity Based Costing.

The questionnaires were **addressed to the Managing Directors** of the companies for completion by them. The results of this project should therefore not be considered as indicative of the Plaut ABC concept's ease of management accounting application, since such information would only be available from the management accountants themselves.

Only 10 % of companies outside of **German-speaking Europe** returned questionnaires. German fondness of detail and their culture of precision and thoroughness might well be a factor in the successful implementation and maintenance of the Plaut ABC concept. This statement however is not intended to diminish the results of this report but to ensure that all factors are considered, since with regard to this matter the Plaut ABC

concept and the accompanying software are of the more complex in the market today.

8. Methodology and hypotheses.

The parameters for relevance will first be gleaned from contemporary management accounting literature. For each of these parameters a standard will then be determined that represents the degree of relevance of CMA. This standard will form the base line against which Plaut ABC will be measured to determine whether it gives a significantly higher degree of relevance than CMA.

A statistical test will be done to establish the significance of the difference in relevance. The nil and alternate hypotheses that will be used in testing for the difference between two means are:

Nil hypothesis: The degree of relevance for companies that have implemented the Plaut ABC concept is equal to the degree of relevance of CMA.

Alternate hypothesis: The degree of relevance for companies that have implemented the Plaut ABC concept is not equal to the degree of relevance of CMA.

9. Plan of development of the report.

In the next 6 chapters (Chapter 2 to 7) a detailed discussion on Plaut ABC theory will follow. Chapter 8 will contain an exposition of the parameters for relevance from contemporary management accounting literature as well as a discussion on the design of the questionnaire.

Chapter 9 will describe the procedure followed in gathering data. Chapters 10 and 11 will contain the findings of the research report and the discussion and analysis of findings respectively. Finally, the conclusion to the research report will be given in Chapter 12.

Chapter 2

1. Introduction.

This chapter will serve as an introduction to Plaut ABC. A short historic overview of the company and its product will be given as well as its current standing in the market. In section 3 the Plaut ABC concept's focus, objectives, its requirements and functions will be highlighted.

This will be followed by a discussion of the basic cost relationships underlying activity based costing as seen by the Plaut organisation. An introduction to planning in Plaut ABC will be given in section 5.

Finally, the chapter will be concluded with the areas of application of the Plaut ABC concept.

2. The history of the Plaut organisation.

2.1. Introduction.

Hans Georg Plaut was born in Hanover on 11.2.1918. His tertiary training started of in mechanical engineering. He was subsequently employed as a Quality control engineer. While in this capacity, in 1942, he was drafted to assist with the introduction of a management accounting system. On completion he joined a consulting practice in Hanover, the Michel Institute for Manufacturing Science.

2.2. Plaut ABC.

In 1946 he established his own consulting practice, known today as Organisation Plaut AG. The main purpose of the firm was the development and implementation of control systems for production and service industries.

Plaut initially had mixed successes with academics on his ideas concerning management accounting. In 1948 he teamed up with Wolfgang Kilger, a lecturer at the Gutenberg Schule. Through the years Kilger penned a number of books, the most noteworthy of these probably 'Flexible Plankostenrechnung und Deckungsbeitragsrechnung' an 800 page explication of Plaut ABC theory, which first appeared in 1961.

Plaut does not lay claim to conceiving the activity base costing concept, but he does lay claim to a comprehensive approach to management accounting. This approach involves a unique blend of historically founded concepts and novel approaches to management accounting practice. The approach will be explained in detail in subsequent chapters. It is interesting to note that the 'Plaut ABC' acronym, is a more recent phenomenon and are mainly used by English speaking clients of the firm. In German-speaking Europe the concept is generally referred to as 'Grenzplankosten- und Deckungsbeitragsrechnung', which have a much broader meaning than the term activity based costing.

2.3. Electronic data processing.

The complexity of the Plaut ABC concept led to the early identification of EDP needs. Plaut himself published articles on the subject as early as 1951. 'Lochkarten und Elektronik im Industriellen Rechnungswesen' was his first formal writing on the subject, it appeared in 1958. Subsidiaries to the Plaut consulting firm, Plaut Software AG and Plaut Software GmbH, were founded to develop mainframe software specifically for Plaut ABC.

In more recent years the Plaut company entered into a joint venture with a leading German software house, Systems Application Programs. The latter is the pioneer of and the world leader in 'Integrated on-line real-time' mainframe software.

2.4. Current standing in the market.

The Plaut consulting firm has grown since inception and today employs ± 500 people. The company is considered as the consulting firm on management information and costing in German speaking Europe.

Some of the 2300 companies that have implemented the Plaut ABC concept are BMW, Bosch Siemens, Birfield Transmissioni, Lufthansa, DAF Trucks, IBM Germany, Hoechst, Kodak, Mobil Oil, Michelin, Pirelli, South African Airways and Porsche.

The information on the historic development of the Plaut

organisation was obtained from Scheer (1988, p.3-15).

3. The Plaut ABC concept.

3.1. Its focus.

The Plaut ABC concept has the intention of directing an organisation's focus on three aspects:

- Future oriented through planning.
- Decision oriented through timely, relevant information.
- Case oriented as opposed to the traditional financial accounting approach of being period oriented.

(Plaut seminar notes, 1991, p. 1.10-01).

3.2. Its objectives.

The three main objectives are:

- Cost control.
- Profit control.
- Management data information preparation.

(Plaut seminar notes, 1991, p. 1.10-03).

3.3. Requirements to support it.

The requirements to meet these objectives are:

- An accounting system.
- A planning system.
- An information system.

(Plaut seminar, 1991, p. 1.10-02).

The word 'system' above does not mean computer software, but rather implies the concept or philosophy.

A further requirement is that of an EDP system. The following is a summary of the needs that an EDP system should satisfy:

- Up to date.
- Integrated.
- User friendly.
- Adaptable.
- Stable.
- Secure.

(Plaut seminar notes, 1991, p. 1.30-01).

3.4. Its functions.

The functions of the Plaut ABC concept are the following:

- Planning : The planning process is normally referred to as Analytical Cost Planning (A zero-based approach).
- Control : This is done by means of a flexible budget, generally referred to as the Authorised Budget.
- Analysis : This entails the review and interpretation of variances.

(Plaut seminar notes, 1991, p. 1.10-04).

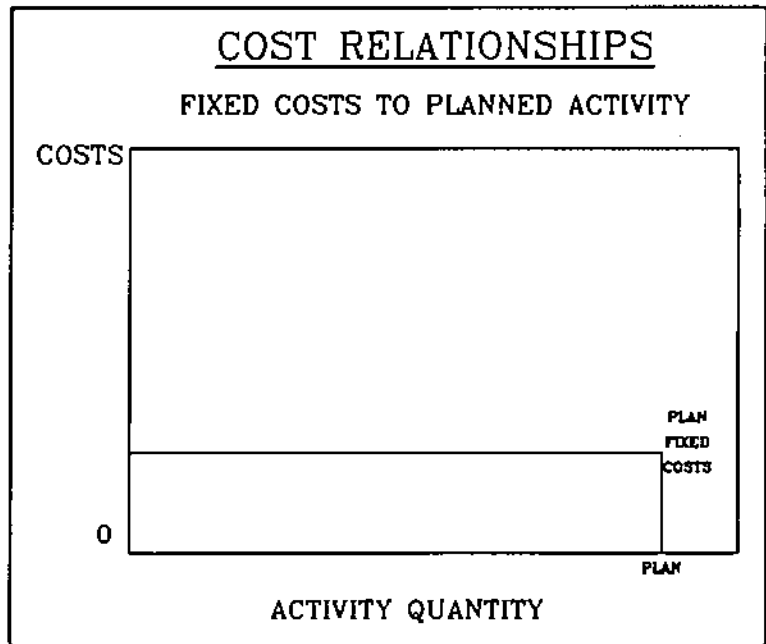
4. Cost relationships in the Plaut ABC realm.

(Kilger, 1988, p. 38 - 40).

- Fixed costs to activity quantity.

As can be seen from Figure 2.1, planned fixed costs will not vary with the level of activity. For a specific planning period and for a given level of planned activity the total fixed

Figure 2.1



cost, to supply such a service, will not change. Fixed costs will however have a stepped relationship to activity quantity over the long term, i.e. at a certain higher level of activity output, some capital investment is required to further increase output. (Vikas, 1991, p.40).

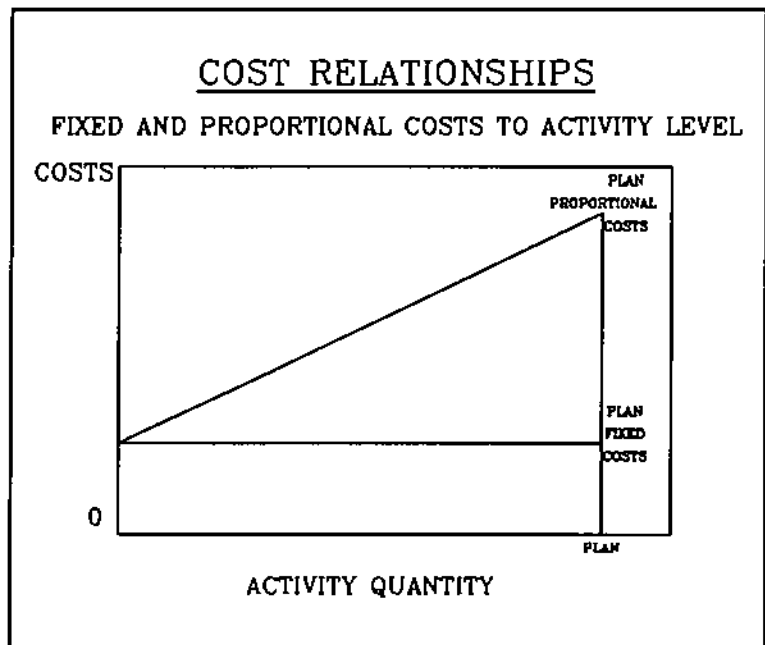
- Proportional and fixed costs to activity quantity.¹

Figure 2.2 illustrates the relationship between total costs (fixed costs and proportional costs) and activity quantity. The theory here is that for an activity, which a cost

¹ Refer the section on glossary of terms for an explanation on the difference between proportional and variable costs within the Plaut ABC concept.

18
Figure 2.2

centre produces, there exists a linear relationship between the activity quantity being produced and the proportional costs incurred. That is to say



that for each unit of activity there is an additional cost amount needed to produce it (within a given fixed cost). This amount is equal to the amount needed to have produced the previous unit of activity as well as the amount needed to produce the next activity unit. (Vikas, 1991, p.40).

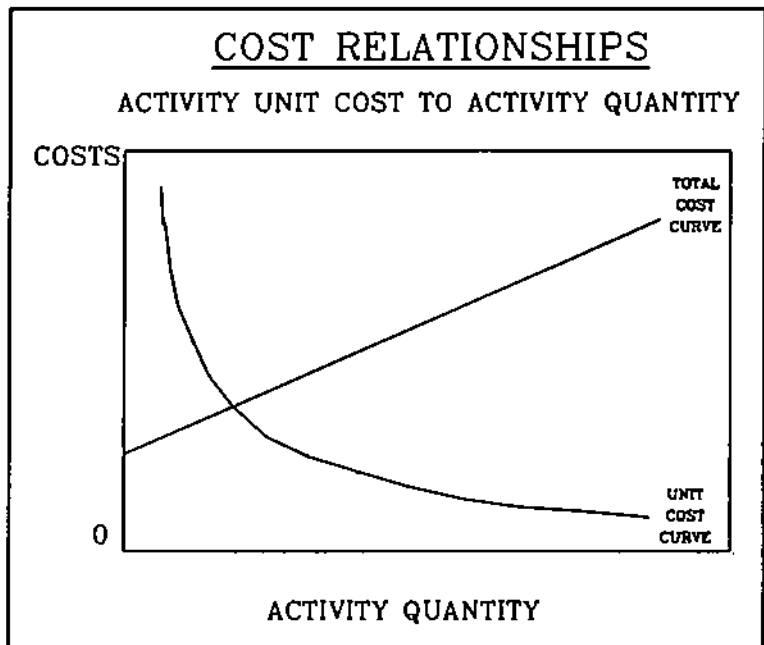
- Activity unit cost to activity quantity.

As can be seen from Figure 2.3, for a given amount of fixed cost, the cost per activity unit decreases as the level of activity increases. The figure also indicates that for a specific planned activity level only one activity rate exists. The standard rate calculated for each activity at the beginning of a planning period remains at the calculated value for the whole planning period. This standard rate comprises a proportional component and a fixed component. This has the implication that producing less activity than planned, will therefore result in the

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Figure 2.3

under-recovery of fixed costs and producing more of an activity than planned will result in the over-recovery of fixed costs. Note that an over or under-recovery of proportional costs cannot occur.

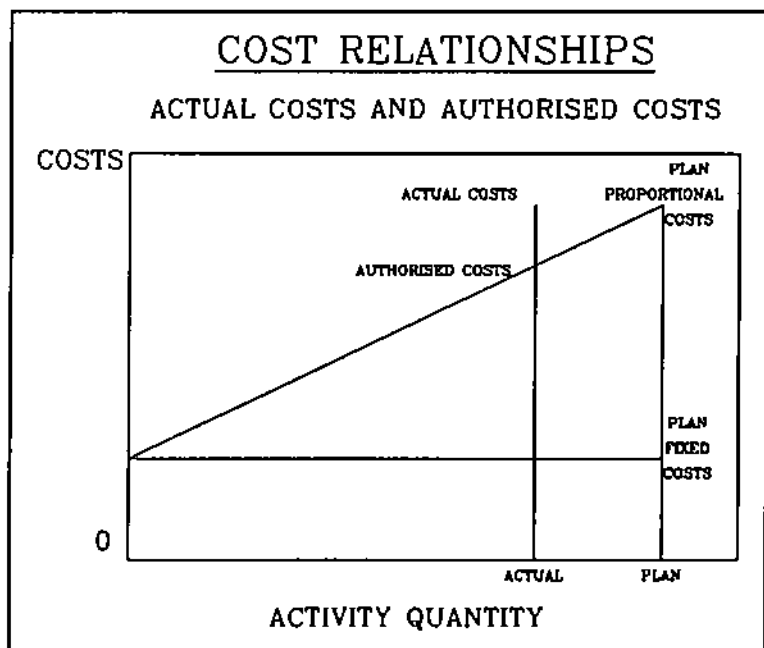
(Plaut seminar notes, 1991, p. 1.10-07).



- Actual costs and Authorised costs.

Figure 2.4 Figure 2.4

indicates the relationship between the actual costs incurred for a given level of activity and the authorised cost, i.e. the costs that should actually have



been incurred for the actual level of activity. Note that

in this instance the actual level of activity was lower than the planned level of activity. It could however also have been higher than the planned level, in which case the authorised costs would have followed the natural extension of the linear total cost curve. The variance, in the instance illustrated, would be the difference between the actual cost and the authorised cost for the actual activity level and not the difference between actual and original planned costs. In Figure 2.4 the actual costs are markedly higher than the authorised costs but only slightly above the original planned costs. This illustrates the use of flexible responsibility reporting. (Vikas, 1991, p.48).

5. The planning process in Plaut ABC.

The planning process is a very important step since it serves to direct focus towards the future. Standards that will apply for the rest of the planning period will also emanate from the planning process.

During the Analytical Cost Planning phase the planning techniques indicated in Figure 2.5 are used. Costs are classified by virtue of their magnitude into the A,B and C categories per planning object, i.e. per product or per cost centre. These classifications determine to what level of detail cost accounts will be treated during planning. Category A cost accounts are measured or calculated to ensure accurate planning and effective control. Category C cost accounts could be estimated due to

their insignificance.

Figure 2.5

Cost Account Category	Planning Technique		
	Calculate Measure	Estimate	Compare
A	X		
B	X	X	
C		X	X

- Note : - Category A cost accounts are the $\pm 5\%$ of accounts that account for $\pm 75\%$ of total costs.
- Category B cost accounts are the $\pm 15\%$ of accounts that account for $\pm 15\%$ of total costs.
- Category C cost accounts are the $\pm 80\%$ of accounts that account for $\pm 10\%$ of total costs.

From Vikas (1991, p.35-39).

The planning process will be discussed in more detail as each area of application of the Plaut ABC concept are expounded on further on in the report.

6. The areas of application of Plaut ABC.

The Plaut ABC concept concerns itself with the following five areas of application.

- Cost centre accounting.
- Product costing.
- Profit contribution margin management.

- Cost and profit simulation.
- Operating results analysis.

From Plaut seminar notes (1991, p. 1.40-01).

Figure 2.6 gives a schematic overview of the total area of application of the Plaut ABC concept. More specifically and with reference to the next three chapters, Figure 2.7 shows the areas of application, cost centre accounting, product costing and profit contribution margin management. Figure 2.8 shows cost and profit simulation and operating results analysis.

7. Conclusion.

From this chapter it should be clear that the Plaut ABC concept:

- Has been in existence long enough not to be considered a recent development as an approach to management accounting.
- Has sufficient subjacent theory developed.
- Are extensively backed up by the latest technology mainframe software.
- Has been implemented in manufacturing and service industries internationally.

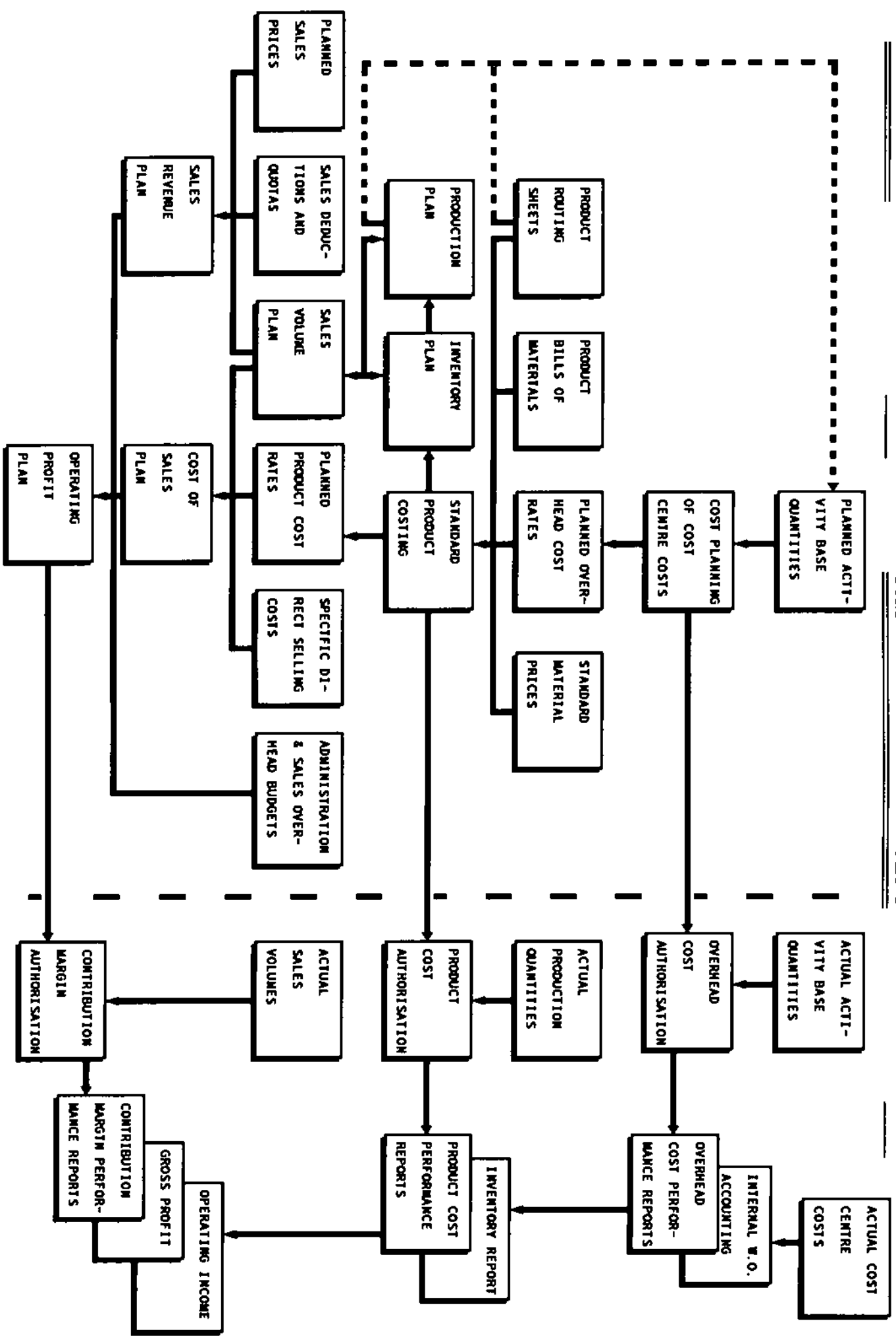
Finally, having laid the foundation for a discussion on the theory of Plaut ABC, Chapter 3 will begin the detailed theoretical discussion by an exposition of cost centre accounting.

FIGURE 2.6

PLANNING

THE PLAUF ABC CONCEPT

CONTROL



Chapter 3

1. Introduction.

In this chapter the prerequisites for cost centre accounting will first be discussed. This will be followed by some examples of activity base planning for different types of cost centres. The processing of actual information will be discussed in section 4. The chapter will be concluded with a discussion on cost control and variance analysis in cost centre accounting.

2. An overview of cost centre accounting.

Cost centre activity base planning as an output from cost centre accounting is a major input into product costing. Cost centre accounting is also important since a large component of total cost is normally incurred here. This is especially true of overhead costs which are within the activity based concept controlled and allocated via activity bases. By using the actual activity base quantities to obtain authorised budgets, control can be affected, this will be further illustrated below. Actual costs, which include some costs from internal works order accounting, are contained in the cost centre report together with the authorised budget to generate the overhead cost performance reports.

Secondly, from cost centre accounting, the information that will be used for strategic decisions such as the 'make-buy' decisions of services is obtained.

Figure 3.1 (Vikas, 1991, p.28) gives an overview of how cost centre accounting fits into the Plaut ABC concept. In order to effectively explain how cost centre accounting works, a small model consisting of a few cost centres will be systematically developed in this chapter. First however, a discussion on the prerequisites for cost centre accounting.

3. Prerequisites for cost centre accounting.

3.1. Introduction.

The following five concepts must be in place to effect the proper introduction of cost centre accounting:

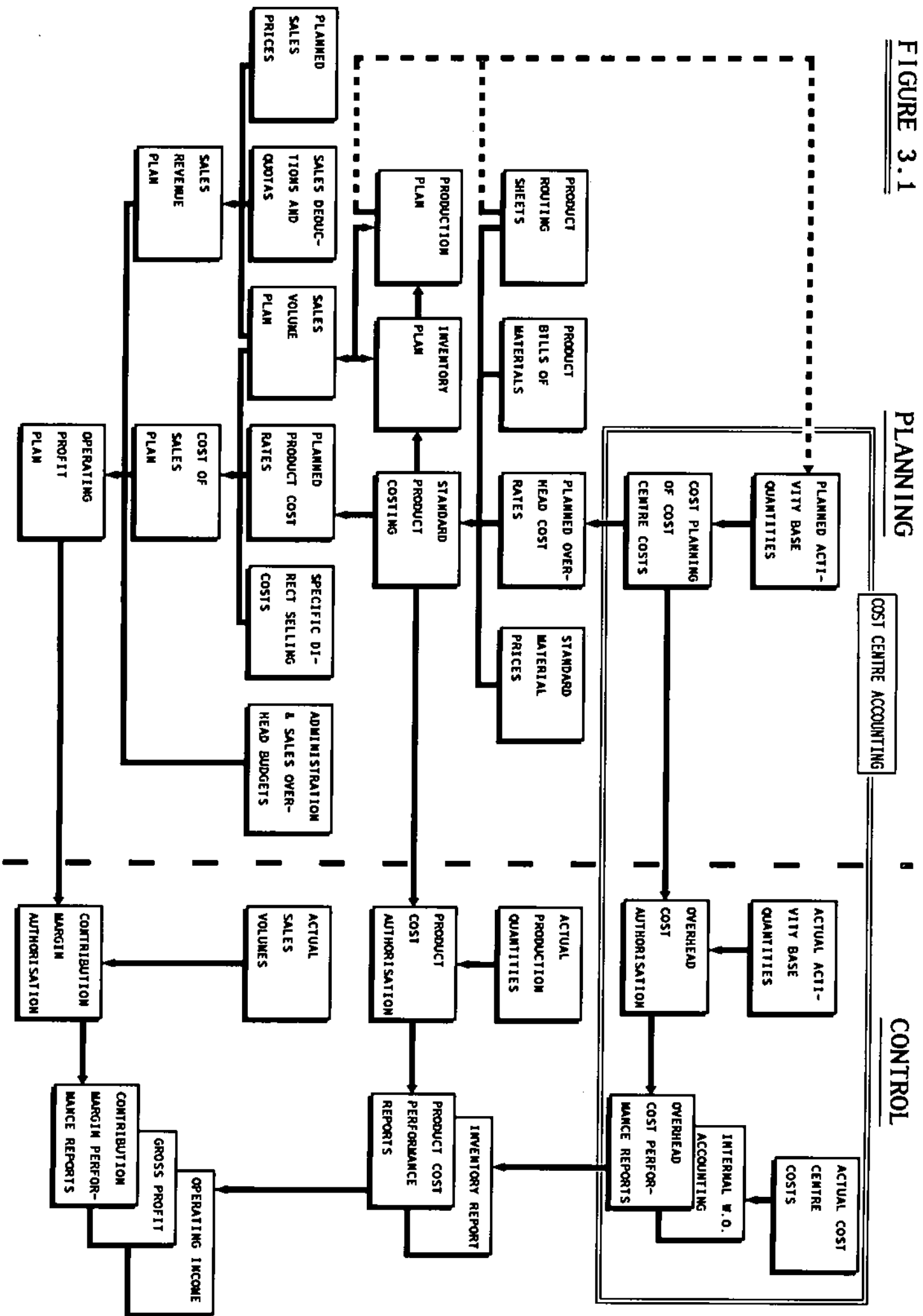
- A chart of cost accounts.
- A cost centre structure.
- An activity base structure.
- Internal works order accounting.
- A standard price system.

(Plaut seminar notes, 1991, p. 2.21-01).

As an essential part of an integrated real-time on-line system that runs on a mainframe, these are some of the characteristics that sets the Plaut ABC concept apart from some of the other options being promoted in the market today, namely that of a parallel system on Personal Computers.

Each of these concepts will now be discussed in more detail.

FIGURE 3.1



3.2. The chart of cost accounts.

The chart accounts, or specifically the chart of cost accounts divide costs into two major categories namely direct costs and indirect costs. This is illustrated in Figure 3.2.A. (Plaut seminar notes, 1991, p. 2.21-02).

- **Direct costs** are all those costs that can be directly assigned to a product, for example material and purchased semi-finished assemblies.
(Kilger, 1988, p. 19).

These direct product costs are budgeted for and controlled against **product budgets**, the latter being the responsibility of product managers. Direct product costs that are planned and controlled on the product budgets do not form part of a cost centre's budget. The only time that a direct product cost will be planned and controlled in a cost centre, is when such a direct product cost is also a cost driver in a cost centre. Labour cost for example, is a direct product cost, but it is almost always also a cost driver in a cost centre as well, in such an instance the labour cost will be planned and controlled on a cost centre. (Kilger, 1988, p.20 & 102).

- **Indirect costs** are costs that only end up on a product after it was incurred in a cost centre or on an internal works order. (Kilger, 1988, p. 19).

On a cost centre, to produce its activity or, on an internal works order when an event or an object's costs are separately accumulated and only then booked to the product. Budgeting and control of indirect costs on cost centres are by means of activity base budgets. The example of labour cost mentioned above will be expounded on to explain. Although labour is a direct cost to the product, it is treated as an indirect cost because it is a cost driver in a cost centre. It is here in the cost centre where overhead costs are coupled to the cost driver. The labour cost and related overheads are planned and controlled on the cost centres. Labour then serves as the activity for the cost centre (e.g. labour hours) and is booked to the product as such, the activity rate then includes the overheads.

Indirect costs are also budgeted for and controlled on internal works orders where applicable.

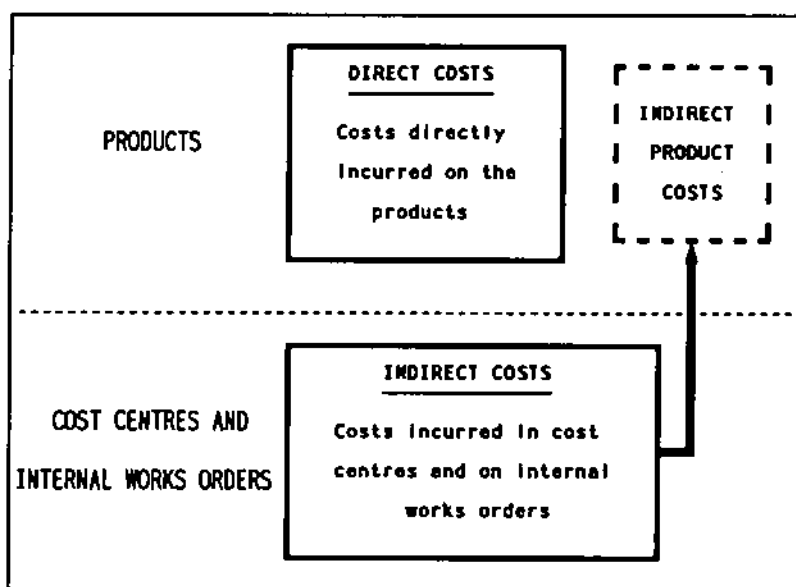
Figure 3.2.B (Plaut seminar notes, 1991, p. 2.21.02) illustrates a further distinction which is made between costs in the chart of accounts, namely that of primary and secondary costs.

- **A primary cost** is a cost that is incurred initially. (Kilger, 1988, p. 21).

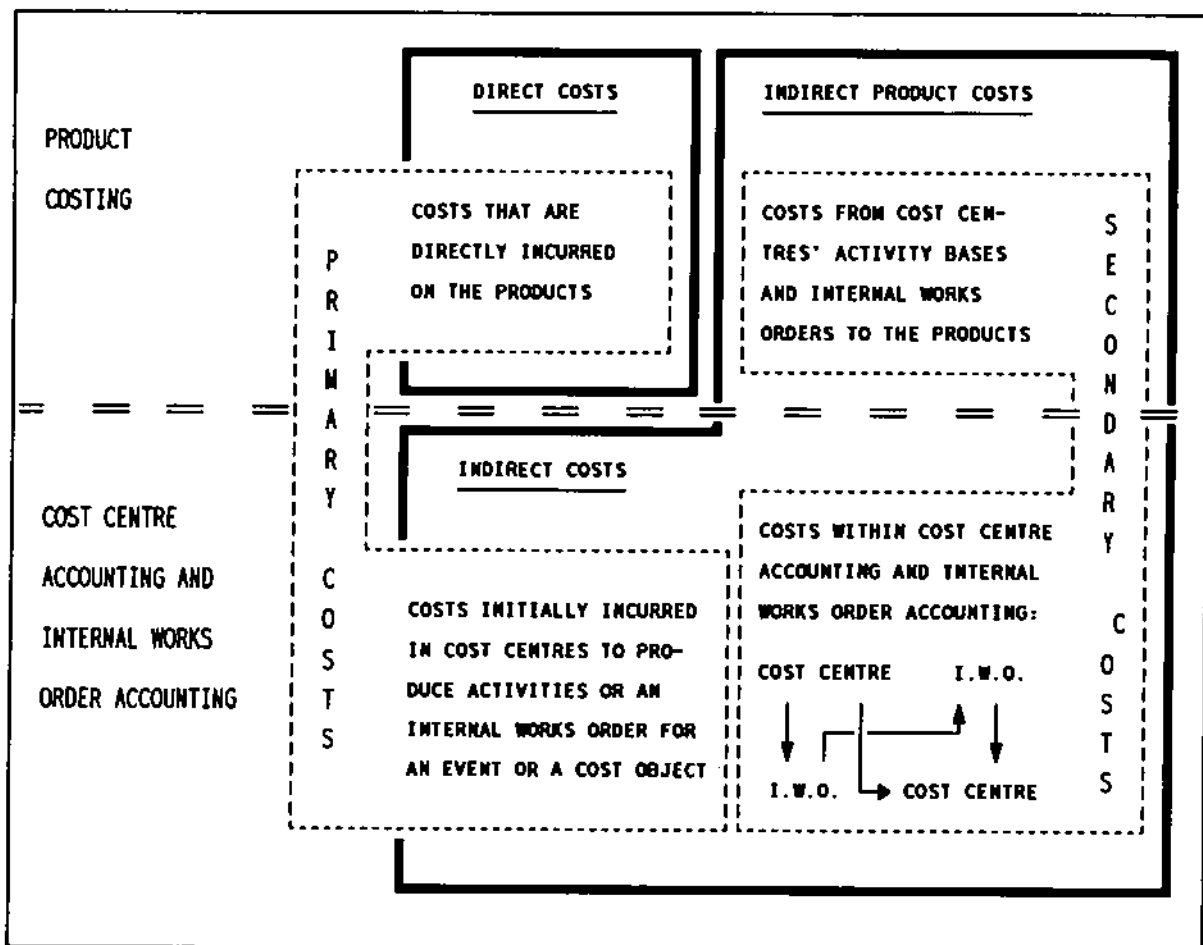
A primary cost is therefore a cost that is incurred

FIGURE 3.2

A. THE BASIC CHART OF ACCOUNT STRUCTURE



B. PRIMARY AND SECONDARY COSTS WITHIN THE BASIC CHART OF ACCOUNT STRUCTURE



in a cost centre, on an internal works order or product for the first time. This expense event triggers a flow of money out of the organisation. An example of a primary cost is the consumption of direct material by a product, or labour expense in a cost centre.

- A **secondary cost** is a cost incurred by a product, cost centre or internal works order from another cost centre or internal works order. (Kilger, 1988, p. 21).

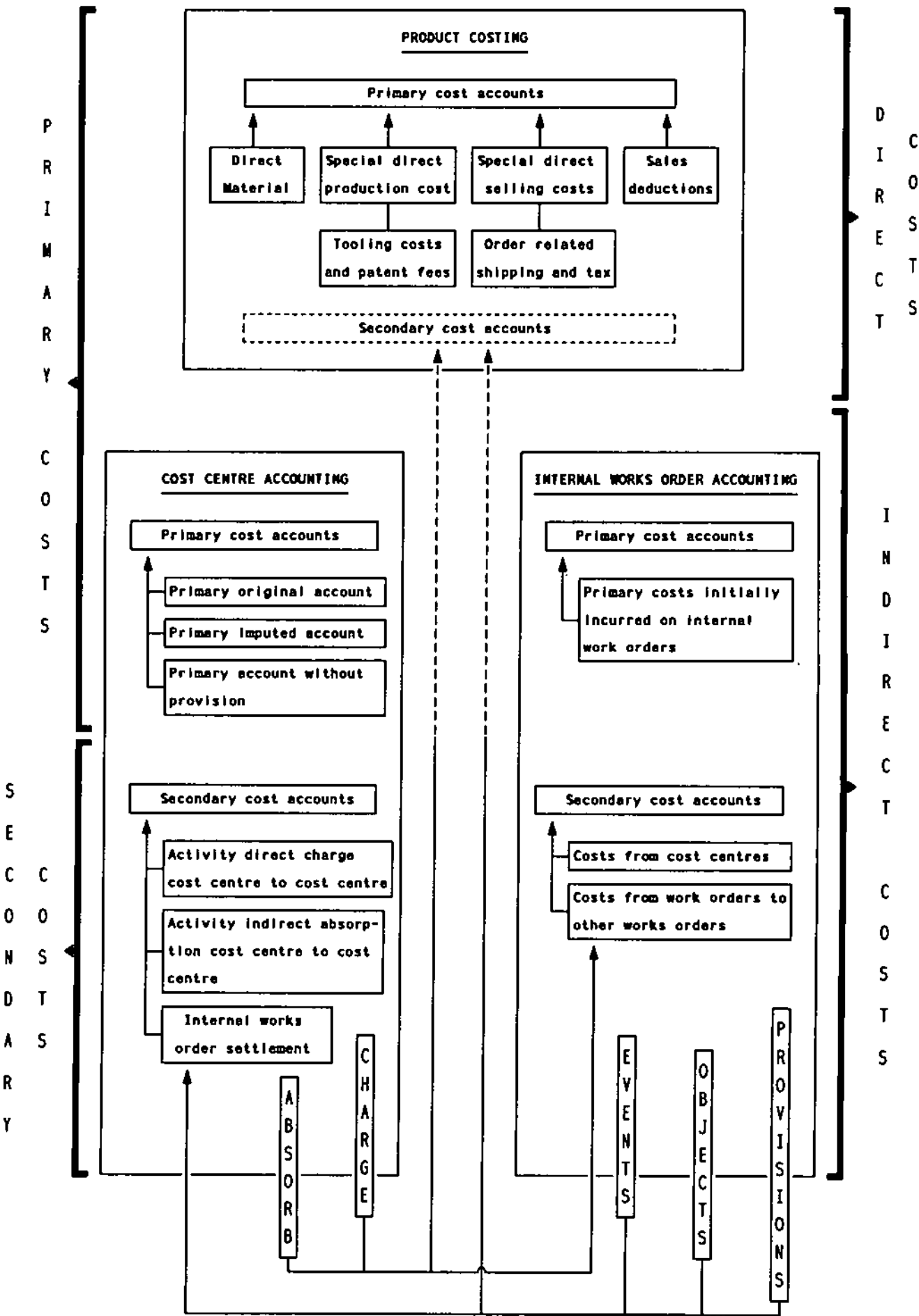
This therefore entails the flow of costs within an organisation. An example of this is the charging of activities from one cost centre to another for services rendered.

Figure 3.3 (Plaut seminar notes, 1991, p. 2.21-02) gives a detailed representation of the chart of accounts structure. As can be seen from the schematic representation, primary accounts are subdivided into three groups, viz:

- A **primary original account (without provision)** - such as clothing and material consumed in producing an activity.
- **Imputed (calculated) primary account** - used for social costs or for water and electricity costs when meters are not installed per cost centre. Costs are

FIGURE 3.3

DETAILS ON THE CHART OF ACCOUNT STRUCTURE



calculated to arrive at a value.

- **A primary original account (with provision) -**
Maintenance of equipment often requires a major strip down at intervals longer than a year. An example is when a large piece of equipment must be overhauled every five years. A provision is then built on an internal works order. The aim thereof is to ensure that the rate for a machine activity, for example, stays constant and does not show an inordinate increase in year five when the actual costs are incurred.

Secondary accounts can be subdivided into three groups, viz:

- **A secondary direct cost account -** this is used for costs incurred due to the direct consumption of another cost centre's activities.
- **A secondary indirect cost account -** is used for costs allocated to the receiver, examples thereof are, costs for supervision, management and support.
- **A secondary settlement cost account -** is used when costs are settled from an internal works order to a receiver such as a cost centre or product.

Please note that the following types of accounts mentioned

above are also used on products when the product budgets are done, as well as when actual costs are booked to the products.

- Primary original accounts (with or without provision).
- Secondary cost accounts.

The concepts introduced here will be further expounded on in the cost centre and activity sections directly below, as well as in the section on Analytical Cost Planning.

In the model to be developed, the following chart of accounts will be used.

Primary cost accounts:

Primary original accounts (without provision):

- 3001 Salaries - Management
- 3002 Salaries - Lower management
- 3003 Salaries - Clerical staff
- 3004 Salaries - Technical staff
- 3006 Salaries - Labourers
- 3019 Computer consumables
- 3030 Work clothing
- 3031 Stationery
- 3040 Miscellaneous material
- 3041 Indirect material
- 3105 Seminars and conferences
- 3109 Hotel accommodation
- 3111 Oils and lubricants

3271 Consulting fees

Primary imputed accounts:

4312 Imputed electricity

4313 Imputed depreciation

4314 Imputed interest

Primary original account (with provision):

4801 Imputed major maintenance

Secondary cost accounts:

Secondary direct cost accounts:

4201 Square meter - charge

4202 Labour hour - charge

4206 Labour hours maintenance - charge

Secondary indirect cost accounts:

4203 Fixed cost stepped recovery - charge

4204 Management - charge

4205 Support hour - charge

Secondary settlement cost accounts:

4301 Social costs-Management

4302 Social costs-Lower management

4303 Social costs-Clerical staff

4304 Social costs-Technical staff

4306 Social costs-Labourers

Note the number ranges for the different categories of cost accounts. The chart of account numbering must be set up in this way to enable the software to identify the different types of cost, to facilitate correct processing of information.

3.3. Criteria for cost centres and the cost centre structure.

A cost centre within the Plaut ABC concept must comply with the following criteria:

- It must have a homogeneous cost structure.
- It must have only one person responsible for it.
- It must not be geographically dispersed.
- It must contain only one technology per activity base.
- The capability of actual cost recording.

(Kilger, 1988, p. 20 - 36).

Cost centres are divided into two main categories, as illustrated in Figure 3.4. (Plaut seminar notes, 1991, p. 2.21-04). These are again subdivided into direct and indirect cost centres, viz:

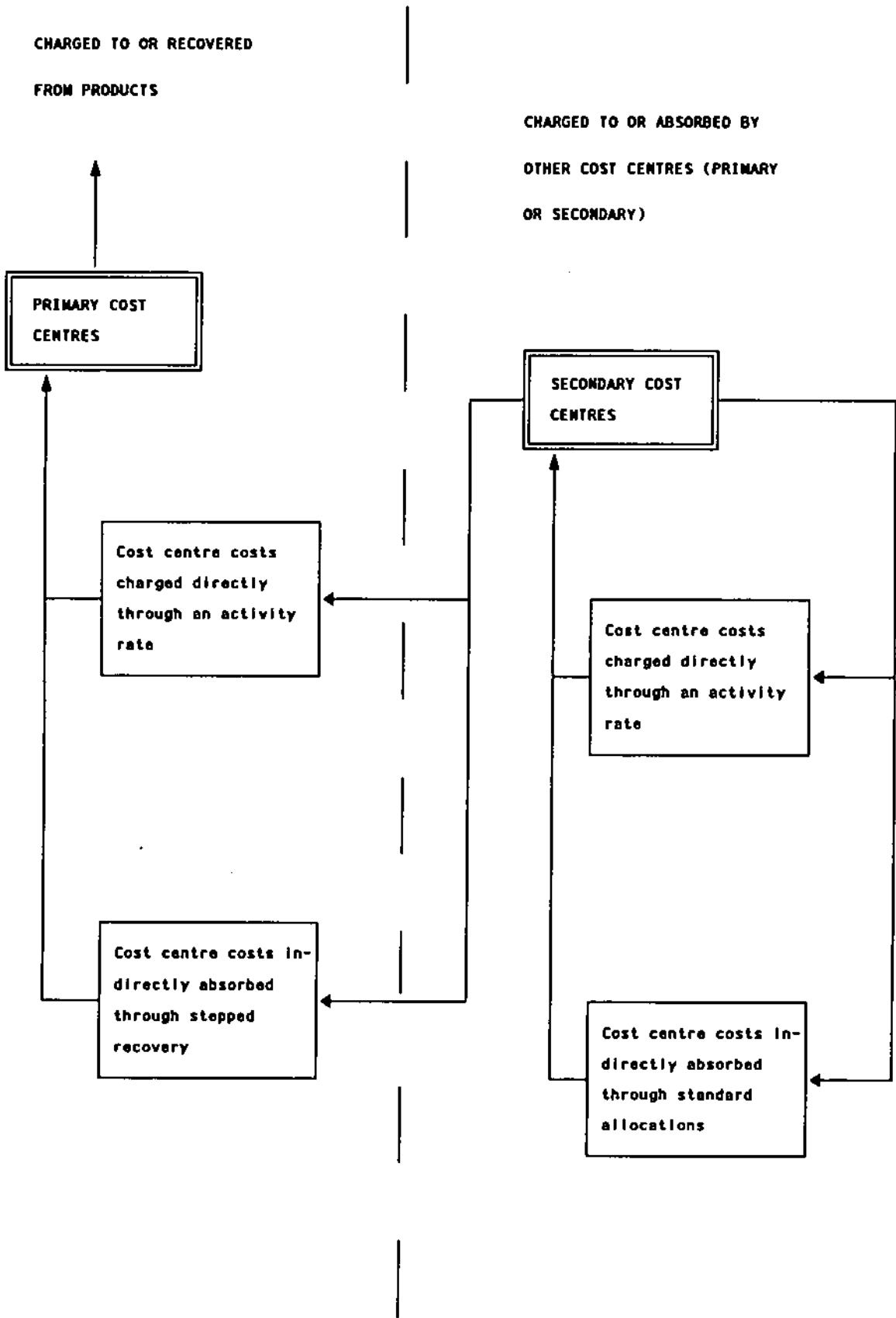
- A primary cost centre is a cost centre of which the costs are recovered from products - directly or indirectly.
 - A primary direct cost centre is a cost centre that performs its activity directly on a product.

Costs are charged directly from this cost centre to the product at the standard rate for the primary direct cost centre's activity.

- A primary indirect cost centre is a cost centre

FIGURE 3.4

COST CENTRE STRUCTURE



of which the costs are absorbed indirectly by products or recovered indirectly from contribution margins.

The indirect absorption by products are achieved by means of standard allocation to the product, e.g. for R & D costs.

The indirect recovery of a primary indirect cost centre's activity base costs, through stepped recovery, is achieved as follows: A regional sales executive's costs are, for example, deducted from the total regional contribution margin to recover the costs. This cost centre is also sometimes called a 'fixed cost stepped recovery cost centre'.¹

(Kilger, 1988, p.328 ff. & 478 ff.).

- A **secondary cost centre** is a cost centre of which the activity is charged or allocated to other cost centres.
- A **secondary direct cost centre** charges the consumption of its activity, consumed by other cost centres, directly via a rate per activity unit.

¹ This principle will be explained in detail in Chapter 5 where Contribution margin Management will be discussed.

- A secondary indirect cost centre's costs are allocated to other cost centres that utilise its services. These standard allocations are arrived at during the Analytical Cost Planning phase, at which time a detailed analysis is made of secondary indirect activities and the consumers of these activities.

(Kilger, 1988, p. 340 ff. & 426 ff.).

The costs from cost centres and internal works orders referred to in Figure 3.2.A, are treated as indirect costs. Indirect costs are charged or allocated to products, cost centres and internal works orders using secondary cost accounts. Also see Figure 3.3 in this regard.

3.4. Criteria for an activity base and the activity base structure.

The criteria for cost centre activity bases are the following:

- A linear relationship must exist with the proportional cost of the cost centre.
- It must be a linear relationship to the units produced.
- The activity must be able to be recorded.

(Kilger, 1988, p. 324 ff.).

Activities can be divided into two main categories, these

correspond to the categories of cost centres mentioned above. The two main categories are again subdivided into direct and indirect activities. Refer Figure 3.5. (Plaut seminar notes, 1991, p. 2.21-06).

- **Primary activity bases** are performed by primary cost centres for products.

- **Primary direct activity bases** are used to charge the costs of a cost centre to a product directly with a rate, a surcharge or a quota.

- **Primary indirect activity bases** are used to allocate the costs from a cost centre by means of standard allocations, percentages or amounts to products or contribution margins.

(Kilger, 1988, p. 327 & 373 ff.).

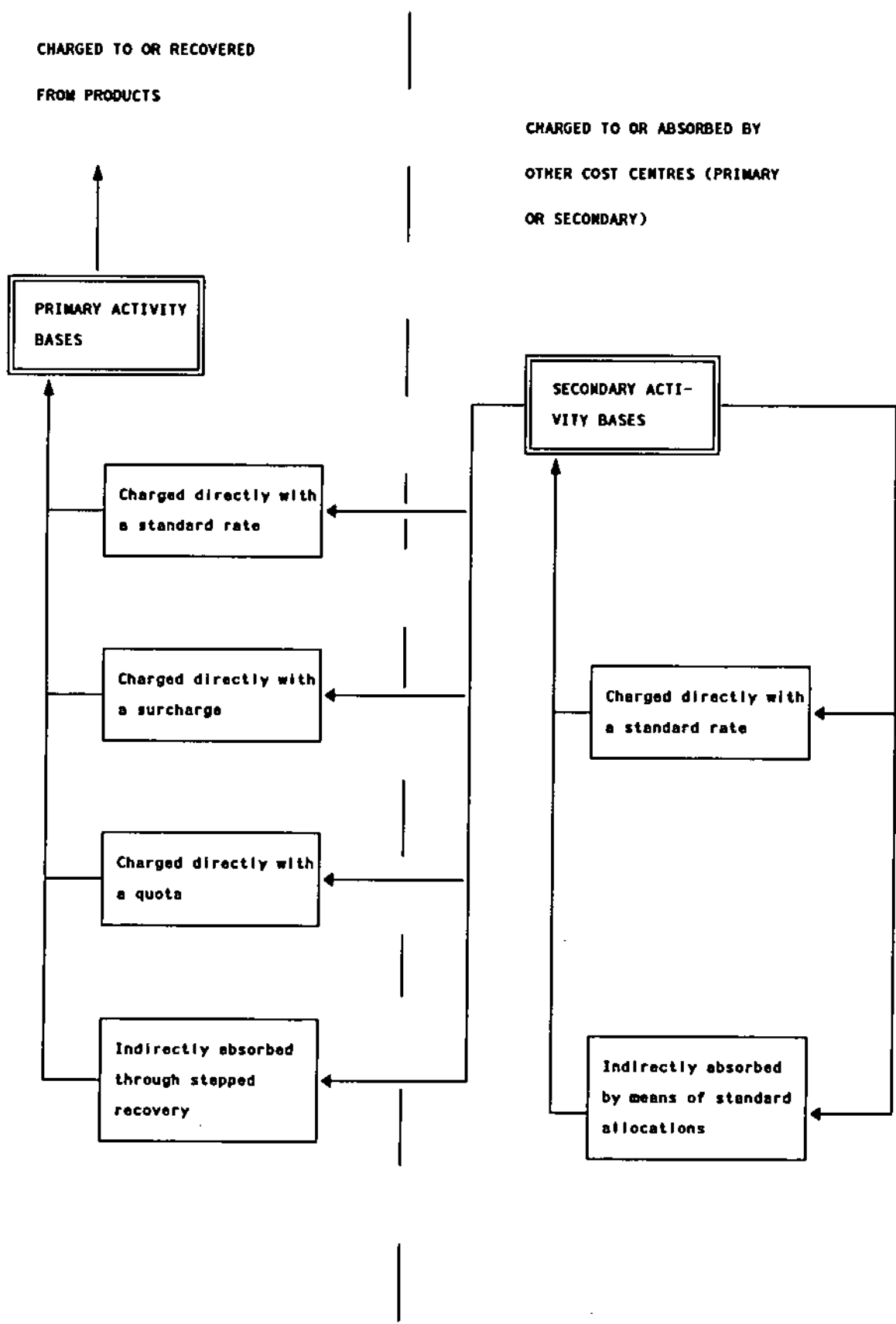
- **Secondary activity bases** are performed by secondary cost centres on behalf of other primary and secondary cost centres.

- **Secondary direct activity bases** are used to charge the costs from a cost centre directly to the receiver (a cost centre or works order) using a standard cost rate.

- **Secondary indirect activity bases** are used to absorb a cost centre's costs indirectly by means of predetermined standard activity

FIGURE 3.5

ACTIVITY BASE STRUCTURE



quantity allocations to receivers (cost centres or internal works orders). These secondary indirect activities are commonly known as 'non-measurables' in that no recording of actual activities occurs and is in fact not practical.

(Kilger, 1988, p. 327 & 373 ff.).

In the model to be developed below, these activity types will be further illustrated by means of examples.

3.5. Internal works order accounting.

Internal works order accounting is used for three purposes.

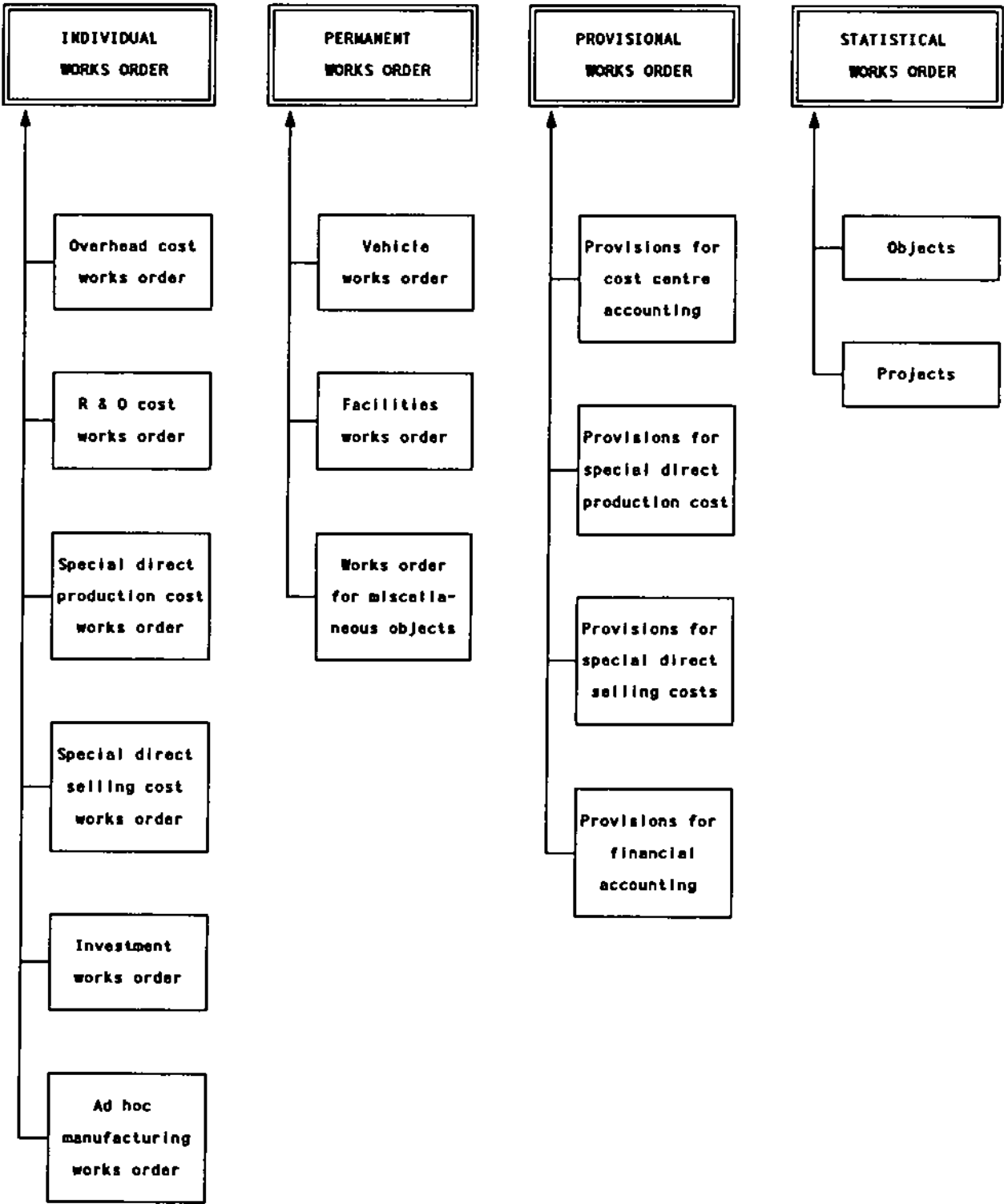
- **Event-related cost accumulation.** These include events such as the installation of an asset, the painting of a building, or the R & D costs of a new product.
- **Provisional cost absorption accounting.** These are provisions that have the purpose of smoothing cost centres' rates and product costs over a few years.
- **Object-related cost accumulation.**

Four categories of works orders are used, which are schematically illustrated in Figure 3.6 (Plaut seminar notes, 1991, p.2.21-08):

- **Individual works orders.** These orders are event-

FIGURE 3.6

INTERNAL WORKS ORDER STRUCTURE



related and are closed after the event has passed and is not used again. Examples of individual work orders are illustrated in Figure 3.6 below.

- **Permanent works orders** which are available indefinitely to accumulate costs, usually for a type of event that occurs repeatedly or for a cost object. An example of this is the routine maintenance and repair of vehicles and equipment.
- **Works orders for provisions.** An example of this is the provision for the major overhauling of machinery.
- **Statistical works orders** are used to accumulate costs for information purposes only. When the expense is incurred, the debit entry is double booked to a statistical works order and the costs are not processed again afterwards.

(Kilger, 1988, p. 653 ff.).

3.6. Standard price system.

The purpose of the standard price system is to facilitate effective control in the organisation. Only if standard prices are used, price, volume and mix variances can be isolated.

Figure 3.7 (Plaut seminar notes, 1991, p. 2.22-08) gives a graphic representation of the costs for which standard prices are utilised and also the type of standard prices used. Note that direct material is the materials that will be planned and controlled on the products while indirect materials are the materials that will be planned and controlled on cost centres. The latter will be consumed in the production of cost centre activities. The standard prices for material and attendance pay is self-evident.

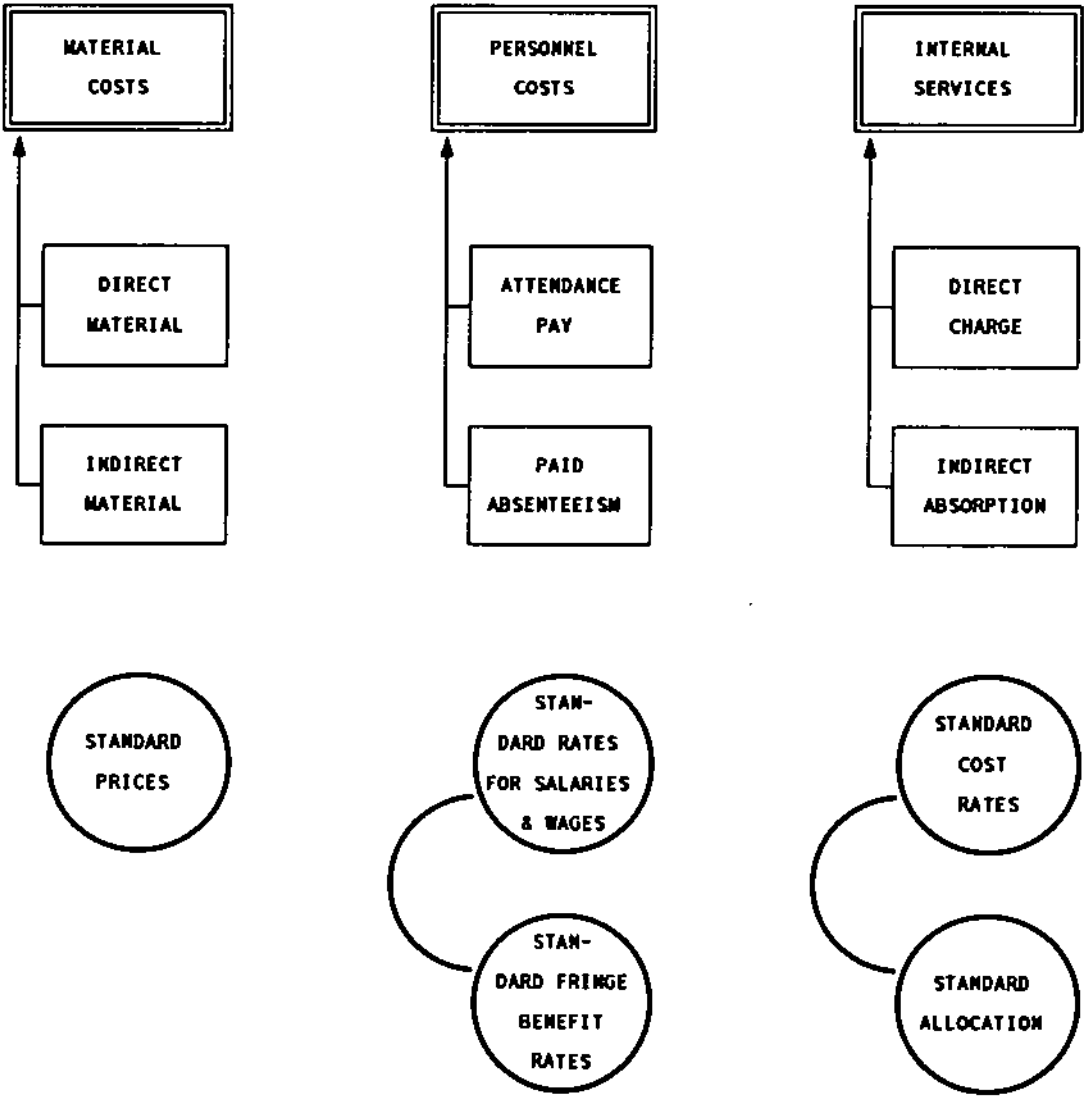
Social costs (medical, pension, housing, etc.) and paid absenteeism are treated as follows:

The total planned expense for social costs and paid absenteeism for the planning period is calculated as a percentage of planned salaries. When actual salary costs are incurred on the cost centre, social costs are booked to the cost centre as the same percentage (the planned %) of actual salaries. The actual social costs are not booked to the cost centre but to an internal works order for social costs. The standard used for social costs and paid absenteeism is therefore a standard percentage of actual salaries.

Direct activities are charged out to cost centres and products at standard rates. Indirect activities are allocated or recovered from products or contribution margins via standard allocations. These standard rates and standard allocations are products of the analytical cost

FIGURE 3.7

STANDARD PRICES



planning phase.

Standard pricing does not only apply to cost centre accounting, the other area of application, namely product costing, will be discussed in the next chapter.

(Kilger, 1988, p. 207 f. & 212 ff.).

3.7. Conclusion to the prerequisites for cost centre accounting.

The above prerequisites are defined in detail during an initial phase of implementation called 'Conceptualisation'. Once in place, these prerequisites need only be maintained, whereas the Analytical Planning process should ideally be repeated every three to four years. The reasons for this will become evident below.

4. Analytical cost planning of cost centres.

4.1. Introduction.

Analytical cost planning (ACP) is a major contributory factor to the Plaut ABC concept's aim in directing an organisation's focus towards the future. ACP is also intended to be a zero-based approach to planning, especially during the first implementation of the Plaut ABC concept. This is especially true in that the success of the system depends on a zero-based approach to determine the standard cost rates for activities that will be charged

directly, as well as the standard allocations to be arrived at for the secondary indirect activities. The latter being of critical importance for overhead cost control and reduction. (Kilger, 1988, p. 358 ff.).

In Figure 3.8 the cost centre model that will be developed in this section is illustrated. The caption indicates the organisational structure, the cost centre numbers, and name of the cost centre that will be used. For the purpose of illustrating principles of cost centre accounting, the production environment will be concentrated on. The marketing section is included to facilitate a link with contribution margin management (Chapter 5) where the absorption of these and the CEO's costs will be illustrated.

The model represents a section of a durable goods manufacturer, that uses a combination of new technology and labour-intensive technology. The company manufactures a variety of end products from sheet metal, such as steel cabinets, tool trolleys with wheels, tool boxes, drip trays (as a ploy to utilise cut-off sheet metal pieces), kitchen cabinets (aimed at lower income groups) and some products sold as semi-finished products. These include the sheet metal cages for a well known manufacturer of fridges, deep freezers and ovens.

Figure 3.9 is again a representation of the model, but here

FIGURE 3.8

COST CENTRE MODEL TO BE DEVELOPED

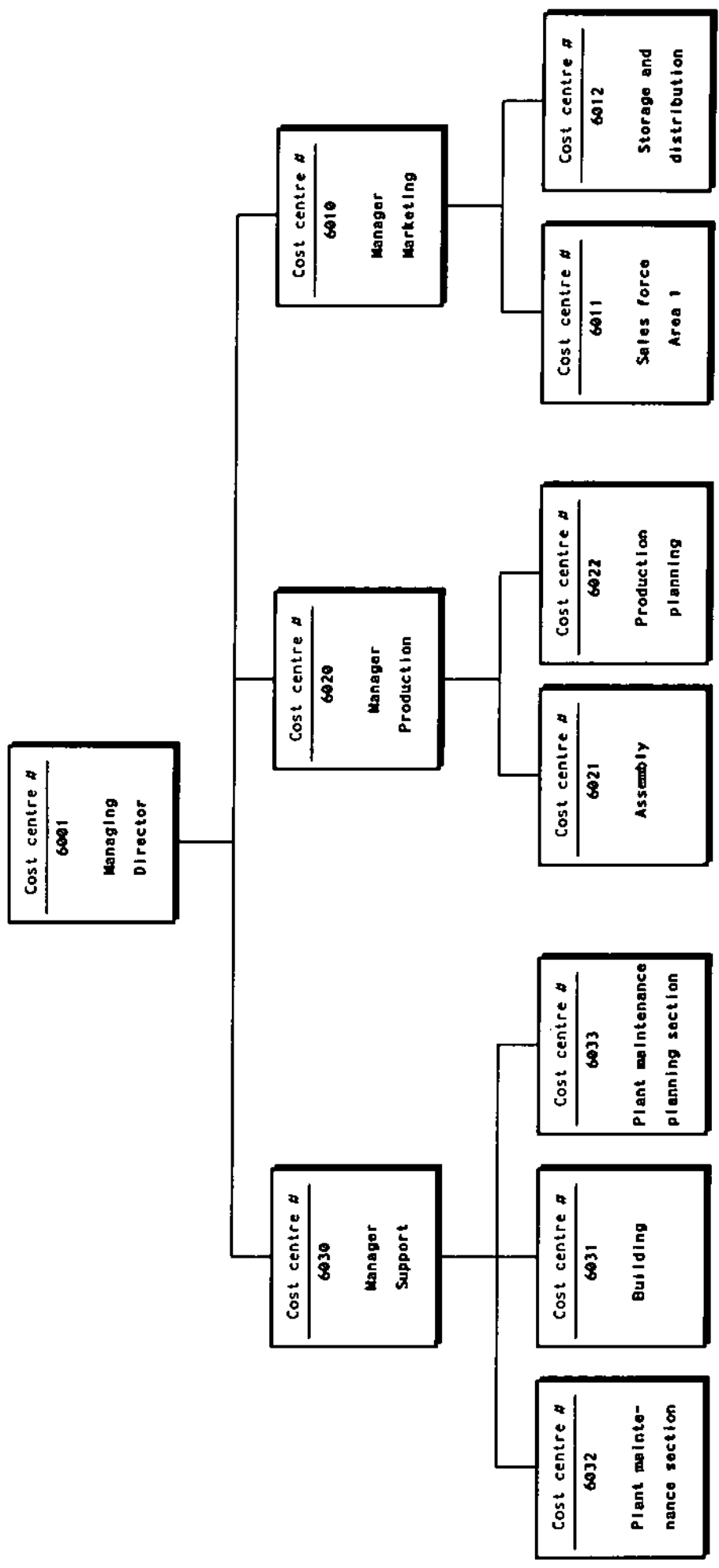
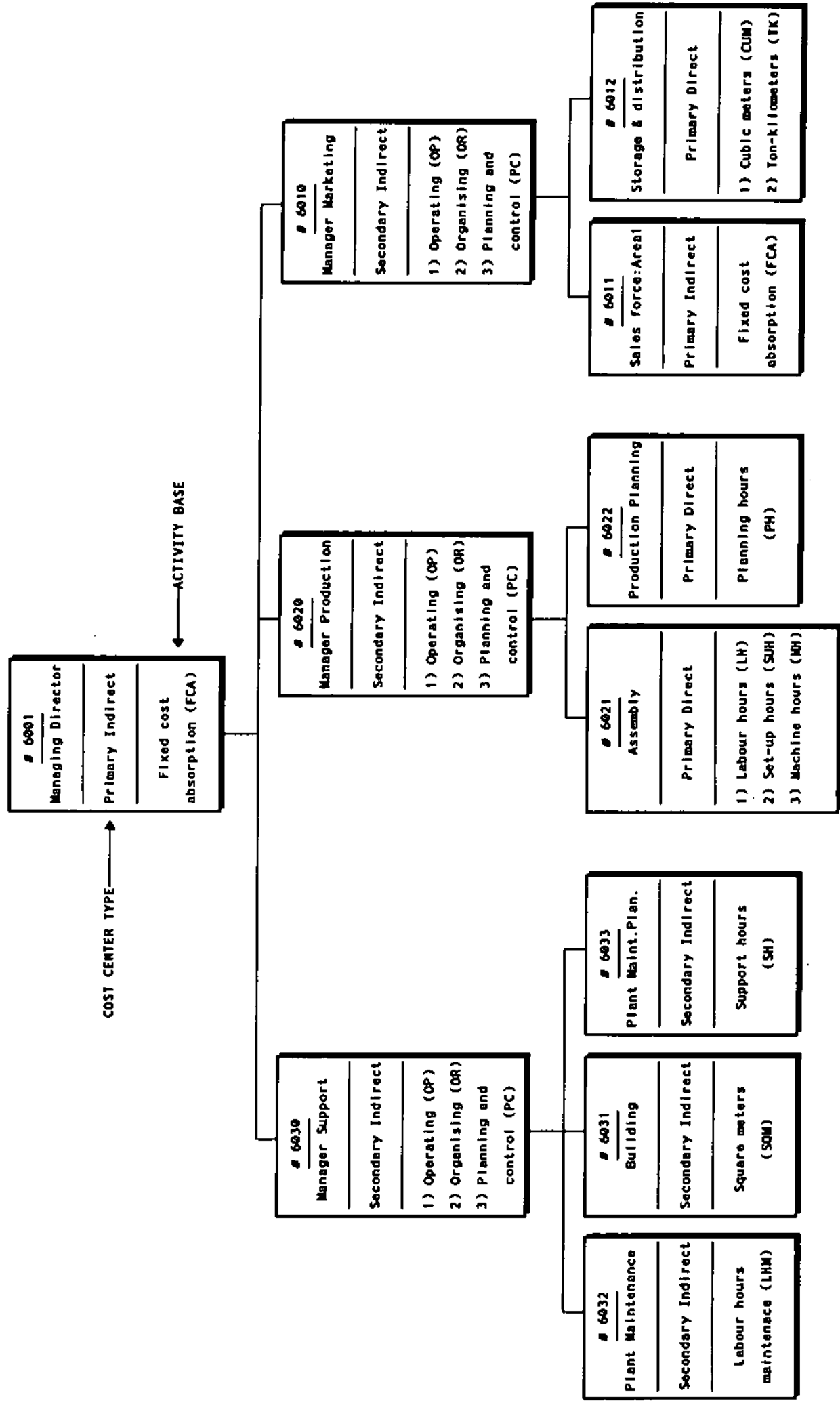


FIGURE 3.9

THE COST CENTRE MODEL INDICATING COST CENTRE TYPES AND ACTIVITIES



the types of cost centres and their proposed activities with abbreviations in brackets are indicated. The activities are normally arrived at during the conceptual phase of implementing the Plaut ABC concept. Changing the activities during the ACP phase, however, is not inconceivable, since a more detailed analysis of each cost centre is done at this time.

4.2. Planning a Primary Indirect (Fixed Cost) Cost Centre - # 6001.

Figure 3.10 is the budget for the Managing Director of the company. Note that all the costs are fixed. This implies that for the activity of a fixed cost cost centre, there is no proportionality inherent in its costs in relation to output. The costs of these cost centres are considered to be inappropriate for direct allocation to other cost centres or to products. The costs can however be recovered in a stepped recovery calculation as will be discussed in Chapter 5. These cost centres are given an FCA (Fixed cost absorption) activity with a quantity of 120 (10 units x 12 months) to ease allocation.

The principle of a standard charge social cost for labour can be highlighted here. As can be seen from Figure 3.10, during ACP, social costs are planned on an internal works order, normally per personnel category. The example here is for all clerical personnel - with the same social cost structure. Personnel groups such as management and

FIGURE 3.10

BUDGET FOR A PRIMARY INDIRECT (FIXED COST) COST CENTRE - # 6001

COST CENTRE NUMBER: 6001		COST CENTRE : MANAGING DIRECTOR ACTIVITY BASE : FIXED COST ABSORPTION (FCA)	
ACCOUNT NUMBER	ACCOUNT DESCRIPTION	PLANNED FIXED AMOUNT	PLANNED PROPORTIONAL AMOUNT
3001	Salaries - Management	100 000	-
3003	Salaries - Clerical staff	24 000	-
4301	Imputed social cost - Management	40 000	-
4303	Imputed social cost - Clerical staff	9 600	-
3019	Computer consumables	2 000	-
3031	Stationery	1 000	-
3105	Seminars and conferences	5 000	-
3109	Hotel accommodation	3 500	-
3271	Consulting fees	7 000	-
Totals :		192 000	0
Total cost : R 192 000			
Planned activity base quantity : 120		Fixed rate	Proportional rate
Activity base rate : 192 000/120 = R 16000		R 16 000	R 0

For
example
40%

CLERICAL STAFF SOCIAL WORKS ORDER

Planned social
costs: xxxxxx

As a percentage
of total planned
clerical salaries

labourers will have separate social cost works orders with their own percentages. The planned social costs are entered on the social cost works order and a total is arrived at. This total is calculated as a percentage of total salaries for the personnel group being planned, assume the percentage arrived at to be 40 %. In cost centre # 6001 the clerical salaries are R24 000 and social costs R 9 600, i.e. 40 %. After the booking of actual salaries to a cost centre, standard social costs are calculated as 40 % of actual salaries and debited to the cost centre, while the actual expense on social costs are debited to the social works order (Refer section 5.4. below). Note also that social costs are listed against a 43XX secondary settlement account.

Social costs are treated in this way in all cost centres regardless of the cost centre type. The reasons for treating social costs in this manner are the following:

- An unusual fluctuation in social costs will not cause fluctuations in the cost centre's actual rate i.e. actual costs divided by actual activity quantity. Not all social costs are incurred periodically (i.e monthly), for example the annual bonus/13th cheque, this fluctuation is thus isolated.
- Variances that the cost centre head cannot be held accountable for are isolated, thus improving control in the cost centre. The uncontrollable

social cost variances are isolated on the social works order.

- It is an easy way of bringing into account an otherwise tedious calculation to ensure the accuracy of planned cost centre rates.

(Kilger, 1988, p. 328 ff., 377 ff. & 543 ff.).

The price per activity unit for this cost centre is R 1 600,83. (R 192 100 divided by 120). The primary indirect cost centres discussed in this section is one of the methods used in the Plaut ABC concept to bring overhead costs into calculation. This approach recognises that certain overhead costs are difficult or impossible to allocate directly to products.

4.3. Planning a Manager as a Secondary Indirect (Non-measurable) - Cost centre # 6020.

A second method used to allocate overheads is that of secondary indirect cost centres (non-measurables). The example here is cost centre # 6020 the Manager Production in the model. Non-measurables are so called because the activities that these cost centres perform cannot be or are simply not measured and recorded in practice, such as the activities of a manager. Non-measurables differ from primary indirect cost centres in that there exists an identifiable relationship between this overhead cost centre and the cost centre that it performs its activity for.

The ACP process plays a vital role in this regard, in that the activities of secondary indirect cost centres must be determined, analysed, planned and standard allocations must be agreed upon with those cost centres that consume these secondary indirect (non-measurable) activities. The analysis involves not only determining the costs of each activity and its standard allocations but also the relationships between the non-measurable activity and the activities of the cost centres that will consume it, since during the calculation of the authorised budget for the non-measurable activity the budget of the latter is flexed on the grounds of the actual activity level of the receiver cost centre, i.e. inverted flexing.

The Manager Production will have the following activities: Planning and control, organising and operating. The budgets for each of these activities are illustrated in Figure 3.11 below. Note that cost accounts are defined into their fixed and proportional components per activity base during the ACP phase. This facilitates the flexing of the budget to obtain the authorised budget, as well as forming the basis for full and proportional (marginal) cost rates.

The largest cost component, obviously being salaries, is split according to the time that this particular manager plans to spend, performing each of his activities. The important result from the ACP for non-measurable activities

FIGURE 3.11

BUDGET FOR A SECONDARY INDIRECT (NON-MEASURABLE) COST CENTRE - # 6020

COST CENTRE NUMBER: 6020		COST CENTRE : MANAGER PRODUCTION ACTIVITY BASE : ORGANISING (OR)	
ACCOUNT NUMBER	ACCOUNT DESCRIPTION	PLANNED FIXED AMOUNT	PLANNED PROPORTIONAL AMOUNT
3001	Salaries - Management	10 000	-
4301	Imputed social cost - Management	4 000	-
3031	Stationery	-	50
Totals :		14 000	50
Total cost : R 14 050			
Planned activity base quantity : 25 days		Fixed rate	Proportional rate
Activity base rate : $14\ 050/25 = R\ 562$		R 560	R2
		ACTIVITY BASE : OPERATING (OP)	
ACCOUNT NUMBER	ACCOUNT DESCRIPTION	PLANNED FIXED AMOUNT	PLANNED PROPORTIONAL AMOUNT
3001	Salaries - Management	50 000	-
4301	Imputed social cost - Management	20 000	-
3031	Stationery	-	100
3105	Seminars and conferences	2 000	1 000
Totals :		72 000	1 100
Total cost : R 73 100			
Planned activity base quantity : 125 days		Fixed rate	Proportional rate
Activity base rate : $73\ 100/125 = R\ 584.80$		R 576	R8.80
		ACTIVITY BASE : PLANNING AND CONTROL (PC)	
ACCOUNT NUMBER	ACCOUNT DESCRIPTION	PLANNED FIXED AMOUNT	PLANNED PROPORTIONAL AMOUNT
3001	Salaries - Management	20 000	-
4301	Imputed social cost - Management	8 000	-
3031	Stationery	-	500
Totals :		28 000	500
Total cost : R 28 500			
Planned activity base quantity : 50 days		Fixed rate	Proportional rate
Activity base rate : $28\ 500/50 = R\ 570$		R 560	R10

is however:

- Which cost centres are the non-measurable activities performed for.
- How much of each non-measurable activity should be allocated to these receiver cost centres.

The ACP process, through mutual agreement between sender cost centres and receiver cost centres, establishes the standard allocations of non-measurable activities. Once all the parties agree to this, the receiver cost centres budget the activity bases of the manager in their cost centres as secondary costs (i.e. costs from one cost centre to another). This will be illustrated below in sections 4.4 and 4.5 where the cost centres, for which one of managers in the model is responsible, will be budgeted.

It is possible that during ACP certain activities of the manager are identified as unsuitable for standard allocation, due to the fact that the allocation is too arbitrary. For example the activity 'Operating', i.e. attending meetings, interfacing with outside parties, etc. is a good example. Such an activity can then be treated as a fixed cost absorption activity, similar to the primary indirect cost centre of the Managing Director that was planned above. Instead of being allocated, this activity will then also be accounted for via stepped recovery.

(Kilger, 1988, p. 340 ff. & 543 ff.).

4.4. Planning a Secondary Direct Cost Centre - # 6032.

The cost centre, from the model, that will be planned in this section is cost centre # 6032, refer Figure 3.8 above. This is a plant maintenance cost centre, comprising 10 artisans who do scheduled maintenance and repair work on equipment and machinery. The budget for this cost centre is shown in Figure 3.12. Note that the material for the repair of the machines will be budgeted against each machine hour activity of the cost centre operating the asset. Material here is only those not directly traceable to machines and that material used in producing the labour hours maintenance activity base of cost centre # 6032.

As can be seen from Figure 3.12 the budget for this cost centre is split into a primary budget and a secondary budget. Although the secondary budget is only introduced at this stage, all cost centres incur secondary costs, so strictly speaking, the two budgets above are incorrect. But for the sake of simplifying the explanation on cost centre accounting, the introduction of secondary costs is delayed until now.

The primary budget is similar to those discussed above. The secondary budget is all the secondary indirect cost allocations and direct activity charges from secondary cost centres. The secondary indirect costs are for that portion of cost centre 6032's manager, i.e. cost centre # 6030, and the Plant maintenance planning cost centre # 6033. For the

FIGURE 3.12

BUDGET FOR A SECONDARY DIRECT COST CENTRE - # 6032

COST CENTRE NUMBER:		COST CENTRE : PLANT MAINTENANCE SECTION				
6032		ACTIVITY BASE : LABOUR HOURS MAINTENANCE (LHM)				
PRIMARY COSTS						
ACCOUNT NUMBER	ACCOUNT DESCRIPTION	PLANNED FIXED AMOUNT	PLANNED PROPOR- TIONAL AMOUNT			
3002	Salaries - Lower Management	50 000	-			
3004	Salaries(Productive) Technical staff	-	360 000			
3005	Salaries(Unproductive) Tech. staff	40 000	-			
4302	Imputed social cost - Low.Management	20 000	-			
4304	Imputed social cost - Tech. staff	120 000	-			
3030	Clothing	1 000	2 000			
3040	Miscellaneous Material	-	1 000			
3041	Indirect Material	-	3 000			
Primary cost totals :		231 000	366 000			
SECONDARY COSTS						
ACCOUNT NUMBER	COST CENTRE	ACTI- VITY	ACTIVITY QUANTITY	STANDARD RATE	PLANNED FIXED AMOUNT	PLANNED PROPOR- TIONAL AMOUNT
4201	6031	SQM	50	R 30	1 500	-
4204	6030	OR	5	R 560	2 800	-
4204	6030	OP	50	R 580	29 000	-
4204	6030	PC	15	R 540	8 100	-
4205	6033	SH	3 500	R 70.89	161 100	87 000
Secondary cost totals :					202 500	87 000
Total cost : R 886 500						
Planned activity base quantity : 15 000 hrs					Fixed rate	Proportional rate
Activity base rate : 886 500/15 000 = R 59.10					R 28.90	R 30.20

purpose of the model a Building cost centre is created that charges its costs directly via a square metre rate. Secondary costs are planned in activity base quantities. The values of secondary costs, in the receiver cost centre, are calculated by the software, by taking the planned quantity times the sender cost centre rate. The receiver cost centre is controlled, on secondary costs, by activity quantities, i.e the variance between authorised quantity and actual quantity consumed.

Another consideration with regard to secondary costs is that of fixed and proportional components. Each activity rate is split into its fixed and proportional components. Let us assume that the Manager support has for his activity 'Organising' a fixed rate of R 540 and a proportional rate of R 20. During the ACP cost centre # 6032 plans the quantities of the manager's activities that it will consume, it also has to state to what extent the manager's costs are fixed for itself, i.e. the receiver. In this example the manager is considered a 100 % fixed cost. Hence the R2 800 in the fixed cost column in Figure 3.12. When actual cost is charged out from the manager (# 6030) to the receiver cost centre (# 6032) the rate of the manager's activity 'Organising', will be charged as R560 fixed, and not as R540 fixed and R20 proportional.

On the other hand, the Plant maintenance planning cost centre had a rate of R46,03 fixed and R24,86 proportional,

see section 5.5 below. If, however, it is defined in the receiver (# 6032) as 100 % proportional, the fixed amount that the receiver gets cannot be made proportional. Hence the R161 100 fixed and R87 000 proportional in cost centre # 6032's budget (Figure 3.12), even though the costs from # 6033 is considered to be a 100 % proportional. The actual costs charged out, will be booked as R46,03 fixed and R24,86 proportional. The above two examples serve to illustrate that costs being charged out, directly or indirectly, can only become more fixed and not more proportional.

Finally, in the example above of the Plant maintenance planning cost centre and the Plant maintenance cost centre, it is sometimes debatable whether the latter should receive the fixed cost charge out, even if its activity of labour hours maintenance drops to zero. In practice it does happen that receiver cost centres are sometimes unwilling to carry the fixed costs of a sender cost centre. For example, a new cost centre is required to 'pay' for the Information systems department's activity which the new cost centre is only using for the sake of convenience. In this case the mainframe hardware was acquired for other main users and fixed costs, that cannot be agreed upon to be charged out, can then again be treated as a fixed cost that is recovered during stepped recovery. Proportional costs are always recovered from the receiver of the activity.

(Kilger, 1988, p. 340 ff. & 373 ff.).

4.5. Planning a Secondary Indirect (Non-measurable) Cost Centre - # 6033.

The cost centre that will be planned here is # 6033 the Plant maintenance planning cost centre. This cost centre is responsible for tracking machine usage in the factory and to plan the tasks that must be performed by the artisans in cost centre # 6032. Cost centre # 6033 is therefore an overhead cost centre to cost centre # 6032. Cost centre # 6033 is controlled within the Plaut ABC concept as a secondary indirect (non-measurable) cost centre.

The planning for this cost centre is done on the grounds of the activities that it performs for the Plant maintenance cost centre, similar to the Manager Production, # 6020 above. The budget for the activities are calculated at a level of activity that corresponds to the level of activity of cost centre # 6032. This means that the activity of the Plant maintenance planning cost centre (e.g. support hours) is planned to align to the planned activity of the Plant maintenance cost centre, since the rationale is that:

- the authorised costs of the Plant maintenance planning cost centre # 6033 are determined by the actual level of activity of the Plant maintenance cost centre # 6032.

Note that the actual support hours worked are not recorded, since the type of overhead considered here normally comprises white collar workers who do not give hourly or even daily account of time spent.

The budget for cost centre # 6033 appears in Figure 3.13. Note again the primary and secondary costs in the budget. Secondary costs here include costs from the manager's cost centre # 6030 and the building cost centre # 6031. Between cost centres #'s 6031, 6032 and 6033 the total quantities, of all three activity bases, of the Manager support, # 6030, is budgeted as secondary costs. This means that the total supply of non-measurable activities will always be equal to the total demand. These quantities are the standard allocations determined during the ACP phase for secondary indirect activities.

The total amount of cost centre # 6033's activity (Support hours) was budgeted on cost centre # 6032 as secondary costs, see Figure 3.12.

(Kilger, 1988, p. 340 ff. & 543 ff.).

4.6. Planning a Primary Direct Cost Centre - # 6021.

Cost centre # 6021 is one of the cost centres responsible for the assembly of the sections of sheet metal that is received from the three guillotine cost centres, where they were cut and bent to requirement. The size and thickness

FIGURE 3.13

BUDGET FOR A SECONDARY INDIRECT (NON- MEASURABLE) COST CENTRE - # 6033

COST CENTRE NUMBER:		COST CENTRE : PLANT MAINTENANCE PLANNING SECTION				
6033		ACTIVITY BASE : SUPPORT HOURS (SUH)				
PRIMARY COSTS						
ACCOUNT NUMBER	ACCOUNT DESCRIPTION			PLANNED FIXED AMOUNT	PLANNED PROPOR- TIONAL AMOUNT	
3002	Salaries - Lower Management			50 000	-	
3003	Salaries - Clerical staff			-	80 000	
4302	Imputed social cost - Low.Management			20 000	-	
4303	Imputed social cost - Clerical staff			32 000	-	
3031	Stationery			-	2 000	
3019	Computer consumables			500	5 000	
Primary cost totals :				102 500	87 000	
SECONDARY COSTS						
ACCOUNT NUMBER	COST CENTRE	ACTI- VITY	ACTIVITY QUANTITY	STANDARD RATE	PLANNED FIXED AMOUNT	PLANNED PROPOR- TIONAL AMOUNT
4201	6031	SQM	30	R 30	1 200	-
4204	6030	OR	10	R 560	5 600	-
4204	6030	OP	80	R 580	46 400	-
4204	6030	PC	10	R 540	5 400	-
Secondary cost totals :					58 600	0
Total cost : R 248 100						
Planned activity base quantity : 3 500 hrs				Fixed rate	Proportional rate	
Activity base rate : $248\ 100 / 3\ 500 = R\ 70.89$				R 46.03	R 24.86	

of the sheets determine which guillotine cost centre processes the sheet metal.

Cost centre 6021 consists of a supervisor, 10 labourers and two computerised spot welders. The pieces of sheet metal are aligned in jigs which are then placed on a closed loop conveyor and fed through the spot welders. Once welded, the product is removed from the jig by the next cost centre in the production line. The jig remains attached to the conveyor for the duration of a production run. The assembly cost centre receives the sheet metal on trolleys, the labourers place the pieces in the jigs, align and then secure them. Depending on which product is being manufactured, the jigs can vary from four per conveyor for the larger steel cabinets to 48 (four groups of twelve) for hand-held tool boxes. At the end of each production run the jigs are removed and another set is installed by the labourers. The supervisor is responsible to change the memory cards of the spot welders to ensure the correct welding sequence for the next product.

In evaluating cost centre 6021 it is clear that it should have three activities viz, labour hours, set-up hours and machine hours. The two major cost items in this cost centre are, the labour costs (cost drivers - labour hours and set-up hours) and the capital value of the spot welders (cost driver - machine hours). The labour component is split into productive labour hours and set-up hours, since

these two tasks are of a different nature and are performed on products in varying proportions. (The next chapter on product costing will highlight this again.)

Figure 3.14 illustrates the budget for the labour hour activity. Note again, the secondary budget and the fact that these costs are included in the rate of this labour hour activity. This implies that all secondary cost charges and allocations are included in primary cost centre rates, (more about this in section 4.8 below). The salaries for the Supervisor, i.e. Lower management - salaries represent only 90 % of his planned salary. The balance will be planned on the machine hour activity due to the time that the supervisor spends on the machines during change-overs i.e. changing computer cards.

(Kilger, 1988, p. 328 ff. & 373 ff.).

4.7. Planning an additional activity for the Cost Centre - # 6021.

Figure 3.15 illustrates the budget for the machine hour activity of cost centre # 6021. Apart from the primary and secondary budgetary concepts introduced above, also note the following four concepts that are introduced here and need further elaboration:

- **Depreciation** within the Plaut ABC concept is not financial depreciation. Depreciation is calculated as a function of replacement cost, hence the

FIGURE 3.14

BUDGET FOR A PRIMARY DIRECT COST CENTRE - # 6021

COST CENTRE NUMBER:		COST CENTRE : ASSEMBLY SECTION				
6021		ACTIVITY BASE : LABOUR HOURS (LH)				
PRIMARY COSTS						
ACCOUNT NUMBER	ACCOUNT DESCRIPTION	PLANNED FIXED AMOUNT	PLANNED PROPOR- TIONAL AMOUNT			
3002	Salaries - Lower Management	45 000	-			
3006	Salaries - Labourers	-	200 000			
4302	Imputed social cost - Low. Management	18 000	-			
4306	Imputed social cost - Labourers	40 000	-			
3030	Clothing	200	2 000			
Primary cost totals :		103 200	202 000			
SECONDARY COSTS						
ACCOUNT NUMBER	COST CENTRE	ACTI- VITY	ACTIVITY QUANTITY	STANDARD RATE	PLANNED FIXED AMOUNT	PLANNED PROPOR- TIONAL AMOUNT
4201	6031	SQM	200	R 30	6 000	-
4204	6020	OR	15	R 562	8 430	-
4204	6020	OP	75	R 584.80	43 860	-
4204	6020	PC	30	R 570	17 100	-
Secondary cost totals :					75 390	0
Total cost : R 380 590						
Planned activity base quantity : 16 700 hrs					Fixed rate	Proportional rate
Activity base rate : 380 590/16 700 = R 22.79					R 10.69	R 12.10

FIGURE 3.15

BUDGET FOR AN ADDITIONAL ACTIVITY IN A PRIMARY DIRECT COST CENTRE - # 6021

COST CENTRE NUMBER:		COST CENTRE : ASSEMBLY SECTION				
6021		ACTIVITY BASE : MACHINE HOURS (MH)				
PRIMARY COSTS						
ACCOUNT NUMBER	ACCOUNT DESCRIPTION	PLANNED FIXED AMOUNT	PLANNED PROPOR- TIONAL AMOUNT			
3002	Salaries - Lower Management	-	5 000			
4302	Imputed social cost - Low. Management	-	2 000			
3111	Oils and lubricants	100	900			
4311	Imputed Major Maintenance	5 000				
4312	Imputed Electricity	-	65 000			
4313	Imputed Depreciation	33 333	33 333			
4314	Imputed Interest	2 000	-			
Primary cost totals :		10 433	76 233			
SECONDARY COSTS						
ACCOUNT NUMBER	COST CENTRE	ACTI- VITY	ACTIVITY QUANTITY	STANDARD RATE	PLANNED FIXED AMOUNT	PLANNED PROPOR- TIONAL AMOUNT
4201	6031	SQM	300	R 30	9 000	-
4204	6020	OR	5	R 562	2 810	-
4204	6020	PC	30	R 570	17 100	-
4202	6021	LH	50	R 22.79	535	605
4206	6032	LHM	100	R 59.10	2 955	2 955
Secondary cost totals :					32 400	3 560
Total cost : R 122 626						
Planned activity base quantity : 2 600 hrs					Fixed rate	Proportional rate
Activity base rate : $122\,626 / 2\,600 = R\,47.16$					R 16.47	R 30.69

INTERNAL WORKS ORDER - PROVISIONAL		
ACTUAL COSTS WHEN INCURRED	→ XXXXXX	YEAR 1 5000
		YEAR 2 5000
		YEAR 3 5000
		TOTAL PROVISION YYYYY

designation - Imputed depreciation. The following example to illustrate:

- For the spot welders a '**usage life**' must be determined, i.e. the life that the welders will have with current utilisation levels, e.g. 15 years.
- The '**economic life**' of the welders must also be determined i.e. the expected life of the welders as far as usefulness and longevity of technology is concerned, e.g. 30 years.

The fixed component of depreciation is calculated by dividing the replacement value of the welders by the economic life. If the welders cost R100 000 to replace the fixed portion of depreciation is:

$$= \text{R}100\,000 / 30 \text{ years}$$

$$= \text{R}3\,333.$$



The proportional component of depreciation is calculated as, the replacement value of the spot welders divided by the usage life minus fixed component of depreciation. The proportional component of depreciation is:

$$= (\text{R}100\,000 / 15) - \text{R}3\,333$$

$$= \text{R}3\,333.$$



The total for depreciation, as reflected in

Figure 3.15, is therefore R6 666.

The reasons for not using financial depreciation and accounting for it as explained above is the following:

- By using replacement value throughout the organisation, regardless of age of equipment, the cost centre rates reflect the capital structure of the organisation. This prevents the occurrence where an expensive capital item is not accounted for in cost rates because it is 'paid for' in the financial accounting system. Products are manufactured and introduced for manufacturing on this 'cheap' capital item. However, when this capital item comes up for replacement, the sudden hike in costs (financial depreciation) will cause those previously 'profitable' products to become unprofitable or have less favourable contribution margins. This kind of dubious decision-making on new products is therefore eliminated.
- The replacement capital costs being included in the costs charged to the products, ensure that a margin is already built into costs that represents that portion of profit that will be used for the own financing of new capital expenditure. This generation of funds is again

achieved without arbitrary decisions on the amounts or the sources thereof, but is instead achieved logically according to the organisation's existing capital structure.

- If financial depreciation was used new machines would be more expensive than older machines, i.e. machines fully depreciated. In practice this leads to the under-utilisation of new machinery since products are rather manufactured/introduced on older 'cheaper' machines.

- Interest on capital is defined as the financial interest paid on existing loans used to finance capital assets, both fixed and working capital. Interest on capital in the Plaut ABC concept is a function of capital assets' replacement value. This is done to ensure a recovery of this cost according to the existing capital structure rather than to try and pinpoint the finance charges to the assets actually purchased or to be purchased with the funds. This cost is normally a 100 % fixed.

- Imputed major maintenance is a provision for costs that will be incurred for a major cost event in the future. In the model the spot welders in cost centre # 6021 will receive a major overhaul when they are five years old. The costs for this

overhaul is planned, in year one of the acquisition of the asset, on an internal works order. A standard cost is then booked to the cost centre from the works order, as can be seen in Figure 3.15. In this way the cost centre rate includes the cost of the overhaul and will not suddenly increase in year five because of the overhaul. The actual cost of the overhaul is controlled on a works order when the event takes place. Over or under-recovery of costs are then accounted for against the cost centre.

- **Imputed electricity**, also called calculated electricity, is a practice whereby the electricity that will be consumed in a cost centre is calculated. This is only done when an electricity meter is not installed. The kilowatt rating of the machines are multiplied by the planned hours that the machines will work. The product (kilowatt hours) is multiplied by the cost per kilowatt hour of electricity. This calculated cost is called a 'target equals actual' account. The calculation to arrive at the planned amount, of electricity in Figure 3.15, was done as follows:

Calculation:

= 2 machines at 250 kW each times 2600 hours.

= 1 300 000 kilowatt hours times R0.05

= R65 000

=====➔

(The calculation of actual costs for this account will be fully explained below when actual information is dealt with. Section 5.6.).

The secondary budget for the machine hour activity in Figure 3.15 has the following noteworthy features:

- Only two of the Manager Production's activities are budgeted against the machine hours. The activity 'Operating' is in this instance not considered to be applicable.
- The labour hours from cost centre # 6021 is for minor lubrication of the conveyor during production. This cost is defined as 80 % proportional and 20 % fixed. The labour hour rate from # 6021 has, however, got a 47 % fixed component. The latter proportions of (47:53) will thus be used.
- Labour hours maintenance (LHM) from cost centre # 6032 is budgeted against the machines for the maintenance work that the artisans will do on the spot welders and conveyors. This service is defined as 50 % fixed to the machines, hence the 50:50 cost split even though the LHM rate from cost centre # 6032 has a fixed proportional ratio of 48:52.

The planning of the cost centres in the model has now been completed. A planning has been done for at least one of each type of cost centre.

(Kilger, 1988, p. 398 ff., 667 ff.).

4.8. Plan price iteration.

The plan price iteration is a process whereby, once the ACP has been completed and all the planned information loaded into the software, the rate for each activity base in a cost centre is calculated.

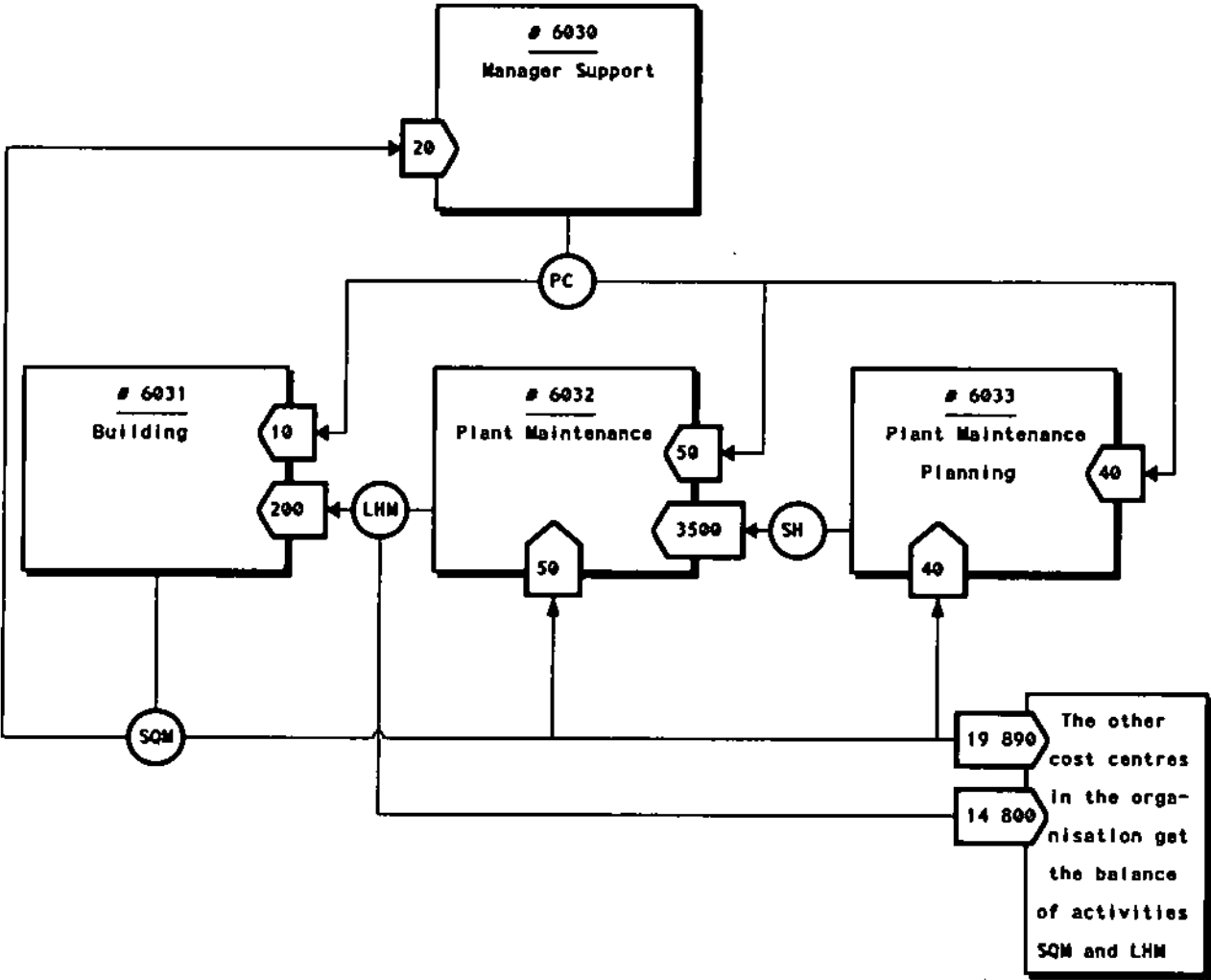
Figure 3.16.A shows a section of the model that was developed above, which will be used to illustrate the plan price iteration (PPI) process. Only part of the total model is used here to keep the calculations simple. Note that in Figure 3.16.A the consumption of direct activity quantities and the standard allocation of indirect activity quantities are shown in the squares in the receiver cost centres, the activity abbreviations are shown in the circles. The direct activities are Labour hours maintenance (LHM) and Square meters (SQM), the indirect activities are Support hours (SH) and Planning and control (PC), one of the activities of the manager. The quantities are those arrived at during the ACP and that will form the basis for the PPI.

Figure 3.16.B shows the planned activity quantities and the initial cost centre rates prior to the commencement of the iterative calculation. What the iterative calculation does is, it takes into consideration all the planned interrelationships between cost centres, it then transfers

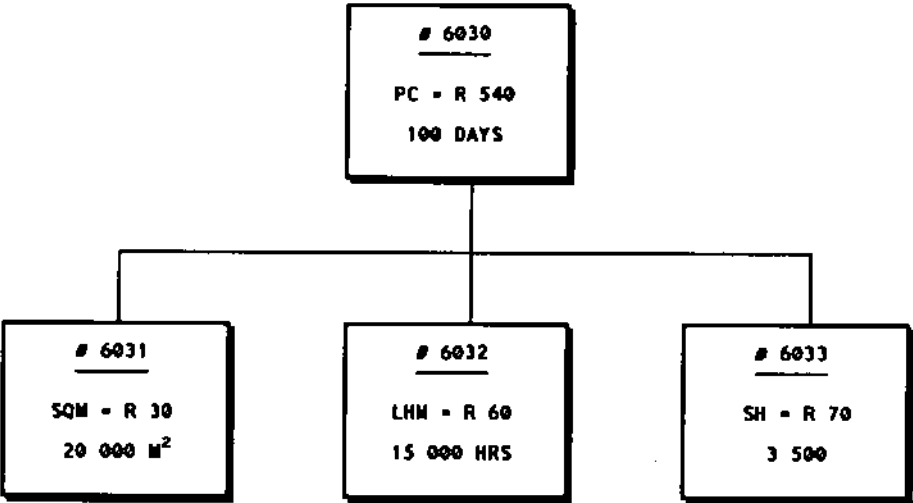
FIGURE 3.16

AN EXAMPLE OF A PLAN PRICE ITERATION USING THE MANAGER SUPPORT AND HIS SUBORDINATES

A. INTERRELATIONSHIPS



B. INITIALLY CALCULATED RATES



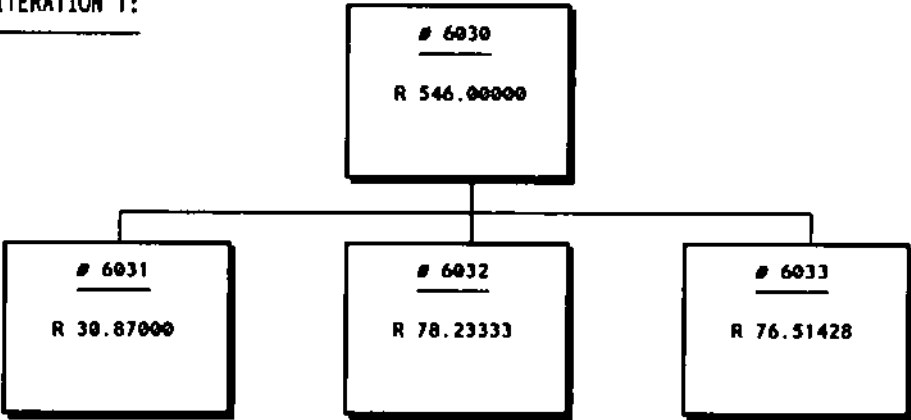
the costs from senders to receivers once, and with this information recalculates the cost centre rates. With each subsequent iteration the difference between the previous rate and the new rate is used, when the planned interrelationships are again transferred. This process is repeated until all the rates stabilise, i.e. the changes to the rates between two consecutive iterative calculations are insignificantly small.

Sections A to D of Figure 3.17 show the rates for the cost centres chosen, after one, two, three and four iterations respectively. For the purpose of this explanation the rates are shown with five decimal places. Note that by the fourth iteration the rates had stabilised to the second decimal place. More iterations will result in more accurate rates, but for the purpose of illustrating the principle, this will suffice. In large organisations literary thousands of interrelationships can exist between cost centres, which makes the PPI unsuitable for an application such as a Personal Computer.

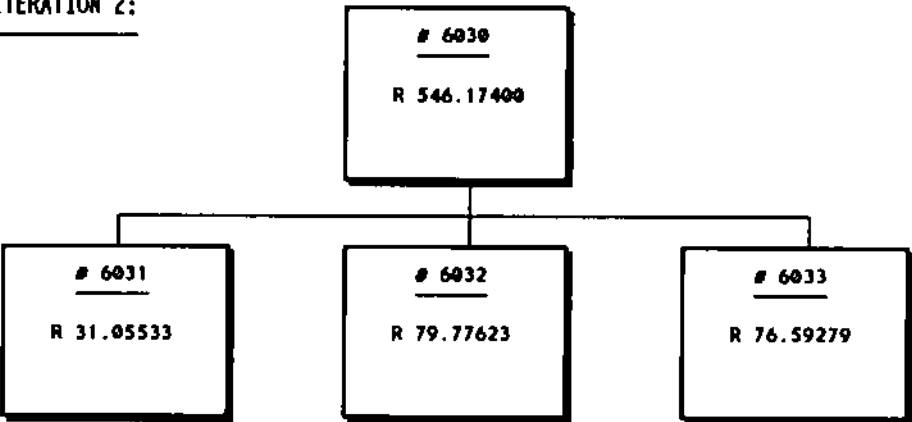
Within the Plaut ABC concept the PPI process has the implication that the total cost on cost centres are included and charged to products via the standard activity rates of the primary cost centres. This principle, that total cost centre cost is charged or allocated to products through primary activity rates or recovered from contribution margins, is schematically represented in

THE ITERATIVE CALCULATION OF COST CENTRE RATES

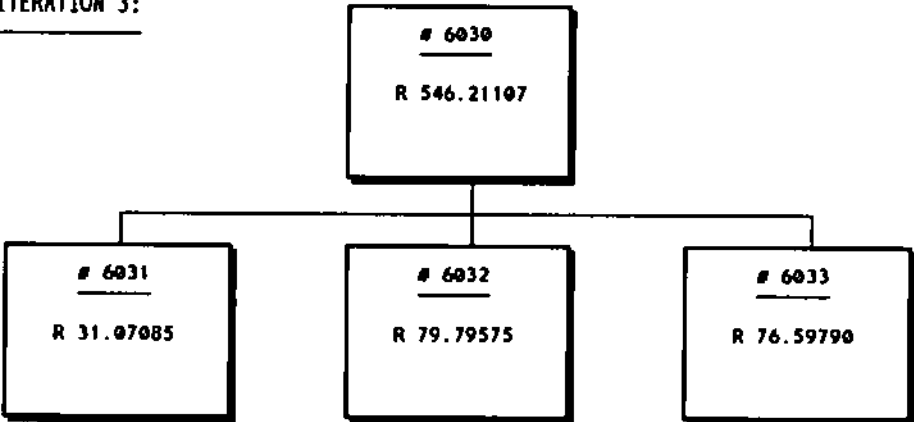
A. ITERATION 1:



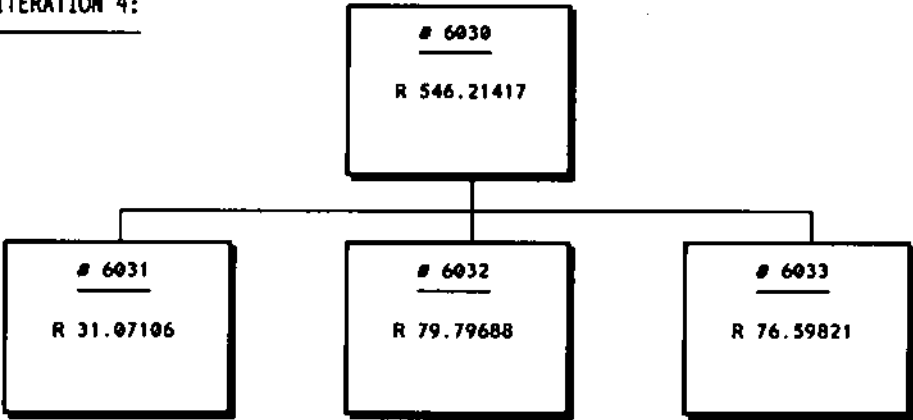
B. ITERATION 2:



C. ITERATION 3:



D. ITERATION 4:



E. ORIGINAL BUDGETS BOOKED OFF THROUGH THE CALCULATED RATES

ORIGINAL BUDGETS:

# 6030	-	R 540 x 100 days	=	R 54 000
# 6031	-	R 30 x 20 000 m ²	=	R 600 000
# 6032	-	R 60 x 15 000 hrs	=	R 900 000
# 6033	-	R 70 x 3 500 hrs	=	R 245 000
				<u>R 1 799 000</u>

COSTS BEING BOOKED TO THE REST OF THE ORGANISATION WITH THE NEW RATES:

# 6031	-	R 31.07 x 19 890 m ²	=	R 618 003.3834
# 6032	-	R 79.79 x 14 800 hrs	=	R 1 180 993.8240
				<u>R 1 798 997.2074</u>

THE DIFFERENCE:

ORIGINAL BUDGET	=	R 1 799 000.0000
TO BE BOOKED OFF	=	<u>R 1 798 997.2074</u>
		<u>R 2.793</u>

Figure 3.18. In the model used to illustrate the iterative calculation, only secondary cost centres were used but the same principle applies.

Figure 3.17.E proves that the total initial budgets for the four cost centres, used in the PPI model, are charged to other cost centres in the organisation through the balance of # 6031 and # 6032's activities. The R2,79 difference is due to the premature termination of the PPI at the fourth iteration.

(Kilger, 1988, p. 212 ff.).

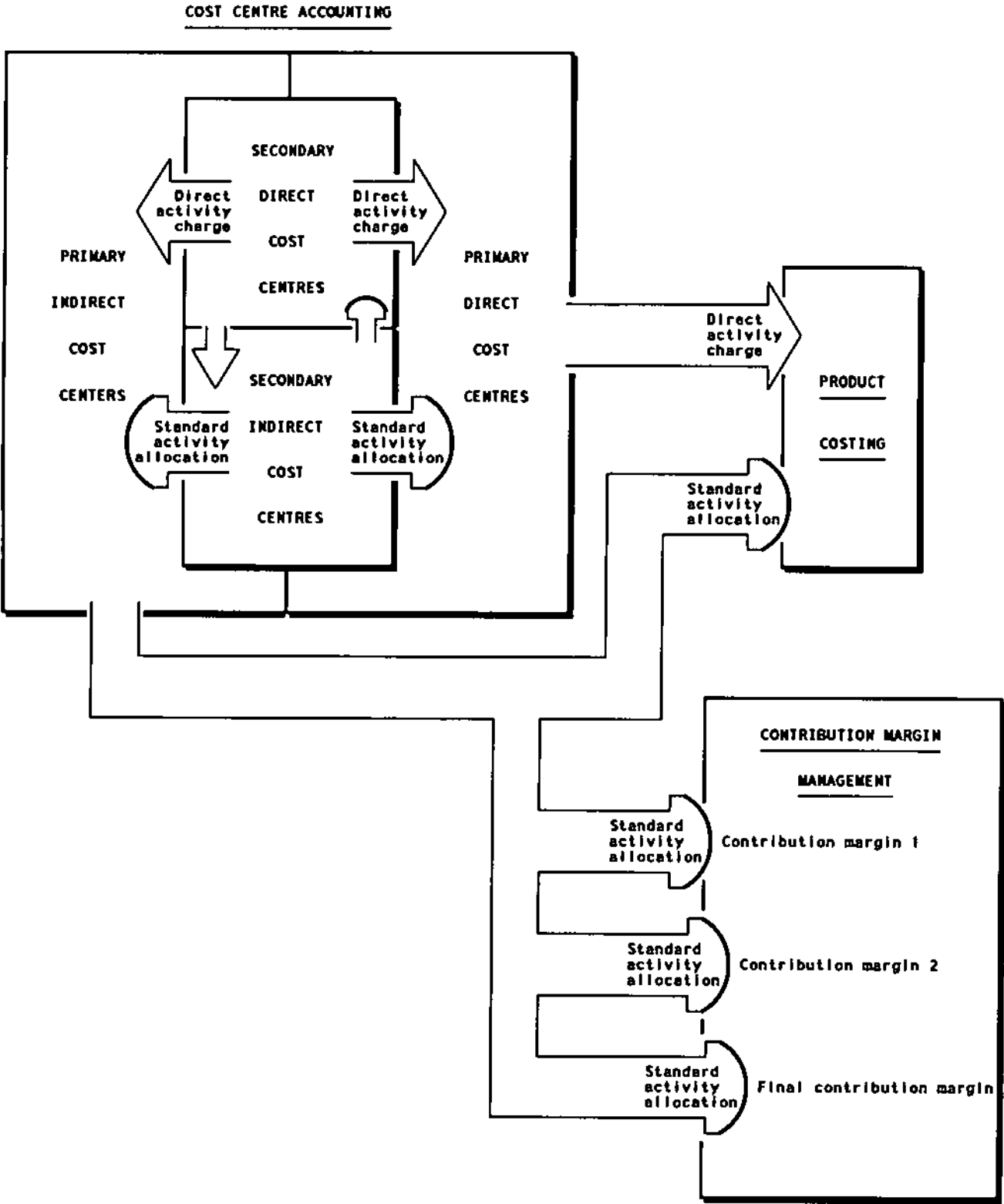
4.9. Standard rates.

The output from the PPI is the standard rate for each activity of a cost centre. This rate is the standard charge for the cost centre's activity that will be used for the duration of the planning period. The standard rates are used for charging and allocation of costs between cost centres, to internal works orders, the charging and allocation of costs to products and the recovery of costs from contribution margins. Although not shown in the small example on PPI above, each rate also consists of its fixed and proportional components.

(Kilger, 1988, p. 212 ff.).

FIGURE 3.18

ACCOUNTING FOR TOTAL COST CENTRE COST



4.10. Analysis of the plan.

Once the cost centre rates have been calculated, a detailed analysis of the plan can be made. This would involve the following :

- Comparing cost centre rates between similar cost-structured cost centres.
- Comparing cost centre rates to market rates for similar services.
- Comparing historic rates to current planned rates.
- For similar cost-structured activities comparing the proportional components of the rates. The rationale being that, two labour activities should have the same proportional cost component.
- Capacity planning, reconciling the supply of secondary direct activities with the demand for these activities from other cost centres.

5. Processing of actual information.

5.1. Introduction.

The actual information consists of actual monetary information, i.e. costs and actual activity base quantities. Actual costs can be the booking to primary costs as invoices are paid, material drawn from stock and the costs from internal works orders for provisions and events (individual or permanent - refer Figure 3.5) are incurred. Actual activity base information is for the activities performed, these quantities are used to post

secondary costs to cost centres, internal works orders and products.

5.2. Actual activity quantities.

These are the actual quantities worked by primary direct and secondary direct cost centres. Primary direct activity quantities are posted at standard rates to the products for which the activities were performed. These costs are classified as secondary costs to the products (Refer Chapter 4). Secondary direct activity quantities are used to process secondary costs within cost centre accounting i.e. actual activity quantity times the standard rate of the sender cost centre's activity is posted to the receiver cost centre as secondary costs.

The actual quantities of secondary indirect activities will be discussed in section 5.7 below. The actual activity quantities for primary indirect cost centres are equal to the planned quantities and are booked off to contribution margin management. No physical recording of these two indirect activities is required.

The actual activity quantities of the direct activities and the costs attached, are processed periodically, i.e. daily, weekly or monthly, depending on the organisation. Naturally more frequent processing makes for better cost management, since more information is available on-line.

Figure 3.19 shows some actual information for cost centre # 6032 compared to the original plan (Figure 3.12 above). Note in the secondary costs, that more activities of cost centres # 6033 and 6030 were consumed than what was originally planned. The higher consumption of these secondary indirect activities is in proportion to the own activity increase of 10 % (15 000 hours to 16 500 hours) of cost centre # 6032.

All secondary costs are at standard rates, whether charged directly (# 6031) or allocated by standards (#'s 6030 and 6033).

5.3. Actual costs.

Actual costs are available to the cost centre or on the internal works order on-line, at the moment of stock withdrawal and invoice posting. The costs from internal works orders are processed periodically, normally monthly when the works order is closed and the costs settled to the receiver, such as a cost centre.

5.4. Actual imputed costs.

Actual costs for cost accounts that are calculated are also processed periodically. The example used in section 3.2 and Figure 3.10 above for social costs is applicable. During the ACP process social costs were calculated as a percentage of planned salaries. Actual social costs are calculated as a percentage (i.e. the planned percentage) of

FIGURE 3.19

ORIGINAL PLAN VERSUS ACTUAL INFORMATION FOR A COST CENTRE - # 6032

COST CENTRE NUMBER:		COST CENTRE : PLANT MAINTENANCE SECTION					
6032		ACTIVITY BASE : LABOUR HOURS MAINTENANCE (LHM)					
PRIMARY COSTS							
ACCOUNT NUMBER	ACCOUNT DESCRIPTION	PLANNED AMOUNTS	ACTUAL AMOUNTS				
3002	Salaries - Lower Management	50 000	50 000				
3004	Salaries(Productive) Technical staff	360 000	396 000				
3005	Salaries(Unproductive) Tech. staff	40 000	40 000				
4302	Imputed social cost - Low.Management	20 000	20 000				
4304	Imputed social cost - Tech. staff	120 000	130 800				
3030	Clothing	3 000	2 800				
3040	Miscellaneous Material	1 000	1 050				
3041	Indirect Material	3 000	3 500				
Primary cost totals :		597 000	644 150				
SECONDARY COSTS							
ACCOUNT NUMBER	COST CENTRE	ACTI- VITY	PLAN ACT.QTY	ACTUAL ACT.QTY	STANDARD RATE	PLANNED AMOUNTS	ACTUAL AMOUNTS
4201	6031	SQM	50	50	R 30	1 500	1 500
4204	6030	OR	5	5.5	R 560	2 800	3 080
4204	6030	OP	50	55	R 580	29 000	31 900
4204	6030	PC	15	16.5	R 540	8 100	8 910
4205	6033	SH	3 500	3 850	R 70.89	248 100	272 926.50
Secondary cost totals :						289 500	318 316.50
Activity base information: Quantities Rates						PLANNED	ACTUAL
						15 000 R 59.10	16 500 R 58.33

FROM FIGURE
3.12 THE PLAN-
NED PERCENT-
TAGE = 30.0 %

ACTUAL SOCIAL COST AMOUNTS
ARE CALCULATED AS THE PLAN-
NED PERCENTAGE FOR SOCIAL
COSTS OF ACTUAL SALARIES

actual salaries. An example of actual imputed social costs can be seen in Figure 3.19. Here the percentage being used is 30 %.

5.5. Authorised budget - Primary & Secondary Direct Cost Centres.

The authorised budget is arrived at by using the actual activity to flex a cost centre's budget. Figure 3.20 shows the authorised budget compared to the actual costs for cost centre # 6032 at an actual activity level of 16 500 hours.

The authorised primary costs are arrived at by multiplying the planned proportional component for one unit of activity per cost account by the actual activity quantity and adding to this the planned fixed amount per cost account. The sum total of the authorised cost per cost account results in the authorised primary cost budget.

The authorised secondary budget is determined in a slightly different manner. Here the authorised quantities are calculated on that which the cost centre should have consumed in the production of its actual level of activity. The authorised quantities are arrived at by multiplying the standard quantity of activity from the sender cost centre, planned to be consumed per one LHM, with the actual activity level of LHM of cost centre # 6032. Once the authorised quantities are determined, they are multiplied by the standard rates from the sender cost centres to give

FIGURE 3.20

AUTHORISED VERSUS ACTUAL REPORT FOR A DIRECT COST CENTRE - # 6032

COST CENTRE NUMBER:		COST CENTRE : PLANT MAINTENANCE SECTION						
6032		ACTIVITY BASE : LABOUR HOURS MAINTENANCE (LHM)						
PRIMARY COSTS								
ACCOUNT NUMBER	ACCOUNT DESCRIPTION	AUTHORISED AMOUNTS	ACTUAL AMOUNTS	VARIANCE				
3002	Salaries - Lower Management	50 000	50 000	-				
3004	Salaries(Productive) Technical staff	396 000	396 000	-				
3005	Salaries(Unproductive) Tech. staff	40 000	40 000	-				
4302	Imputed social cost - Low.Management	20 000	20 000	-				
4304	Imputed social cost - Tech. staff	130 800	130 800	-				
3030	Clothing	3 200	2 800	400-				
3040	Miscellaneous Material	1 100	1 050	50-				
3041	Indirect Material	3 300	3 500	200+				
Primary cost totals :		644 400	644 150	250-				
SECONDARY COSTS								
ACCOUNT NUMBER	COST CENTRE	ACTI- VITY	AUTHOR. ACT.QTY	ACTUAL ACT.QTY	STANDARD RATE	AUTHORISED AMOUNTS	ACTUAL AMOUNTS	VARIANCE
4201	6031	SQM	50	50	R 30	1 500	1 500	-
4204	6030	OR	5.5	5.5	R 560	3 080	3 080	-
4204	6030	QP	55	55	R 580	31 900	31 900	-
4204	6030	PC	16.5	16.5	R 540	8 910	8 910	-
4205	6033	SH	3 850	3 850	R 70.89	272 926.50	272 926.50	-
Secondary cost totals :						318 316.50	318 316.50	-
Activity base information: Quantities Rates						PLANNED	ACTUAL	VARIANCE
						15 000 R 59.10	16 500 R 58.33	1 500+ R 0.77-

the authorised secondary costs.

The authorised budget will adjust the direct cost centre's budget to align with any change in its actual activity level. The authorised budget also flexes all the overhead cost accounts in a cost centre, to enable control of these costs. An example of this is the Clothing and Indirect material accounts. If zero activity is worked, only the fixed costs will be authorised.

5.6. Target equals Actual accounts.

The concept of a target = actual cost account was introduced in section 4.7 and Figure 3.15 above. Refer Figure 3.21 for the calculation of a target = actual account in an authorised budget. Figure 3.15 shows account 4312 for Imputed Electricity as R65 000 corresponding to 2 600 machine hours. In an authorised budget, for 2 000 machine hours as illustrated in Figure 3.21, the 'actual cost' for account 4312 will be calculated as R50 000, as will the authorised cost. This means that a target = actual account will never show a variance.

Calculation:

Actual amount = Planned proportional amount divided by planned activity level multiplied by actual activity level plus fixed amount.

$$\text{Actual amount} = (65\,000/2600) \times 2\,000 + 0$$

FIGURE 3.21

AUTHORISED VS. ACTUAL REPORT FOR A PRIMARY DIRECT COST CENTRE WITH A TARGET = ACTUAL ACCOUNT- # 6021

COST CENTRE NUMBER:		COST CENTRE : ASSEMBLY SECTION						
6021		ACTIVITY BASE : MACHINE HOURS (MH)						
PRIMARY COSTS								
ACCOUNT NUMBER	ACCOUNT DESCRIPTION	AUTHORISED AMOUNTS	ACTUAL AMOUNTS	VARIANCE				
3002	Salaries - Lower Management	5 000	5 000	-				
4302	Imputed social cost - Low.Management	2 000	2 000	-				
3111	Oils and lubricants	792.31	1 000	207.69+				
4311	Imputed Major Maintenance	5 000	5 000	-				
4312	Imputed Electricity	50 000	50 000	-				
4313	Imputed Depreciation	5 896	5 896	-				
4314	Imputed Interest	2 000	2 000	-				
Primary cost totals :		70 688.31	70 896	207.69+				
SECONDARY COSTS								
ACCOUNT NUMBER	COST CENTRE	ACTI- VITY	AUTHOR. ACT.QTY	ACTUAL ACT.QTY	STANDARD RATE	AUTHORISED AMOUNTS	ACTUAL AMOUNTS	VARIANCE
4201	6031	SQM	300.00	300.00	R 30.00	9 000.00	9 000.00	-
4204	6020	OR	3.85	3.85	R 562.00	2 163.70	2 163.70	-
4204	6020	PC	23.08	23.08	R 570.00	13 155.60	13 155.60	-
4202	6021	LH	38.46	50.00	R 22.79	876.50	1 139.50	263.00+
4206	6032	LHM	76.92	105.00	R 59.10	4 545.97	6 205.50	1 659.53+
Secondary cost totals :						29 714.77	31 664.30	1 922.53+
Activity base information: Quantities Rates						PLANNED	ACTUAL	VARIANCE
						2 600 R 47.16	2 000 R 51.28	600- R 4.12+

Actual amount = R 50 000



The actual electricity budget (the primary original cost account) will be against an electricity cost centre. Reconciliation of the planned costs on the primary original account for electricity and the calculated amounts on the Imputed electricity accounts, on all the cost centres, takes place during ACP. Actual primary costs incurred for electricity are also compared to target costs, as authorised during the year. Those imputed costs that had no proportional components in the original plan (Figure 3.15) do not flex. Imputed depreciation did however flex due to the difference between the planned machine hours (2 600) and the actual machine hours (2 000).

(Kilger, 1988, p. 536 ff.).

5.7. Overhead cost authorisation.

The determination of an authorised budget for overheads is a major cost control tool of the Plaut ABC concept. The authorised budgets for Primary direct and Secondary direct activities were discussed above. These serve to determine the authorised amounts for the overheads attached to the direct activities.

The authorised budgets for Secondary indirect activities are determined as follows. Recall that during the ACP

process standard allocations were arrived at for the secondary indirect activities, on the grounds of cost driver interrelationships. Cost centre # 6033, the Plant Maintenance Planning cost centre, was planned as a secondary indirect in section 4.5 above. It had a planned activity of support hours with a quantity of 3 500. These hours were allocated to cost centre # 6032, the latter being the cost centre that the Plant maintenance planning cost centre is an overhead cost to.

Using the actual activity level of the Plant Maintenance cost centre, # 6032, the actual activity level of supply hours in cost centre # 6033 is determined. The artisans in cost centre # 6032 actually worked 16 500 hours instead of the planned 15 000, arrived at during the ACP. Due to this increase in activity, the authorised support hours are also higher than originally planned (Refer Figure 3.12) 3 850 instead of 3 500. The authorised activity quantity for support hours in cost centre # 6033, will now also serve as the actual activity level for the Plant Maintenance Planning cost centre # 6033 - 3 850 instead of the 3 500 as planned.

Note that if three cost centres were allocated the secondary indirect activity from cost centre # 6033 during ACP, the actual activity level for cost centre # 6033 would have been the sum of the authorised consumptions in the three receiver cost centres. Also note that in the receiver cost centres the authorised and actual secondary

indirect costs are always the same. Refer Figure 3.20.

The 3850 hours are now used to arrive at the authorised budget for cost centre # 6033, refer Figure 3.22.

Thus, within the Plaut ABC concept, overhead cost control is achieved by means of the standards that are established during the ACP process. For a secondary indirect activity and related overheads, by means of 'inverted flexing' of the overhead cost centre's costs to obtain an authorised budget. This authorised budget is a function of the receiver cost centre's actual activity and the planned standard allocation determined during ACP.

For a secondary direct activity and related overheads, control are affected through an authorised budget, which is calculated by using the actual level of activity and the standards (costs and activities) per activity unit arrived at during ACP. The number of activity units produced by secondary direct cost centres are kept in check in that the output from these cost centres is planned against receiver cost centres in quantities, refer Figure 3.14 above where the artisans from the Plant Maintenance cost centre's hours are planned against the spot welders. Naturally, the authorised budget for the machines will allow more or less maintenance hours as its own activity goes up or down respectively, preventing secondary direct cost centres from indiscriminate representation of their time worked.

FIGURE 3.22

OVERHEAD AUTHORISATION FOR A SECONDARY INDIRECT (NON-MEASURABLE) COST CENTRE - # 6033

COST CENTRE NUMBER:		COST CENTRE : PLANT MAINTENANCE PLANNING SECTION						
6033		ACTIVITY BASE : SUPPORT HOURS (SH)						
PRIMARY COSTS								
ACCOUNT NUMBER	ACCOUNT DESCRIPTION	AUTHORISED AMOUNTS	ACTUAL AMOUNTS	VARIANCE				
3002	Salaries - Lower Management	50 000	50 000	-				
3003	Salaries - Clerical staff	88 000	85 000	3 000-				
4302	Imputed social cost - Low.Management	20 000	20 000	-				
4303	Imputed social cost - Clerical staff	35 200	34 000	1 200-				
3031	Stationery	2 200	2 500	300+				
3019	Compuer consumables	6 000	5 800	200-				
Primary cost totals :		201 400	197 300	4 100-				
SECONDARY COSTS								
ACCOUNT NUMBER	COST CENTRE	ACTI- VITY	AUTHOR. ACT. QTY	ACTUAL ACT. QTY	STANDARD RATE	AUTHORISED AMOUNTS	ACTUAL AMOUNTS	VARIANCE
4201	6031	SQM	30.00	30.00	R 30.00	1 200.00	1 200.00	-
4204	6030	OR	11.00	11.00	R 560.00	5 600.00	5 600.00	-
4204	6030	OP	88.00	88.00	R 580.00	46 400.00	46 400.00	-
4204	6001	PC	11.00	11.00	R 540.00	5 400.00	5 400.00	-
Secondary cost totals :						58 600.00	58 600.00	-
Activity base Information: Quantities Rates						PLANNED	ACTUAL	VARIANCE
						3 500 R 70.89	3 850 R 66.47	350+ R 4.42-

(Kilger, 1988, p. 243 ff.).

6. Cost control and analysis of actual information.

6.1. Introduction.

Proper control and analysis can only be done after the posting of all costs have occurred, this includes the periodic processing mentioned above. The bulk of costs are, however, available on-line for cost control and analysis.

6.2. Variance analysis.

In the realm of cost centre accounting, price and volume variances are identifiable. The standard price system introduced in section 3.6 above, enables the identification of price variances for labour costs as well as for material consumed by the cost centres. Once the price variances have been isolated the volume variances remain, the latter is considered a controllable variance in all instances.

The volume variance being that quantity of, for example material that the cost centre consumed over and above the authorised amount.

6.3. Recovery of cost centre costs.

Cost centre accounting aims to get total cost centre cost on to the products of the organisation. Recoveries are calculated as actual activity times planned activity rate. Sender cost centres are credited with total monthly

recoveries and the receiver (being either a product or another cost centre) is debited.

A variance that occurs within recoveries in cost centre accounting is that of over or under-recovery of fixed costs. This occurs when more of a cost centre's activity is produced than what was originally planned (over-recovery) or when less of a cost centre's activity is worked than what was planned (under-recovery). Over or under-recovery occurs between cost centres as well as between primary cost centres and products.

6.4. Variance allocation.

Variances between authorised costs and actual costs can be allocated in two ways, depending on the individual organisation.

- Variances can be allocated to the products actually worked on, i.e to the Work-in-process account and to stock.
- Alternatively, the variances can be brought into account during stepped recovery in contribution margin management.

Over or under-recovery of fixed costs is not an actual cost variance. For this reason these over or under recoveries are not normally allocated to products but accounted for during stepped recovery in contribution margin management. This is done to ensure accurate final contribution figures,

since an under-recovery of fixed costs will cause a decrease in profit and vice versa.

6.5. Actual rate determination.

The calculation of actual activity rate is achieved by dividing actual costs by actual activity quantity. This is useful information when compared to the planned rate as well as when analysed in its constituents for the next planning period. The actual rate is also helpful in refining the activity based concept once implemented, since it will differ from the planned rate if errors occurred during planning or if planning was done on incorrect assumptions.

(Kilger, 1988, p. 230 ff., 546 ff. & 672 ff.).

7. Conclusion.

Cost centre accounting aims to effect control and accurate allocation of all overhead costs in the organisation. This is achieved through the activity base concept, contained in cost centre accounting, where costs are allocated to activity consumers (both cost centres and products), and flexed budgets are derived for overhead cost control. A standard price system further enhances the control element.

With reference to what was said in Chapter 2 on the comprehensiveness of Plaut ABC, note the following:

- What was discussed in this chapter is in fact activity

based costing. The current debate, in the international management accounting domain, on the subject of ABC is taking place, in the main, within the context of this chapter - cost centre accounting.

- The acronym 'Plaut ABC' is in part a misnomer, because the Plaut organisation's approach to management accounting utilises the ABC concept as one part of a comprehensive package.

Finally, one of the products of cost centre accounting is standard cost centre rates that form such an important input into product costing. The latter being the subject of the next chapter.

Chapter 4

1. Introduction.

In this chapter the model initiated in Chapter 3 will be expanded on to include product costing. The objectives of and prerequisites for product costing will first be discussed. A discussion on planning and recording of actual information will follow in sections 4 and 5. The chapter will be concluded with an exposition on authorised product cost, product performance reports and variance analysis.

Figure 4.1 (Vikas, 1991, p. 28) shows the place of Product costing in the Plaut ABC concept. Product costing establishes the standard cost rates for products that forms the basis for profit management that will be discussed in Chapter 5.

2. The objectives of Product costing.

The following are the objectives of product costing in the Plaut ABC concept:

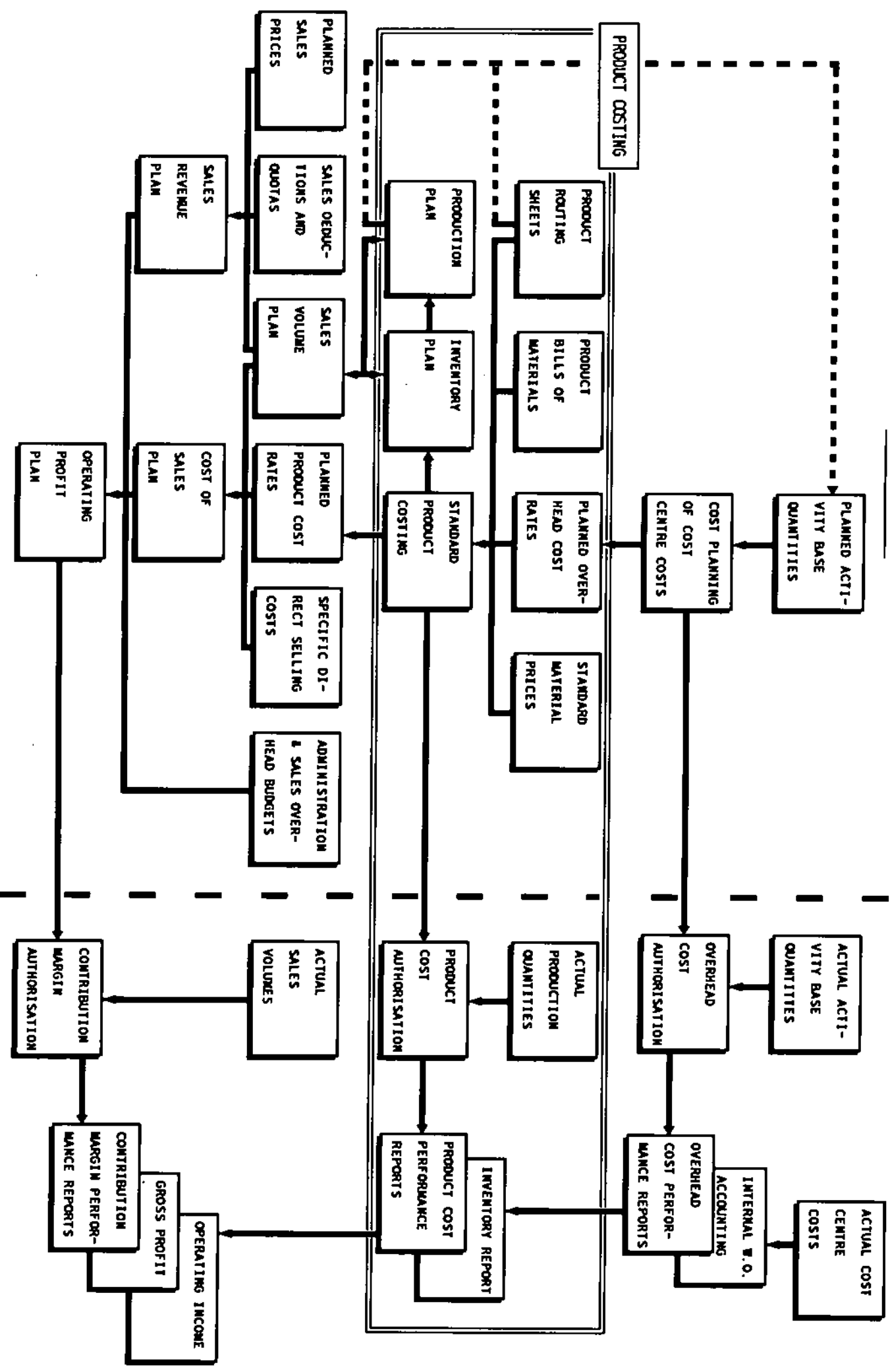
- To provide full and marginal cost rates on products for the effective management of profit.
- To derive accurate production standards per product or product range.
- To enable production cost performance reporting, where standard usages and standard values can be compared to actual information.

(Kilger, 1987, p. 265). (Kilger, 1988, p. 605 ff.).

FIGURE 4.1

PLANNING

CONTROL



3. The prerequisites for product costing.

3.1. Introduction.

The following five prerequisites must be in place to ensure the achievement of the stated objectives of product costing:

- Production works order master.
- Product master.
- Bills of materials.
- Routing sheets.
- Data recording systems.

A short explanation on each of the prerequisites is given next.

3.2. Production works order master.

Production works orders must be in place for the accumulation of actual costs. A production works order can be used for individual jobs or for batch jobs. This implies that additional information must also be recorded on the production works order, viz:

- The unit of measure of the product being manufactured.
- The quantity of the product actually manufactured.

Production works orders must also be able to facilitate parallel coding of information, viz:

- The product line.
- The product group
- The customer that the product belongs to or is being manufactured for.

The latter is included to facilitate flexible reporting. (Kilger, 1988, p. 650-658).

3.3. Product master.

The product master contains the master data on a product. This includes the product name or number, its description, its unit of measure and parallel coding. Parallel coding is used to indicate the product line that a product belongs to as well as the product group.

(Kilger, 1988, p. 609-640).

3.4. Bills of material.

Bills of material (BOM) list the raw materials, semifinished parts and the ready-manufactured subassemblies, that are purchased and go into the manufacturing of each product. These are stated in unitary information such as kilograms or pieces, depending on the unit of measure of each, as well as monetary values. A BOM is created for each product, however, if this involves too great an amount of detail, then for each product line. A BOM provides the standards per product, when the authorised budget is compiled.

Multiple levels of BOM's are also used, i.e. semifinished products that go into finished products have their own BOM's. This enhances the management of product costs in that one semifinished product might form part of more than one finished product.

(Kilger, 1988, p. 609-640).

3.5. Routing sheets.

Routing sheets define the activities that go into each product. The routing being the consecutive work stations that the product passes through during manufacturing. Here a work station refers to the activity of a cost centre. If a cost centre has two activities, like # 6021 in the model, then # 6021 labour hours will be a work station and # 6021 machine hours will be another work station. On the routing sheet is also defined the quantity of activity that is needed per product to manufacture it, as well as the unit of measure of the activity.

(Kilger, 1988, p. 609-640).

3.6. Data-recording system.

Although input information like BOM's and routings are normally found in a manufacturing environment the costing software contains these modules as standard for organisations, such as service industries, where this type of information is not readily available. Systems must therefore be in place for the recording of actual information in this regard.

(Kilger, 1987, p. 265 - 288).

4. Plan data used in Product costing.

4.1. Introduction.

Planning is the analytical process during which standards for products are arrived at for the planning period. These standards will be used for the determination of authorised budgets, for variance reporting and for analysis. Standard product costs also serve as inputs into contribution margin management.

4.2. Quantity standards per product.

Quantity standards for the BOM's and routings are determined per product during the planning phase. Although this is a facet that is largely driven by product design, the definition of an alternate routing or the substitution of a raw material in product development is also addressed at this stage.

Three of the products mentioned in passing during the discussion of cost centre accounting in the previous chapter will be budgeted here. The three products are the large steel cabinets (Product A), hand-held tool boxes (Product B) and the cage for an eye-level oven (Product C), which is sold to a customer and used by him as a ready-manufactured part. These budgets will form the building blocks of the product costing model that will be developed in this chapter. Figures 4.2, 4.3 and 4.4 show the respective product cost budgets for the three products.

All standards are defined into their fixed and proportional components. This applies to both materials and activities.

In the case of activities, however, the rates are already split into fixed and proportional components in cost centre accounting. Here the same principle applies to the fixed proportion of the rate as explained in chapter 3 (where the charging of secondary costs to other cost centres were discussed). Remember, that once a cost has been defined as a fixed cost it cannot be made proportional by defining it as 100 % proportional on the product. At best the proportional component will remain proportional.

(Kilger, 1988, p. 620-639).

4.3. Standard prices/rates.

Figure 3.6 (in the previous chapter) illustrates the standard prices in use in the Plaut ABC concept and Figure 4.5 (Plaut seminar notes, 1991, p. 3.22-04) shows the valuation bases used for input units and costs in product costing.

Figure 4.6 (Plaut seminar notes, 1991, p. 3.22-06) gives a schematic representation of the possible ways in which products can be valued in product costing using the costing software. Note that the authorised budget will be arrived at by multiplying actual product quantities manufactured by the planned standards, for primary accounts and activities quantities.

FIGURE 4.2**PRODUCT COST BUDGET - LARGE STEEL CABINETS**

PRODUCT : LARGE STEEL CABINETS						
NUMBER OF UNITS : 1						
MATERIALS						
DESCRIPTION	STANDARD QUANTITIES			STANDARD COSTING		
	QUANTITY	UNIT OF MEASURE	STANDARD PRICE	PROPORTIONAL COST	TOTAL COST	
SIDE AND BACK	1	PIECE	R75.00	R75.00	R75.00	
TOP	1	PIECE	R30.00	R30.00	R30.00	
FLOOR	1	PIECE	R35.00	R35.00	R35.00	
DOOR	2	PIECE	R45.00	R90.00	R90.00	
PAINT	2.5	LITRE	R40.00	R100.00	R100.00	
PURCHASED ITEMS						
DESCRIPTION	STANDARD QUANTITIES			STANDARD COSTING		
	QUANTITY	UNIT OF MEASURE	STANDARD PRICE	PROPORTIONAL COST	TOTAL COST	
DOOR HANDLE	2	PIECE	R25.00	R50.00	R50.00	
HINGE	4	PIECE	R3.00	R12.00	R12.00	
RIVET	30	PIECE	R0.20	R6.00	R6.00	
OPERATIONS						
OP	COST CENTRE	ACTIVITY	ACTIV. QTY	ACTIVITY PRICE	PROPORTIONAL COST	TOTAL COST
1	6003 GUILLOTINES	MACHINE HOURS	0.2	R100.00	R8.00	R20.00
2		LABOUR HOURS	0.4	R30.00	R4.00	R12.00
3	6021 ASSEMBLY	LABOUR HOURS	0.2	R22.79	R2.42	R4.56
4		SET-UP HOURS	0.1	R48.00	R4.00	R4.80
5		MACHINE HOURS	0.1	R47.16	R3.07	R4.72
6	6040 FITTING	LABOUR HOURS	0.4	R45.00	R10.00	R18.00
7	6052 PAINTING	LABOUR HOURS	0.2	R29.00	R3.80	R5.80
8		OVEN HOURS	1.5	R70.00	R90.00	R105.00
9	6073 INSPECTION	INSPECTION HR	0.5	R50.00	R20.00	R25.00
COST PER UNIT :				R543.29	R597.88	

FIGURE 4.3**PRODUCT COST BUDGET - HAND-HELD TOOLBOXES**

PRODUCT : HAND-HELD TOOLBOXES						
NUMBER OF UNITS : 1						
MATERIALS						
	STANDARD QUANTITIES			STANDARD COSTING		
DESCRIPTION	QUANTITY	UNIT OF MEASURE	STANDARD PRICE	PROPORTIONAL COST	TOTAL COST	
BOTTOM AND SIDES	1	PIECE	R15.00	R15.00	R15.00	
LID	2	PIECE	R9.00	R18.00	R18.00	
DRAWER	2	PIECE	R11.00	R22.00	R22.00	
SCISSOR HINGE	2	PIECE	R2.00	R4.00	R4.00	
PAINT	0.25	LITRE	R15.00	R3.75	R3.75	
PURCHASED ITEMS						
	STANDARD QUANTITIES			STANDARD COSTING		
DESCRIPTION	QUANTITY	UNIT OF MEASURE	STANDARD PRICE	PROPORTIONAL COST	TOTAL COST	
HINGE	2	PIECE	R3.50	R7.00	R7.00	
RIVET	16	PIECE	R0.20	R3.20	R3.20	
OPERATIONS						
OP	COST CENTRE	ACTIVITY	ACTIV. QTY	ACTIVITY PRICE	PROPORTIONAL COST	TOTAL COST
1	6003 GUILLOTINES	MACHINE HOURS	0.1	R100.00	R4.00	R10.00
2		LABOUR HOURS	0.2	R30.00	R2.00	R6.00
3	6021 ASSEMBLY	LABOUR HOURS	0.05	R22.79	R0.61	R1.14
4		SET-UP HOURS	0.09	R48.00	R3.60	R4.32
5		MACHINE HOURS	0.08	R47.16	R2.45	R3.77
6	6040 FITTING	LABOUR HOURS	0.2	R45.00	R5.00	R9.00
7	6052 PAINTING	LABOUR HOURS	0.1	R29.00	R1.90	R2.90
8		OVEN HOURS	-	R70.00	-	-
9	6073 INSPECTION	INSPECTION HR	0.1	R50.00	R4.00	R5.00
COST PER UNIT :				R96.51	R115.08	

FIGURE 4.4

PRODUCT COST BUDGET - EYE-LEVEL-OVEN CAGE

PRODUCT : EYE-LEVEL-OVEN CAGE						
NUMBER OF UNITS : 1						
MATERIALS						
DESCRIPTION	STANDARD QUANTITIES			STANDARD COSTING		
	QUANTITY	UNIT OF MEASURE	STANDARD PRICE	PROPORTIONAL COST	TOTAL COST	
CAGE	1	PIECE	R120.00	R120.00		R120.00
BACK PLATE	1	PIECE	R60.00	R60.00		R60.00
PURCHASED ITEMS						
DESCRIPTION	STANDARD QUANTITIES			STANDARD COSTING		
	QUANTITY	UNIT OF MEASURE	STANDARD PRICE	PROPORTIONAL COST	TOTAL COST	
				-		-
				-		-
OPERATIONS						
OP	COST CENTRE	ACTIVITY	ACTIV. QTY	ACTIVITY PRICE	PROPORTIONAL COST	TOTAL COST
1	6003 GUILLOTINES	MACHINE HOURS	0.25	R100.00	R10.00	R25.00
2		LABOUR HOURS	0.4	R30.00	R4.00	R12.00
3	6021 ASSEMBLY	LABOUR HOURS	0.2	R22.79	R2.42	R4.56
4		SET-UP HOURS	0.1	R48.00	R4.00	R4.80
5		MACHINE HOURS	0.15	R47.16	R4.60	R7.07
6	6040 FITTING	LABOUR HOURS	-	R45.00	-	-
7	6052 PAINTING	LABOUR HOURS	-	R29.00	-	-
8		OVEN HOURS	-	R70.00	-	-
9	6073 INSPECTION	INSPECTION HR	0.1	R50.00	R4.00	R5.00
COST PER UNIT :					R209.02	R238.43

4.4. Standard product costing.

A standard product costing for a product is arrived at by multiplying the planned product quantities, to be manufactured, by:

- The standard prices for primary accounts (direct materials, purchased components and outside operations.)
- The standard activity rates for the standard activity base quantities, planned to be consumed, from cost centres.

(Kilger, 1988, p. 650-660).

Figures 4.2, 4.3 and 4.4 show the standard product costing for each of the three products from the model. Note the following about these budgets:

- The set-up hours from cost centre # 6021 per steel cabinet are almost the same as for a toolbox, this is due to the fact that the 48 jigs that must be aligned on the spot-welder conveyor is a relatively more cumbersome task than aligning the four jigs on the conveyor for steel cabinets. The dimensions between individual jigs are critical for the spot welders to function properly.
- The standard productive hours to manufacture a steel cabinet are, however, considerably higher than for a tool box. This is due to the fact that more than one person is needed to place the large pieces of

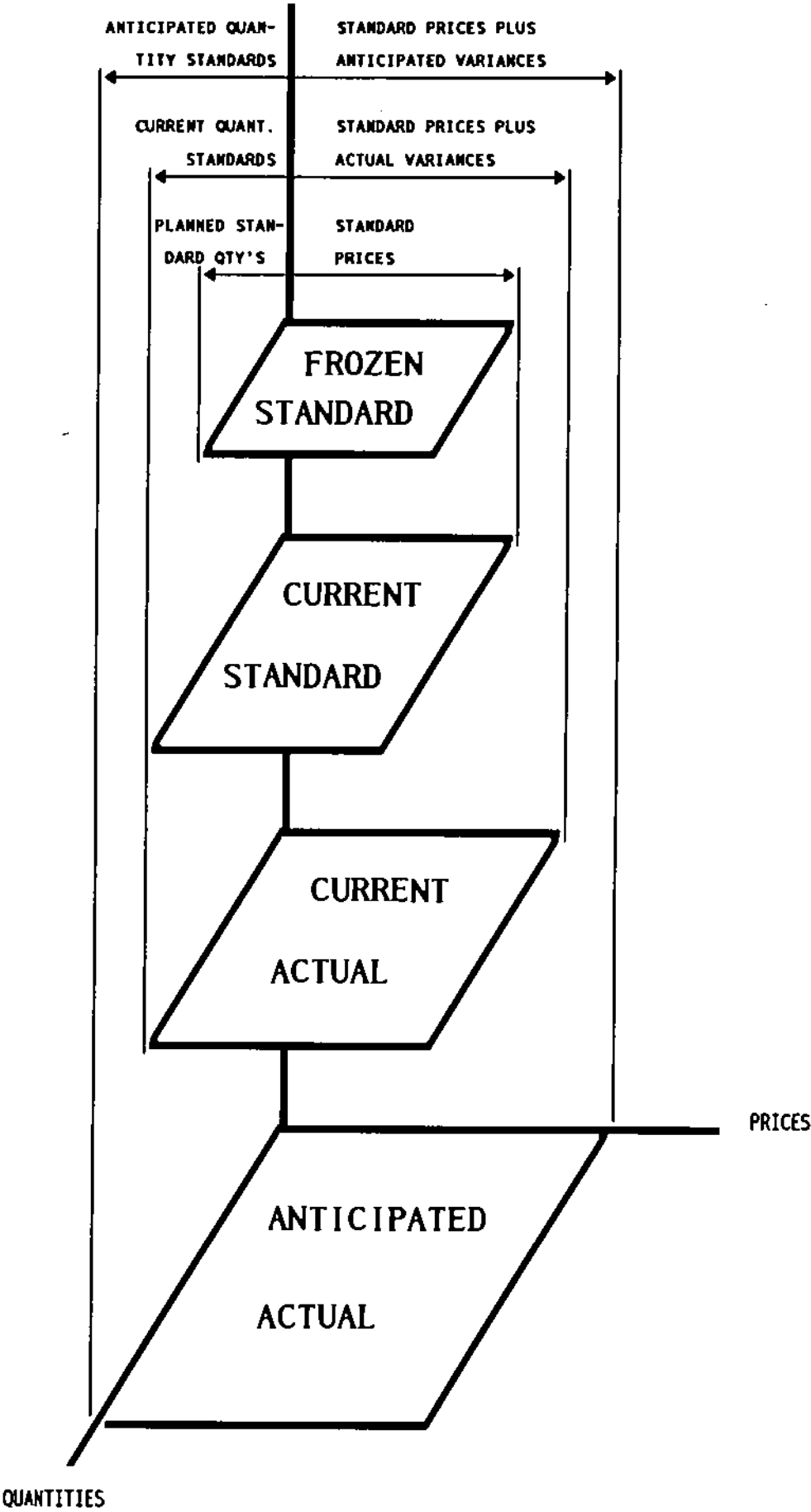
FIGURE 4.5

VALUATION BASES USED IN PRODUCT COSTING

COST ACCOUNT	VALUATION BASIS
MATERIAL	PRICES
CONVERSION COST	ACTIVITY COST RATES
SPECIAL DIRECT CONVERSION COSTS	QUOTAS OR SURCHARGES
MATERIAL OVERHEADS	QUOTAS OR SURCHARGES
ADMINISTRATION AND SELLING COSTS	QUOTAS OR SURCHARGES

FIGURE 4.6

CATEGORIES OF STANDARD PRODUCT COST CALCULATION



sheet metal in place and secure them for the steel cabinets, whereas one person easily handles and secures the small pieces of sheet metal for one toolbox.

This example is mentioned to illustrate that if ABC was not used, in this instance, a considerable error will occur in product costing. By way of explanation, note the difference in cost between a set-up hour and a productive hour (Figure 4.2). This is mainly due to the fact that during set-up, expensive pneumatic wrenches with overhead compressed air supply are used to secure the jigs onto the conveyors. The replacement depreciation of this equipment is included in the set-up-hour rate and not in the productive-labour-hour rate.

Securing the pieces of sheet metal during a production run merely requires the throwing of a few switches that activate electro-magnets which hold the sheets in place. The depreciation for these form part of machine hour costs.

The cost of the spot welders and the cost of 'unproductive hours' - set-up hours - would have been allocated to the product as a percentage that must be added to productive-labour costs if a CMA approach was in use. This would mean that the larger steel cabinets would carry the bulk of these costs because of its high consumption of productive labour hours. The fact is, however, that in this instance

the set-up hours have an inverse relationship to productive hours.

A spot welder also spends relatively more time on a toolbox than on a steel cabinet due to the many more small movements the machine has to make in welding 48 tool boxes in comparison with 4 steel cabinets. Allocating the machine costs through productive labour hours will therefore aggravate the distortion of product costs.

(Kilger, 1987, p. 270 - 298).

5. Actual data for product cost management.

5.1. Introduction.

Actual data falls into two major categories, namely costs and activities. Actual quantities of products manufactured are also needed to be able to calculate the authorised product budget.

5.2. Actual costs.

Figure 4.7 (Plaut seminar notes, 1991, p. 3.23-03) shows the actual costs that are included in product costing. Costs are divided into three major types, viz:

- Primary costs, such as material, purchased components, outside operations and other costs.
- Costs from other areas of application. Conversion costs, being costs from cost centres producing the product and charges from works orders, such as a

charge to spread the product's R & D costs over the product life.

- Costs from product cost accounting, such as re-employment of parts, and transfers from other production works orders for semifinished goods - not inventories, but goods directly used to produce final products.

5.3. Actual activities.

Figure 4.8 (Plaut seminar notes, 1991, p. 3.23-03) gives an indication of actual activity information included in product costing. Three major sources are tapped, viz:

- Completion reports giving product quantities manufactured.
- Production orders.
- Information from the production line/cost centres per item manufactured, on the quantities of cost centre activities performed for each of the products.

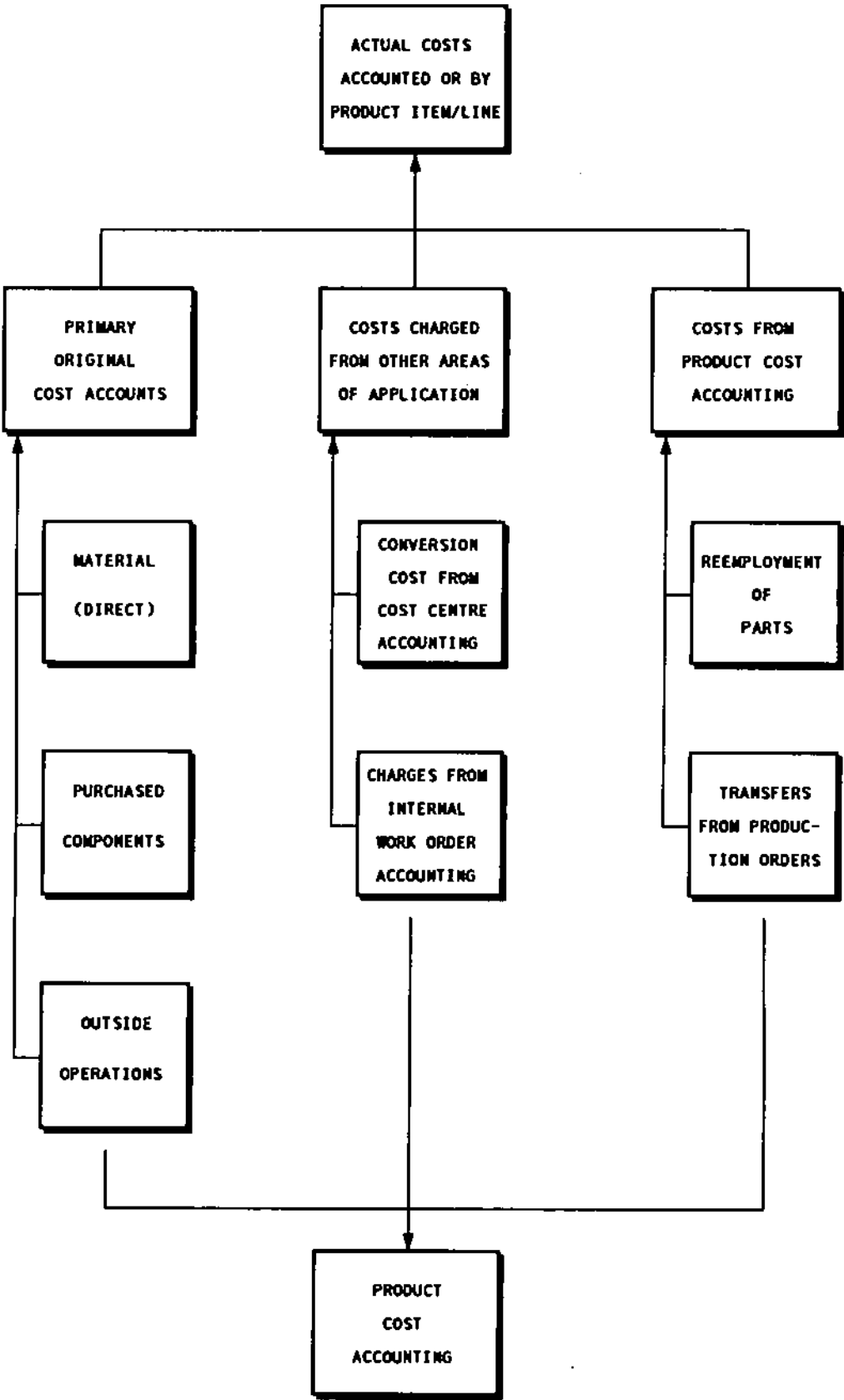
6. Processing of information.

6.1. Introduction.

What follows are processing stages in the managing of product costs. Figure 4.9 (Plaut seminar notes, 1991, p. 3.30-01) gives an overview of the data-processing procedure that applies. Figure 4.10 (Plaut seminar notes, 1991, p. 3.31-01) shows the product costing stages.

FIGURE 4.7

ACTUAL COSTS INCLUDED IN PRODUCT COSTING



Remember that frozen standards are arrived at during the planning stage (Figure 4.6).

6.2. Production-cost authorisation.

Product-cost authorisation is calculated once actual product quantities manufactured are received. Actual quantities times standard material quantities and standard activity quantities gives the authorised product budget. Figure 4.11 shows the authorised budgets for the steel-cabinet product in the model. The actual number of steel cabinets manufactured were 50 units.

6.3. Production cost performance report.

This report forms the basis for product cost control and variance analysis. Figure 4.12 gives an example of a production works order performance report for a fictitious product. To simplify the report, a fictitious product is used with only one item in its BOM and only two routings.

Primary cost accounts' price and usage variances and cost centre activity price and activity quantity usage variances are indicated. Note also the separation of the variance caused by an alternate routing of the product. Usage variances are controllable variances in all instances. Cost centre activity price variances are not controllable variances on products. The fact that activity price variances occur here shows that cost centre variances were allocated to products. If a product manager has control

FIGURE 4.8

ACTUAL ACTIVITY INFORMATION INCLUDED IN PRODUCT COSTING

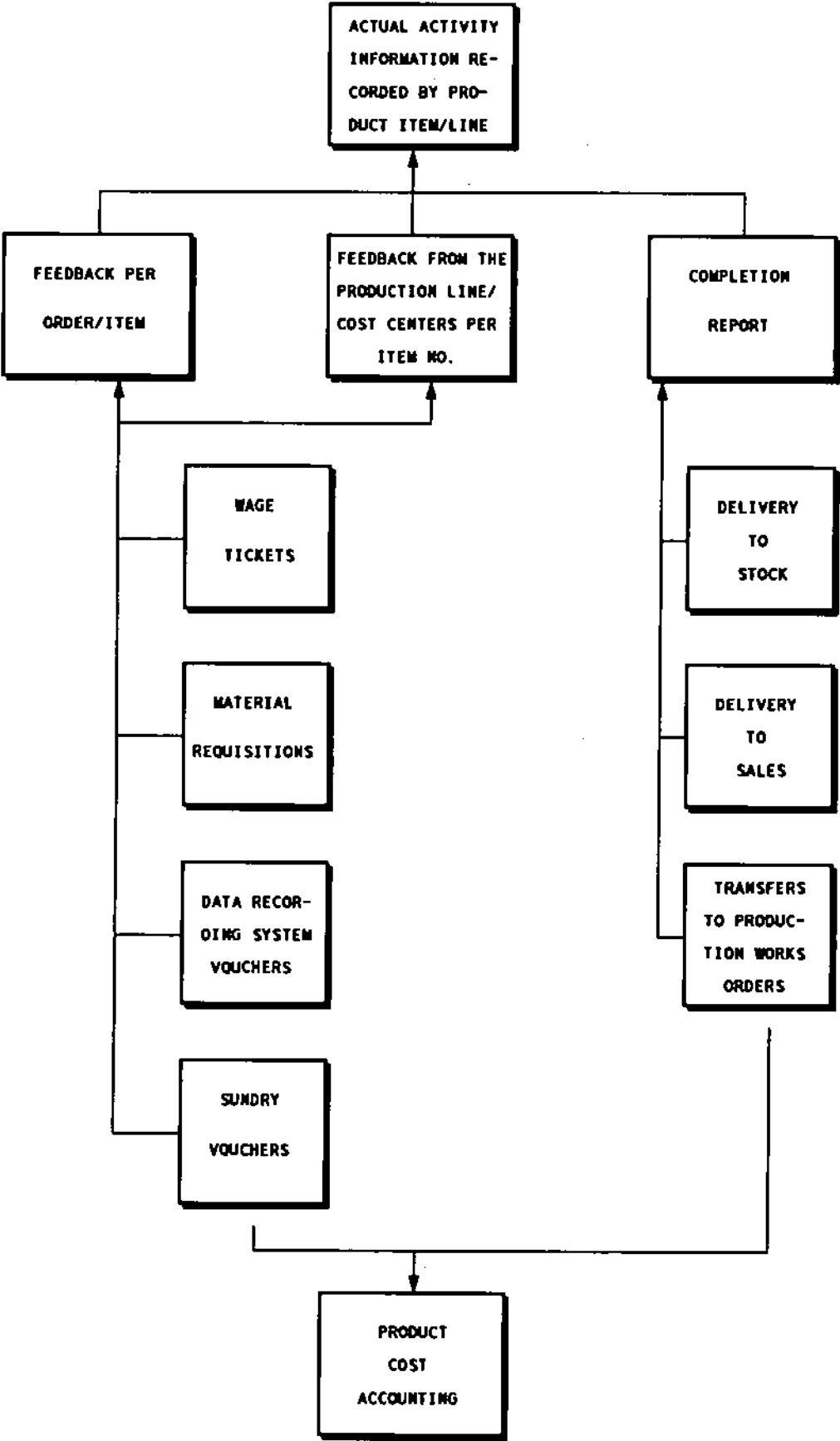


FIGURE 4.9

PROCESSING OF PRODUCT COSTING INFORMATION

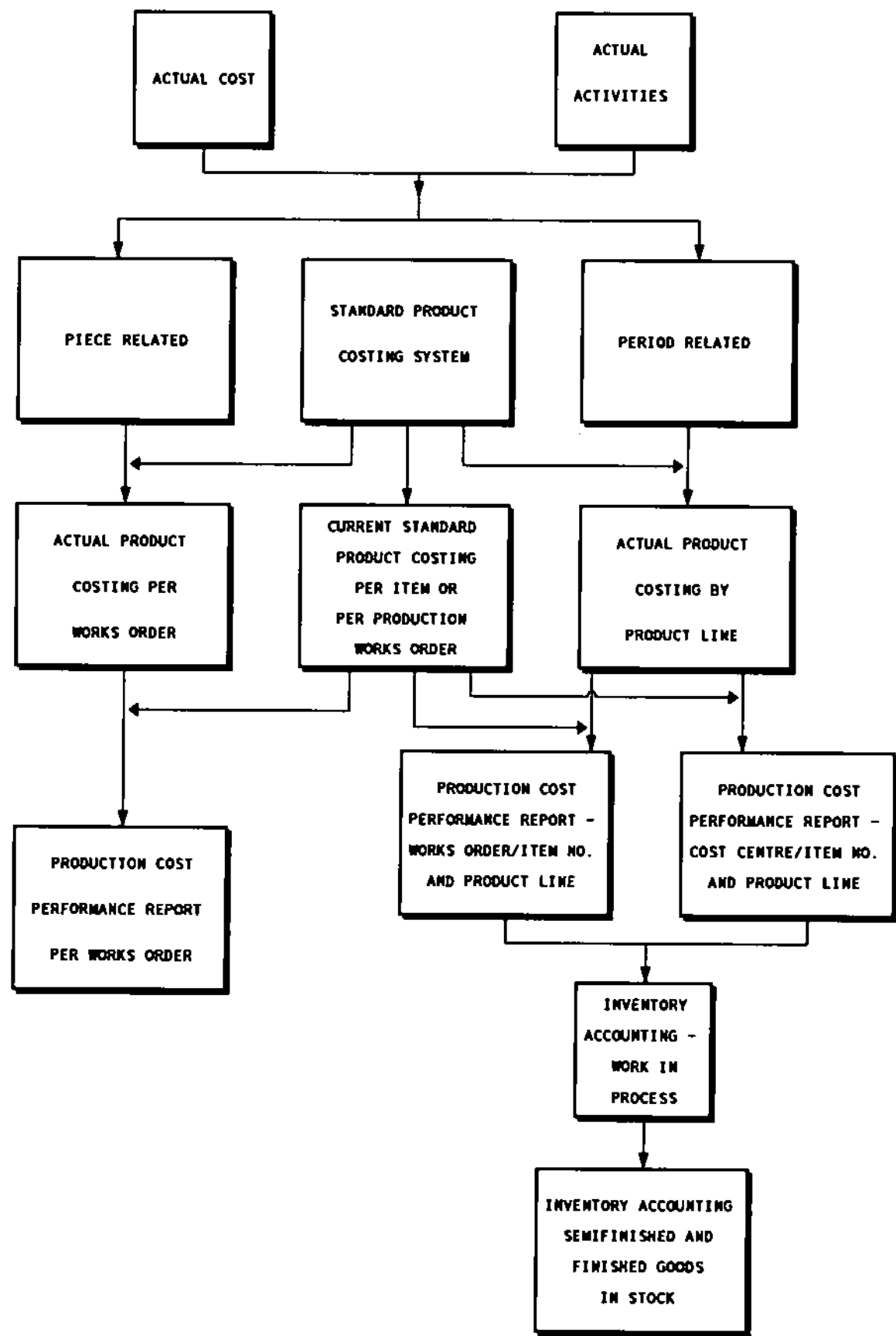
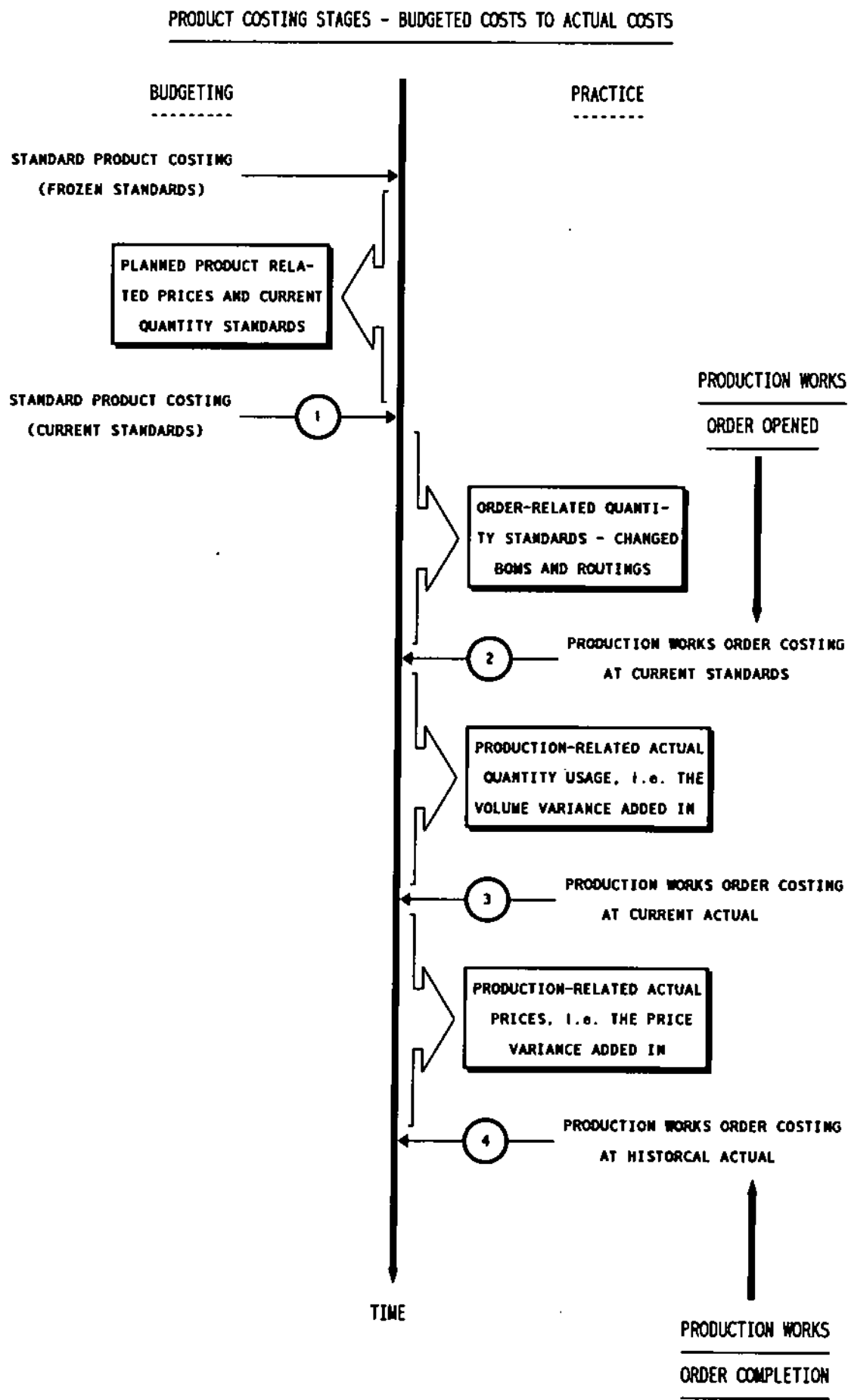


FIGURE 4.10



over the purchasing of material, then the material price variance is a controllable variance.

(Kilger, 1988, p. 707-716).

6.4. Variance analysis and allocation to products.

Figure 4.6 and Figure 4.10 above show that all variances can be allocated to products to produce current actual costing information. An option also exists where product variances are not allocated to products but brought into account during stepped recovery in contribution margin management. (Refer Chapter 5). (Kilger, 1988, p. 658 ff.).

6.5. Production inventory valuation.

This is addressed here because of the integrated philosophy followed in the Plaut ABC concept between management accounting and financial accounting. Although a costing/management information system, Plaut ABC runs on an integrated basis with the financial accounting system. The two systems are for this reason always in balance. It is in fact impossible to post in any one of the two systems with out posting in the other system as well, due to both systems sharing a single data base.

The costing system serves to value both the work-in-process account and the stock of semifinished and finished products. This valuation process is intended to serve the

FIGURE 4.11

PRODUCTION COST AUTHORISATION

LARGE STEEL CABINETS						UNITS PRODUCED : 50	
ORIGIN	DESCRIPTION	OPERATION	STANDARD UNIT QUANTITY	UNIT OF MEASURE	STANDARD PRICE	AUTHORISED QUANTITY	AUTHORISED COSTS PROPORTIONAL COST TOTAL COST
MATERIALS	SIDE AND BACK TOP		1	PIECE	R75.00	50	R3 750.00
	BOTTOM		1	PIECE	R30.00	50	R1 500.00
	DOOR		1	PIECE	R35.00	50	R1 750.00
	DOOR		2	PIECE	R45.00	100	R2 250.00
	PAINT		2.5	PIECE	R40.00	125	R2 000.00
PURCHASES	DOOR HANDLE		2	PIECE	R25.00	100	R1 750.00
	HINGE		4	PIECE	R3.00	200	R150.00
	RIVET		30	PIECE	R0.20	1 500	R10.00
CONVERSION	6003 LABOUR HRS	CUT & BEND	0.2	HOURS	R100.00	10	R400.00
	MACHINE HRS	CUT & BEND	0.4	HOURS	R30.00	20	R600.00
	6021 LABOUR HRS	ALIGN	0.2	HOURS	R22.79	10	R121.00
	SET-UP HRS	SET UP	0.1	HOURS	R48.00	5	R200.00
	MACHINE HRS	WELDING	0.1	HOURS	R47.16	5	R153.50
	6040 LABOUR HRS	FITMENT	0.4	HOURS	R45.00	20	R500.00
	6052 LABOUR HRS	PAINT	0.2	HOURS	R29.00	10	R190.00
	OVEN HOURS	BAKING	1.5	HOURS	R70.00	75	R4 500.00
	6073 INSPECT HRS	INSPECTION	0.5	HOURS	R50.00	25	R1 000.00
AUTHORISED TOTALS :					R27 164.50		R29 894.00

FIGURE 4.12

PRODUCTION WORKS ORDER PERFORMANCE REPORT

PRODUCT : A123									
PLANNED OUTPUT : 25									
ACTUAL OUTPUT : 22									
OPERATION	DESCRIPTION	QUANTITIES AND PRICES			ALTERNATE ROUTING VARIANCE	VARIANCE ANALYSIS		TOTAL VARIANCE	
		PLAN	AUTHORISED	ACTUAL		USAGE VARIANCE	PRICE VARIANCE		
010	SUBASSEMBLY 1	25 PCS	22 PCS	24 PCS	-	2 HRS	24 HRS		
	ACTUAL PRICE R12.00								
	STANDARD PRICE R11.00	R275.00	R242.00	R288.00	-	R22.00	R24.00	R46.00	
010	COST CENTRE 111	100 HRS	88 HRS	85 HRS	-	-3 HRS	85 HRS		
	STANDARD PRICE R60.00								
	PRICE VARIANCE R2	R6 000.00	R5 280.00	R5 270.00	-	- R180.00	R170.00	- R10.00	
020	COST CENTRE 114	50	44	-	-	-	-		
	STANDARD MACHINE HRS								
	STANDARD PRICE R40.00	R2 000.00	R1 760.00	-	- R1 760.00	-	-	-R1 760.00	
020	COST CENTER 118	-	-	44 HRS			44 HRS		
	STANDARD MACHINE HRS								
	STANDARD PRICE R50.00	-	-	R2 060.00	R2 200.00		- R132.00	R2 060.00	
	PRICE VARIANCE -R3.00								
TOTALS :		R8 275.00	R7 282.00	R7 626.00	R440.00	- R158.00	R62.00	R344.00	

following purposes:

- A presentation of the value added in the production process.
- Determine the changes in inventory.
- Serve as a basis for the determination of operating income in the costing system.
- Reconcile production management accounting with financial accounting.

Valuation of the work-in-process account and stock is done at standard cost with the allocation of actual variances. Figure 4.13 (Plaut seminar notes, 1991, p. 3.33-03) shows the method used to value the work-in- process account and Figure 4.14 (Plaut seminar notes, 1991, p. 3.33-04) the method used to value stock.

(Kilger, 1987, p. 305 - 389)

7. Conclusion.

It is interesting to note that the current international debate around ABC has not yet reached the stage where product costing is being considered as a separate discipline. Treating product costing as a separate discipline has the following advantages:

- Cost centre rates contain only the costs associated with the service that it supplies, this makes for good information for 'make-buy' decisions on services.
- Separate responsibilities for products work better

FIGURE 4.13

INVENTORY ACCOUNTING - WORK IN PROCESS

THE ACTUAL MANUFACTURING COST OF PRODUCTS IN PROCESS	
PRODUCTS VALUED AT : -----	
. STANDARD COSTS	
. ACTUAL VARIANCES	
CALCULATED AS FOLLOWS : -----	
OPENING BALANCE	
+ MANUFACTURING PERFORMANCE ACCOUNTING	
- ABSORPTION TO INVENTORY	
- ABSORPTION TO COST OF GOODS SOLD	
= CLOSING BALANCE	
. CONSOLIDATED BY PRODUCT LINE	
. DETERMINED WITH THE HELP OF PRODUCTION WORKS ORDER ACCOUNTING (SUMMARIZATION OF PERIOD PRODUCTION WORKS ORDER INVENTORY)	

FIGURE 4.14

INVENTORY ACCOUNTING - COMPONENTS AND PRODUCTS IN STOCK

THE ACTUAL MANUFACTURING COST OF SEMIFINISHED AND FINISHED GOODS IN STOCK

PRODUCTS VALUED AT :

- . STANDARD COSTS
- . ACTUAL VARIANCES

CALCULATED AS FOLLOWS :

- OPENING BALANCE
- + INCREASE FROM WORK IN PROCESS
- DECREASE RE-EMPLOYED COMPONENTS
- DECREASE COST OF GOODS SOLD
- SUNDRY DECREASES

= CLOSING BALANCE

- . DETERMINED BY INDIVIDUAL PRODUCT
(WITH CONSOLIDATION BY PRODUCT LINE)
- . CARRIED OUT IN INVENTORY ACCOUNTING (BREAKDOWN BY COST ELEMENTS
SIMILAR TO THAT OF PRODUCT COSTING)

product cost management in hand. This could include areas such as, redesigning the product, material substitution, alternate routings and ongoing research and development.

The value of treating products separately will become apparent later when the analysis of findings will be done.

Finally, in this chapter product costs were established that can be used to-

- make 'make-buy' decisions on semifinished goods and or operations in product manufacturing; and
- serve as an input into contribution margin management.

Together with cost centre accounting the scene is now set for contribution margin management, which uses both of these to manage profits.

Chapter 5

1. Introduction.

In this chapter the aims of and prerequisites for contribution margin management will first be discussed. This will be followed by a discussion on contribution margin planning and the types of actual information required. The chapter will be concluded with an indication of the processing procedures normally followed and the analysis of reported contribution information.

Contribution margin management is the product of cost centre accounting and product costing, since it is here that these two are pulled together in managing the profit of the organisation. Figure 5.1 (Vikas, 1991, p. 28) shows the area within the Plaut ABC concept that represents Contribution margin management.

2. The aims of Contribution margin management.

Contribution margin management aims at addressing the following:

- The accurate establishment of selling and distribution costs per invoice line item.
- The recovery of primary indirect cost centre costs that perform their activities for a product, product group, client, type of client, region, geographical area or the organisation as a whole.
- Flexible profitability reporting using both marginal and full cost information. Reporting per product, product group, client, type of client, region, geographical area or any combination of these.

(Kilger, 1988, p. 661-665).

3. Prerequisites for contribution margin management.

3.1. Introduction.

The points mentioned below are needed to effectively facilitate the operation of contribution margin management. If these prerequisites are not met, the aims of contribution margin management cannot be achieved.

3.2. Customer order master.

A system must be in place to handle customer orders and to link these with both production works orders and stock orders. Parallel coding is also done on customer master data linking the customer to the product, product line and product group that he has purchased.

3.3. Product master.

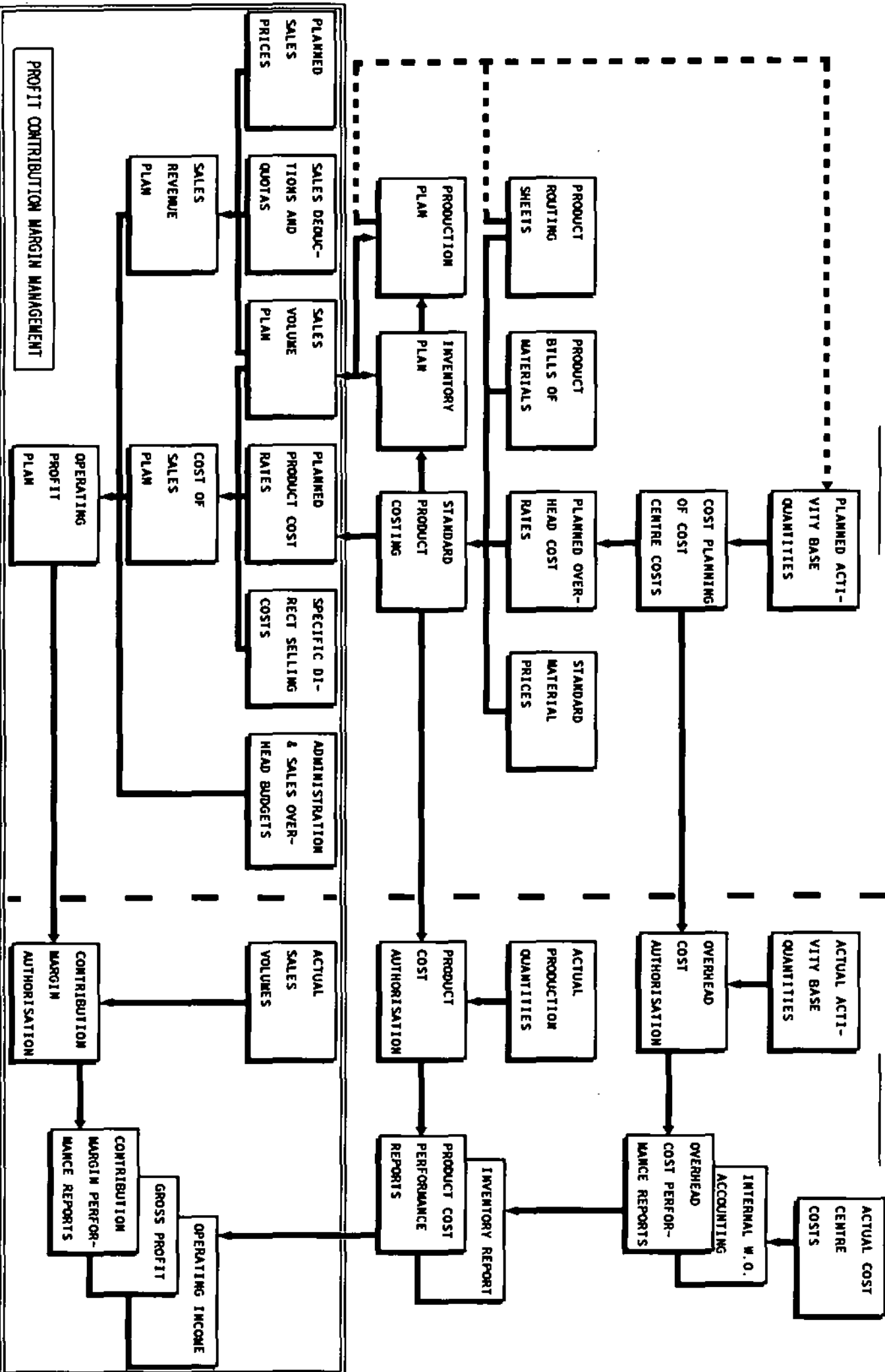
The product master contains the master data on all products. This includes -

- the product name;
- the product number;
- the product description;
- the product's unit of measure;
- parallel coding to indicate the product line; and
- the product group that each product belongs to.

FIGURE 5.1

PLANNING

CONTROL



3.4. Customer master.

Customer master data contains the customer number and the customer name and the following three groups of information:

- Master data - sales deductions:

- Discounts

- Rebates

- Bonuses

- Premiums

- Master data - special direct selling cost:

- Shipping address

- Terms of payment

- Salesman

- Rate of sales commission

- Parallel coding:

- Customer group

- Distribution channel

- Territory

(Kilger, 1987, p. 392-414).

4. The planning of contribution margins.

4.1. Introduction.

In this section the planning process used to determine contribution margin standards, to be used for the planning period, will be discussed.

These standards will later be used to determine the authorised profit once actual sales information has been received.

4.2. Planned sales quantity / Revenue plan.

The sales volume plan contains the following details:

- Customer numbers.
- Customer names.
- Product numbers.
- Product descriptions.
- The planned sales volume to each customer of each product.
- the planned sales price per unit of product.

Four customers in two sales areas are added to the model previously developed. With this information the sales volume plan for the three products are derived in Figure 5.2.

4.3. Standard sales deductions / Special direct selling cost.

Standards for sales deductions and a set structure for these deductions are established per customer or any other parameter that combines generic deductions and or deduction structures. The following is an example of a sales revenue structure that contains standard sales deductions and special direct selling costs/quotas.

	Gross sales revenue
-	Sales deductions
-	Rebates
-	Discounts
=	Net sales revenue 1.
-	Special direct selling costs
-	Outbound freight
-	Packaging
-	Insurance (Transport, export and currency exchange risk)
-	Agent's commission
=	Net sales revenue 2.

Figure 5.3 shows such a structure for Customer A who purchases Product A (the steel cabinets) and Product B (hand-held tool boxes) from the company.

4.4. Production costs of sales.

Figure 5.3 also shows the planned production costs of sales in the overall picture for contribution margin management. The standard product costs are inputs received from product costing which was discussed in the previous chapter.

(Kilger, 1987, p. 394-414).

FIGURE 5.2

SALES VOLUME PLAN FOR THE THREE PRODUCTS IN THE MODEL

PRODUCTS:	AREA 1:			AREA 2:	PRODUCT TOTALS
	CUSTOMER			CUSTOMER	
	A	B	C	D	
PRODUCT A - STEEL CABINETS	100	-	300	100	500
PRODUCT B - TOOLBOXES	500	-	700	300	1500
PRODUCT C - EYE-LEVEL OVEN	-	250	-	-	250

FIGURE 5.3

PRODUCT PROFIT CONTRIBUTION PLANNING FOR CUSTOMER A AND PRODUCTS A AND B IN THE MODEL

CUSTOMER A	PRODUCT A	PRODUCT B
	QTY 100	QTY 500
GROSS REVENUE	95 000.00	75 000.00
DEDUCTIONS:		
- DISCOUNTS 3 %	2 850.00	2 250.00
NET SALES REVENUE 1	92 150.00	72 750.00
SPECIAL DIRECT SELLING COSTS:		
- FREIGHT (PROD. A R3 / PROD. B R1)	300.00	500.00
- INSURANCE 7 %	6 450.50	5 092.50
- COMMISSION 5 %	4 607.50	3 637.50
NET SALES REVENUE 2	80 792.00	63 520.00
PRODUCTION COST (FIG. 4.2 & 4.3)	59 788.00	57 540.00
GROSS MARGIN	21 004.00	5 980.00
STORAGE (COST CENTRE 6012, FIG. 3.8)	5 000.00	1 800.00
PRODUCT RESULTS	16 004.00	4 180.00
	20 184.00	
SELLING OVERHEAD (COST CENTRE 6011, FIG. 3.8)	7 000.00	
SALES OPERATING RESULT	13 184.00	
COMPANY OVERHEAD (COST CENTRE 6001, FIG. 3.8)	8 000.00	
OPERATING RESULT	5 184.00	

4.5. Period related operating overhead costs.

Figure 5.3 further gives an indication of how period related overhead costs are brought into profit management. These overheads include costs such as marketing, shipping, selling, sales administration and company administration overheads. Overheads are charged at standard activity rates from the costs centres. These costs being the costs from primary direct cost centres such as storage and distribution from cost centre # 6012 (Figure 3.8). Also primary indirect cost centres such as the Sales force cost centre # 6011 (Figure 3.8) and the Managing Director's cost centre # 6001 (Figure 3.8). Refer also Figure 3.18 in this regard.

4.6. Product profit contribution planning.

Finally, Figure 5.3 gives the complete profit contribution plan for the model. Note that this is called the period related profit contribution plan. The output from this report is the planned operating income. It is also possible to extract a sales related profit contribution plan from the software. An example of the latter is given in Figure 5.4. The sales related profit contribution plan can combine reports to give a product line profit contribution plan or product group profit contribution plan.

Figure 5.5 shows an example of a more comprehensive profit contribution plan. It does, however, have a more generic

FIGURE 5.4

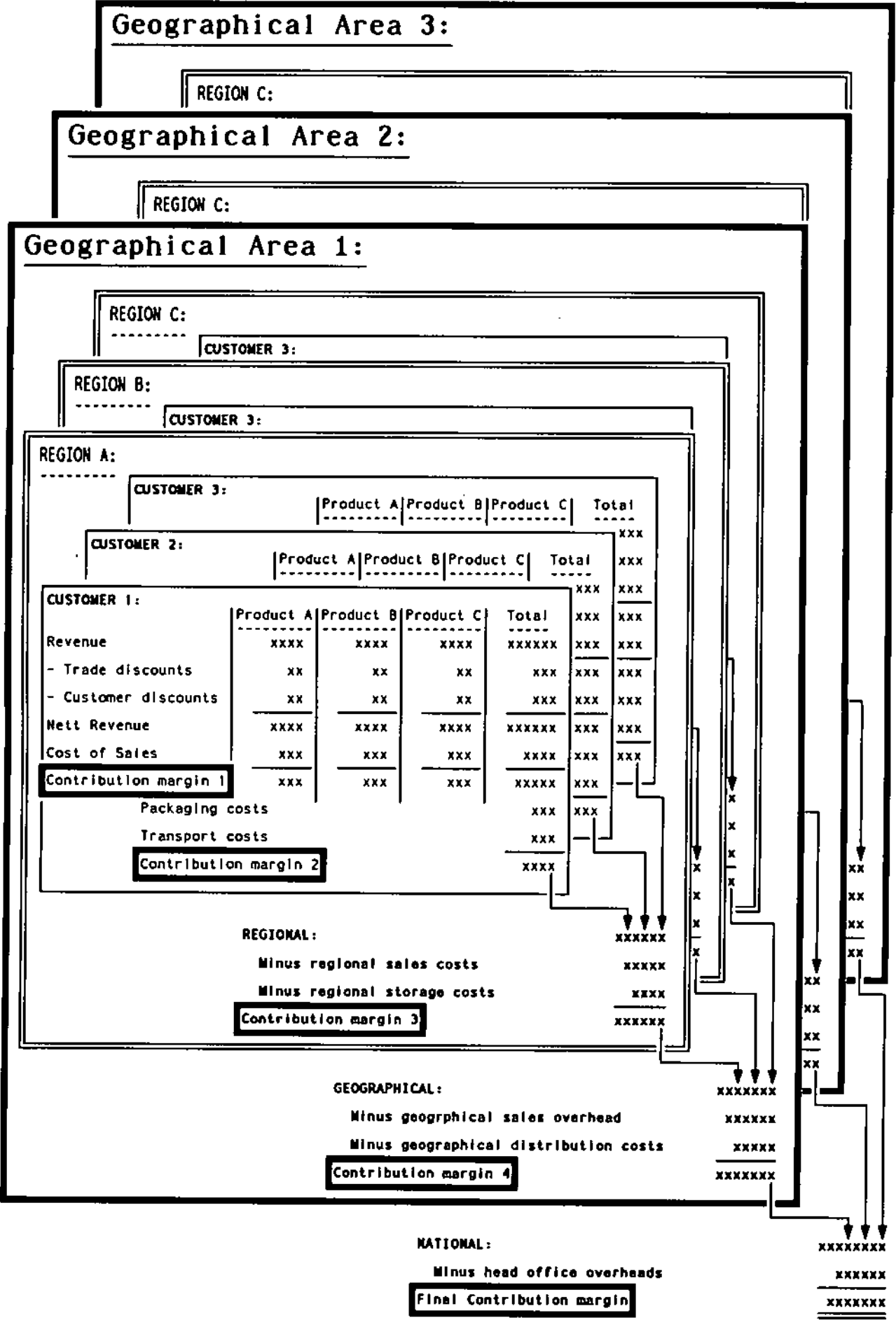
PROFIT CONTRIBUTION MARGIN PLANNING REPORT - SALES RELATED

PRODUCT GROUP : SHEET METAL PRODUCTS					
MARKET : DOMESTIC					
PLANNING PERIOD : APR - MRCH 1992					
PRODUCTS	PLANNED SALES QUANTITIES	NET PLAN- NED SALES REVENUE	CONTRIBUTION MARGIN		
			RAND	PER UNIT	%

PRODUCT A:					
LARGE STEEL CABINETS	500	R 475 000	R 176 060	R 352.12	37.07%
SALES PRICE R 950					
PRODUCT B:					
HAND-HELD TOOL BOXES	1500	R 225 000	R 52 380	R 34.92	23.28%
SALES PRICE R 150					
PRODUCT C:					
EYE-LEVEL-OVEN CAGE	250	R 106 250	R 46 642	R 186.57	43.90%
SALES PRICE R 425					
PRODUCT GROUP TOTAL CONTRIBUTION :			R 806 250		

FIGURE 5.5

PRODUCT PROFIT PLANNING - A GENERIC EXAMPLE



structure and do not contain any real values from the model.

(Kilger, 1987, 420-426).

5. Actual data needed for contribution margin management.

5.1. Introduction.

The actual information is divided into actual revenue information and actual costs. These serve as inputs into the authorised profit contribution report.

5.2. Actual revenue.

The actual revenue information that is taken over into the costing system is illustrated in Figure 5.6.

5.3. Actual cost of sales.

The cost information that is taken over into the costing system is shown in Figure 5.7. Note the integration of the costing system and the general ledger.

(Kilger, 1987, p. 431-444).

6. Processing of information.

6.1. Introduction.

Processing of information can take place at any stage when all the above is in place. If a computerised invoicing system is used, such as forms part of the integrated Systems Application Programs (SAP) software package (refer

Appendix 3), authorised contributions and authorised operating income are available moment by moment on-line. Actual costs can be available in the same way if the total SAP software package is used.

(Kilger, 1987, p. 449-451).

6.2. Contribution margin authorisation.

Using the actual sales quantities and the standards arrived at during the contribution margin profit planning phase the authorised contribution margins are arrived at as well as the authorised operating income. An example of such a contribution margin authorisation report is given in Figure 5.8 for the model so far developed.

6.3. Contribution margin performance report.

The contribution margin performance report shows the authorised contribution information compared to the actual information. An example of this can be seen in Figure 5.9. This report can be generated with full and/or marginal costs.

(Kilger, 1987, p. 420-444).

6.4. Variance analysis.

The profit contribution margin report highlights three variances, a price variance, a volume variance and a mix variance depending on the type of report being used.

FIGURE 5.6

ACTUAL SALES REVENUE INFORMATION INCLUDED IN CONTRIBUTION MARGIN MANAGEMENT

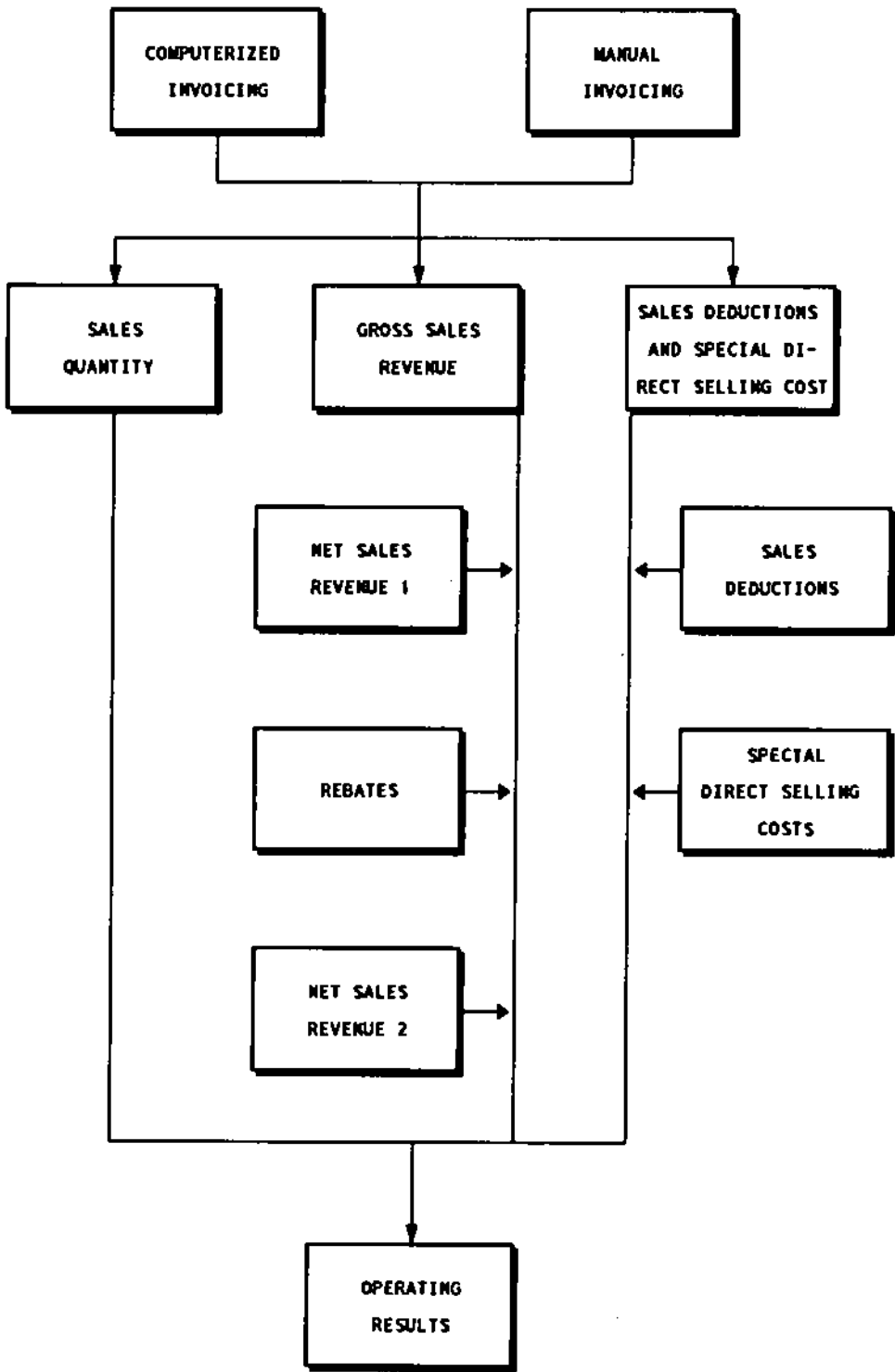
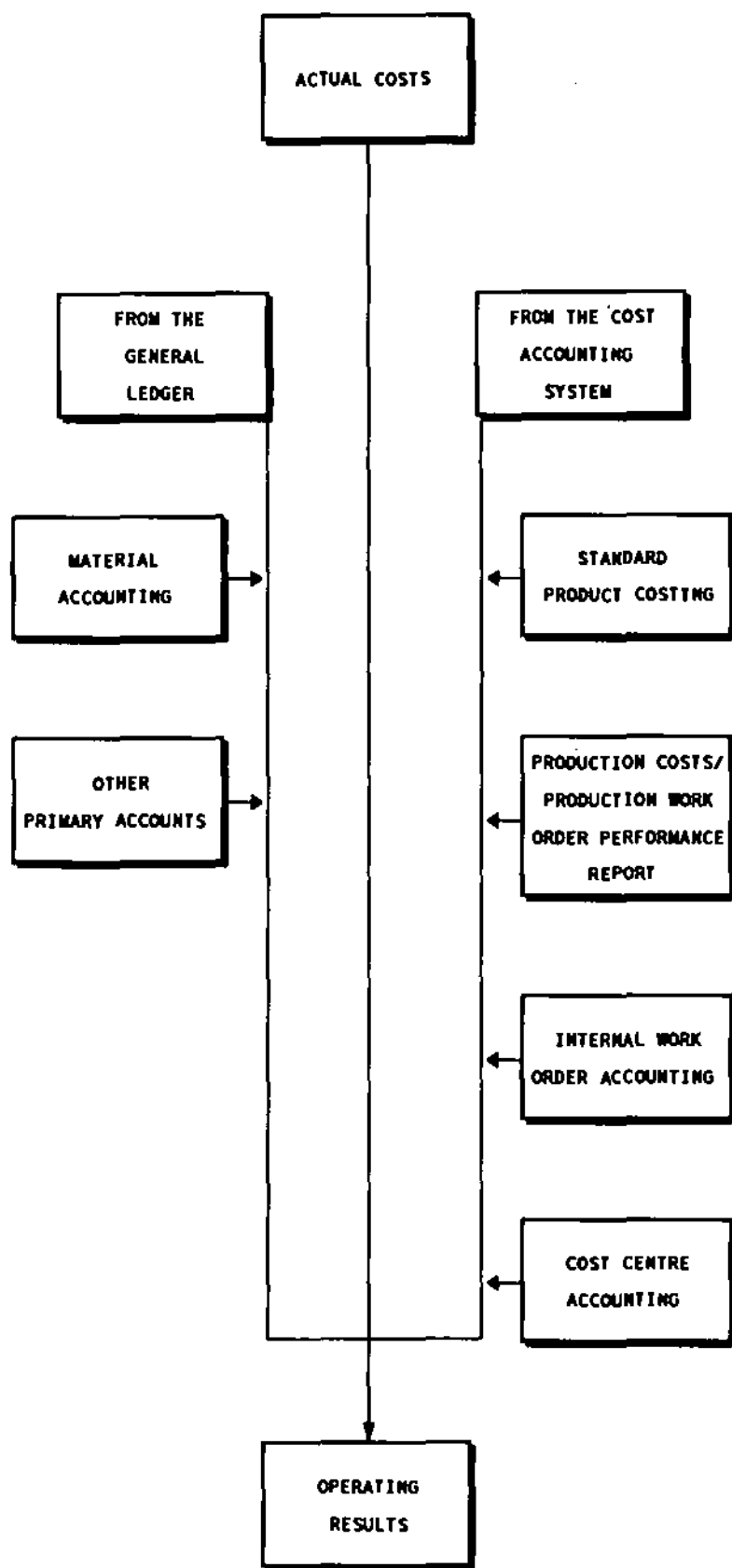


FIGURE 5.7

ACTUAL COSTS OF SALES INCLUDED IN CONTRIBUTION MARGIN MANAGEMENT



Variances are given for product level and for product line or product group level. At the product level the following variances are isolated.

Total variance = Actual contribution margin of the product - Planned contribution margin of the product.

Price variance = Actual contribution margin of the product - Authorised contribution margin of the product.

Volume variance = Authorised contribution margin of the product - Planned contribution margin of the product.

At the product line/group level the following variances are isolated.

Total variance = Total actual contribution margin of the product line/group - Total planned contribution margin of the product line/group.

Price variance = Total actual contribution margin of the product line/group - Total authorised contribution margin of the product line/group using the original planned quantities of the individual products times actual contribution margins.

FIGURE 5.8

PRODUCT CONTRIBUTION MARGIN AUTHORISATION FOR CUSTOMER A AND PRODUCTS A AND B IN THE MODEL

CUSTOMER A	PRODUCT A	PRODUCT B
ACTUAL SALES QUANTITIES -	90	520
GROSS REVENUE	85 500.00	78 000.00
DEDUCTIONS:		
- DISCOUNTS 3 %	2 565.00	2 340.00
NET SALES REVENUE 1	82 935.00	75 660.00
SPECIAL DIRECT SELLING COSTS:		
- FREIGHT (PROD. A R3 / PROD. B R1)	270.00	520.00
- INSURANCE 7 %	5 805.45	5 296.20
- COMMISSION 5 %	4 146.75	3 783.00
NET SALES REVENUE 2	72 712.80	66 060.80
PRODUCTION COST (FIG. 4.2 & 4.3)	53 809.20	59 841.60
GROSS MARGIN	18 903.60	6 219.20
STORAGE (COST CENTRE 6012, FIG. 3.8)	5 000.00	1 800.00
PRODUCT RESULTS	13 903.60	4 419.20
	18 322.80	
SELLING OVERHEAD (COST CENTRE 6011, FIG. 3.8)	7 000.00	
SALES OPERATING RESULT	11 322.80	
COMPANY OVERHEAD (COST CENTRE 6001, FIG. 3.8)	8 000.00	
OPERATING RESULT	3 322.80	

FIGURE 5.9

PRODUCT CONTRIBUTION MARGIN PERFORMANCE REPORT FOR CUSTOMER A AND PRODUCTS A AND B IN THE MODEL

CUSTOMER A	PRODUCT A		PRODUCT B	
	AUTHORISED	ACTUAL	AUTHORISED	ACTUAL
QUANTITIES X PRICES	90 X R950	90 X R970	520 X R150	520 X R 145
GROSS REVENUE	85 500.00	87 300.00	78 000.00	75 400.00
DEDUCTIONS:				
- DISCOUNTS 3%	2 565.00	-	2 340.00	4 524.00
NET SALES REVENUE 1	82 935.00	87 300.00	75 660.00	70 876.00
SPEC. DIRECT SELL. COSTS:				
- FREIGHT	270.00	270.00	520.00	520.00
- INSURANCE 7%	5 805.45	5 296.20	5 296.20	5 296.20
- COMMISSIONS 5%	4 146.75	4 146.75	3 783.00	3 783.00
NET SALES REVENUE 2	72 712.80	77 077.80	66 060.80	61 276.80
PRODUCTION COST	53 809.20	54 600.00	59 841.60	49 300.00
GROSS MARGIN	18 903.60	22 477.80	6 219.20	11 976.80
STORAGE	5 000.00	5 000.00	1 800.00	1 800.00
PRODUCT RESULTS	13 903.60	17 477.80	4 419.20	10 176.80
			18 322.80	27 654.60
SELLING OVERHEAD			7 000.00	12 000.00
SALES OPERATING RESULT			11 322.80	15 654.60
COMPANY OVERHEAD			8 000.00	8 000.00
OPERATING RESULT			3 322.80	7 654.60

Volume variance = Total authorised contribution margin of the product line/group
 - Total planned contribution margin of the product line/group.

Mix variance = Total authorised contribution margin of the product line/group using the original planned quantities of the individual products times actual contribution margins - the authorised contribution margin of the product group using actual sales quantities.

The contribution margin authorisation report are used for variance analysis. Variance reporting would be available with the same line item level of detail as can be seen in Figure 5.9.

(Kilger, 1988, p. 713)

7. Conclusion.

This chapter concludes the discussion on the three major theoretical concepts underlying Plaut ABC. It is important to note that the contribution margin structure as presented in this chapter is often considered as the ideal for managing profit. One must however keep in mind that if the foundation on which this structure is built is shaky, then the structure itself does not have much use.

This means that product costing and cost centre accounting must ensure authentic and decision relevant contribution information through unerring cost allocation. The latter being the area in which CMA failed dismally. It is exactly in this domain that the Plaut ABC concept stakes a major claim as a management accounting method that ensures relevance.

Having concluded the basic Plaut ABC theory, the next chapter will deal with the subject of operating results analysis.

Chapter 6

1. Introduction.

In this chapter Operating results analysis will be discussed. The aims of operating results analysis and the integration of the general ledger and the costing system will first be discussed. This will be followed by a presentation of the two methods by which an organisations operating result can be obtained through the management accounting software. The chapter is concluded with an indication of how the operating result from the management accounting system is reconciled with the financial result from the income statement.

Figure 6.1 (Vikas, 1991, p. 28) shows the field of application for operating results analysis.

2. The aims of operating results analysis.

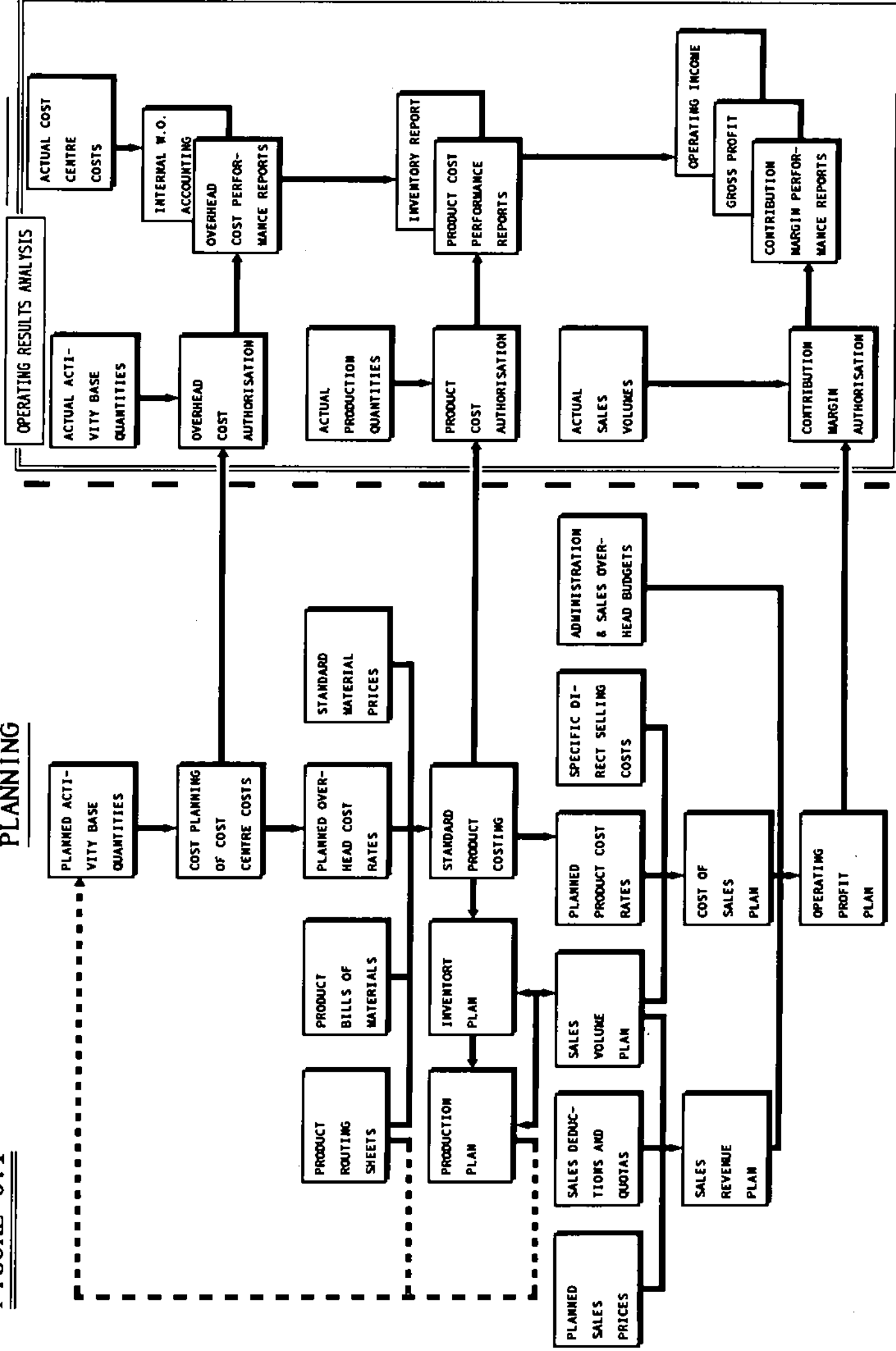
Operating results analysis aims at producing operating results information in a format unlike that of financial accounting. The costing system supplies -

- a lay-out of the organisation's operating income that relates better to management decision making, such as strategic decisions on services, products, customers and markets; and
- more detailed information than the aggregate information produced by the financial system.

FIGURE 6.1

PLANNING

CONTROL



3. Integrated software.

This management accounting operating result is, however, within the integrated approach always equal to the financial result. This is due to the integrated approach taken in the Plaut ABC concept to management accounting and financial accounting.

Two approaches can be followed in the costing software to produce the management accounting operating result. Firstly, the cost of sales method and secondly, the total cost method.

4. Cost of sales method.

The cost of sales method follows the following broad approach to determining operating income:

$$\begin{array}{rcl}
 & \text{Sales revenue} & \\
 - & \text{Cost of sales} & \\
 \hline
 = & \text{Operating income} &
 \end{array}$$

Figure 6.2 shows a more detailed breakdown of this approach and the operating result that it produces. The model previously developed is not comprehensive enough to facilitate this report. Another example is therefore used.

5. Total cost method.

The total cost method follows the following broad approach to determining the operating income:

FIGURE 6.2**RECONCILIATION OF OPERATING INCOME - THE COST OF SALES METHOD**

GROSS SALES REVENUE	R 5 000 000.00
- REBATES	R 500 000.00
NET SALES REVENUE 1	R 4 500 000.00
- PACKAGING	R 20 000.00
- COMMISSION	R 750 000.00
- DISCOUNTS / PREMIUMS	R 75 000.00
- FREIGHT / INSURANCE	R 100 000.00
NET SALES REVENUE 2	R 3 555 000.00
+ INVENTORY CHANGE SEMIFINISHED & FINISHED GOODS	-
+ INVENTORY CHANGE WORK-IN-PROCESS	-
+ INVENTORY CHANGE INTERNAL WORKS ORDERS	-
+ CAPITALIZED INTERNAL SERVICES	-
TOTAL OPERATING REVENUE	
- STANDARD PROPORTIONAL PRODUCT COST OF SALES	R 2 000 000.00
STANDARD CONTRIBUTION MARGIN	R 1 555 000.00
- STANDARD FIXED PRODUCT COST OF SALES	R 600 000.00
STANDARD GROSS PROFIT	R 955 000.00
- PRODUCTION COST VARIANCES	R 45 000.00
ACTUAL GROSS MARGIN	R 910 000.00
- DIRECT MATERIAL	-
- WAGES AND FRINGE BENEFITS	-
- SALARIES AND FRINGE BENEFITS	-
- INDIRECT MATERIAL	-
- PURCHASED SERVICES	-
- RESEARCH AND DEVELOPMENT COSTS	R 50 000.00
- ADMIN OVERHEAD COSTS	R 210 000.00
- SELLING OVERHEAD COSTS	R 350 000.00
OPERATING RESULT	R 300 000.00
+/- SALES REVENUE ABSORPTION VARIANCE	R 80 000.00
+/- BALANCE COST ABSORPTION WORK ORDERS	R 150 000.00
+/- ROUNDING DIFFERENCES	-
OPERATING INCOME	R 70 000.00

	Sales revenue
±	Inventory changes
+	Capitalised cost
=	Total operating revenue
-	Total operating cost
=	Operating income

Figure 6.3 shows a more detailed breakdown of this approach and the operating result that it produces, compared to the cost of sales approach. This is also not an example that utilises information from the model.

6. Reconciliation with the financial result.

The reconciliation of the management accounting operating result with the financial result (profit or loss) are achieved as follows.

	Management operating income
±	Operating cost balance
=	Financial operating income
±	Extraordinary expense/revenue
±	Non-current period items
=	Financial result (Profit or loss)

FIGURE 6.3

RECONCILIATION OF OPERATING INCOME - A COMPARISON OF THE TOTAL COST AND THE COST OF SALES METHOD

	COST OF SALES METHOD	TOTAL COST METHOD
GROSS SALES REVENUE	R 5 000 000.00	R 5 000 000.00
- REBATES	R 500 000.00	R 400 000.00
NET SALES REVENUE 1	R 4 500 000.00	R 4 600 000.00
- PACKAGING	R 20 000.00	R 40 000.00
- COMMISSION	R 750 000.00	R 250 000.00
- DISCOUNTS / PREMIUMS	R 75 000.00	R 95 000.00
- FREIGHT / INSURANCE	R 100 000.00	R 110 000.00
NET SALES REVENUE 2	R 3 555 000.00	R 4 105 000.00
+ INVENTORY CHANGE SEMIFINISHED & FINISHED GOODS	-	R 200 000.00
+ INVENTORY CHANGE WORK-IN-PROCESS	-	R 30 000.00
+ INVENTORY CHANGE INTERNAL WORKS ORDERS	-	R 10 000.00
+ CAPITALIZED INTERNAL SERVICES	-	R 60 000.00
TOTAL OPERATING REVENUE	-	R 3 805 000.00
- STANDARD PROPORTIONAL PRODUCT COST OF SALES	R 2 000 000.00	-
STANDARD CONTRIBUTION MARGIN	R 1 555 000.00	-
- STANDARD FIXED PRODUCT COST OF SALES	R 600 000.00	-
STANDARD GROSS PROFIT	R 955 000.00	-
- PRODUCTION COST VARIANCES	R 45 000.00	-
ACTUAL GROSS MARGIN	R 910 000.00	-
- DIRECT MATERIAL	-	R 1 000 000.00
- WAGES AND FRINGE BENEFITS	-	R 800 000.00
- SALARIES AND FRINGE BENEFITS	-	R 350 000.00
- INDIRECT MATERIAL	-	R 100 000.00
- PURCHASED SERVICES	-	R 1 485 000.00
- RESEARCH AND DEVELOPMENT COSTS	R 50 000.00	-
- ADMIN OVERHEAD COSTS	R 210 000.00	-
- SELLING OVERHEAD COSTS	R 350 000.00	-
OPERATING RESULT	R 300 000.00	-
+/- SALES REVENUE ABSORPTION VARIANCE	R 80 000.00	-
+/- BALANCE COST ABSORPTION WORK ORDERS	R 150 000.00	-
+/- ROUNDING DIFFERENCES	-	-
OPERATING INCOME	R 70 000.00	R 70 000.00

(Kilger, 1987, p. 452-474).

7. Conclusion.

In this chapter the theory on the analytical tool that enables the analysis of operating results was discussed. The place of this tool in the whole concept is one of an overall nature.

Where the previous three chapters dealt with the fundamental theory, this chapter dealt more with the application of a tool that utilises the information from the other three chapters. An important factor mentioned in this chapter was that of the integrated nature of the management accounting system and the financial accounting system. This is due to the fact that in practice, where separate systems are used, the two systems often produce separate and conflicting results. Within the Plaut ABC concept the integrated approach results in consistent and reliable information. The credibility of the information from any one of the systems are never suspect and conflicting results are not produced by the two systems.

In the next chapter, the final consideration on Plaut ABC will be discussed.

Chapter 7

1. Introduction.

This chapter will contain an exposition on the theory of cost and profit simulation within the Plaut ABC concept.

The objectives of cost and profit simulation will first be discussed. The prerequisites for simulation will follow in paragraph 3. The chapter will be concluded by a detailed explanation of the steps in the simulation process.

Figure 7.1 (Vikas, 1991, p. 28) shows the area of application of cost and profit simulation. This includes the whole of the planning scope discussed previously, cost centre accounting, product costing and contribution margin management.

2. Objectives.

Cost and profit simulation aims at providing a flexible tool to enable the execution of 'what if' analysis in any one area of the organisation or in the organisation as a whole. 'What if' analysis can cover all three main areas of decision making in an organisation:

- Operational decisions - relating to efficiencies.
- Middle management decisions - relating to effectiveness.
- Top management decisions - relating to strategic issues.

3. Prerequisites.

The information variables required to support simulation can be divided into four groups:

Quantities

- Sales quantities
- Production quantities
- Inventories

Standard usages

- Bills of material
- Routings
- Technical data (e.g. kg's, litres, etc.).

Prices

- Sales prices
- Material
- Personnel
- Sundry (e.g. Energy).

Values

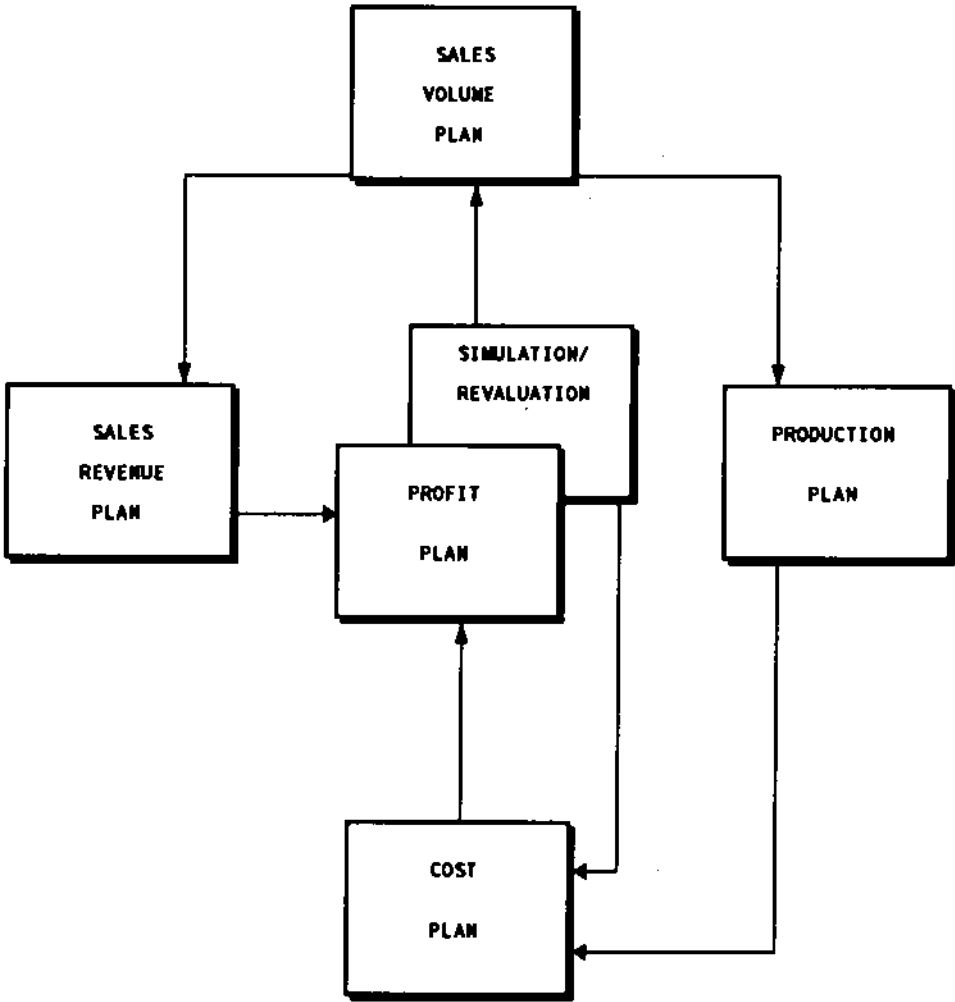
- Sales revenue
- Direct costs
- Overhead costs

4. Execution.

Figure 7.2 shows the main areas of the business that are involved in the execution of the planning simulation. The simulation /revaluation starts off by updating the cost plan and the sales

FIGURE 7.2

PLANNING SIMULATION EXECUTION



volume plan with the new information. The changes to the sales volume plan are converted into inputs into the production plan and the sales revenue plan. Changes to the production plan again impacts on the cost plan. The whole chain of events culminates in the new profit plan when the changes to the sales revenue plan and the cost plan are brought into the calculation.

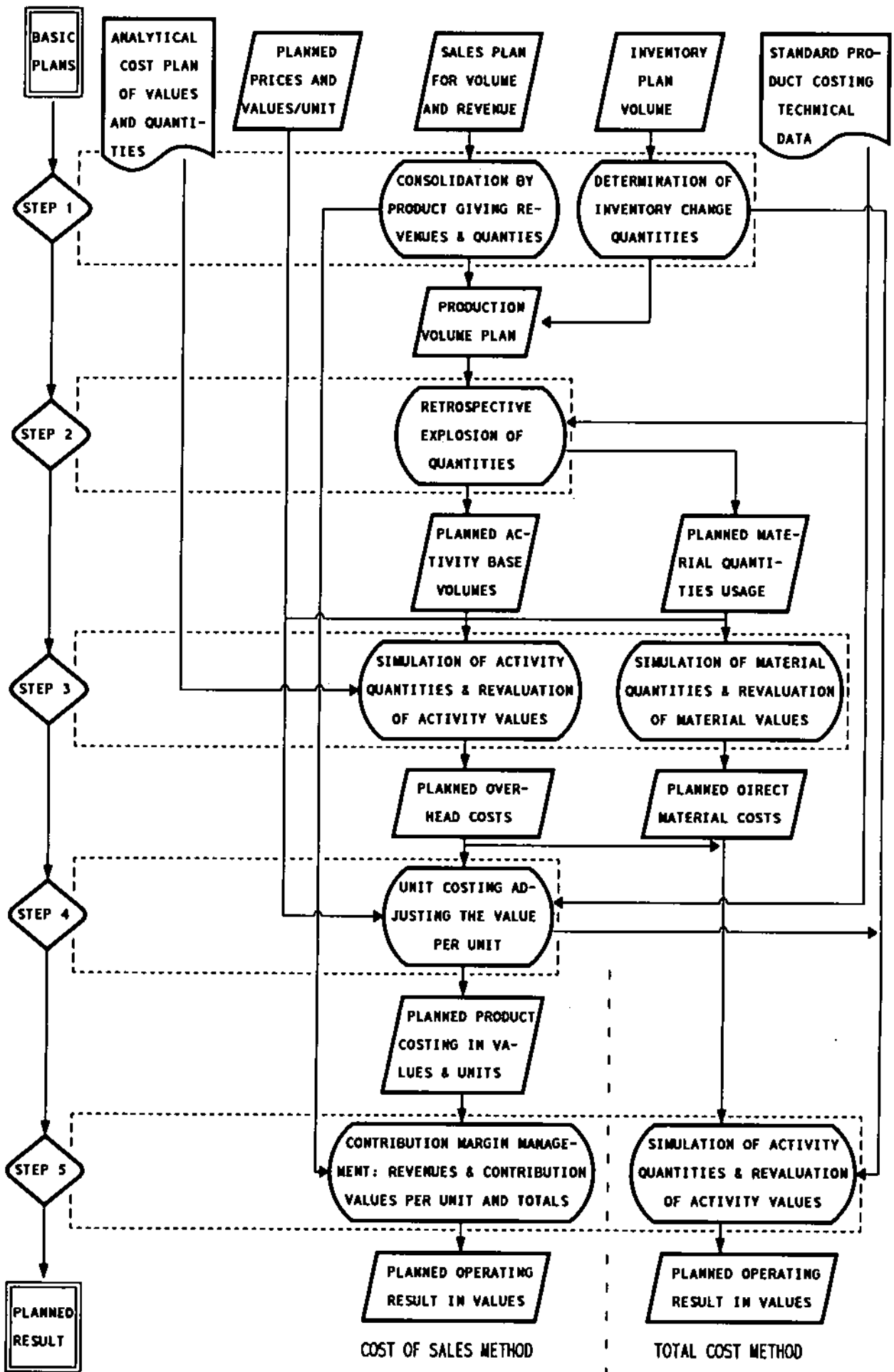
A more detailed flow chart of the simulation process is shown in Figure 7.3. The tasks performed by the software are indicated by the rounded rectangles. The rest of the shapes indicate the planned data used for the calculations. Any of the information not indicated in the rounded rectangles can be changed to determine the impact of a 'what if' scenario. These fields can also be used as output fields. For example, changing the basic plan for the number of products to be sold will impact on the activity base volumes needed for the planning period - between steps 2 and 3.

Also note the following about the simulation process indicated in Figure 7.3:

- The basic plans are arrived at during cost centre planning, product cost planning and profit contribution margin planning.
- The retrospective explosion of quantities in step 2 is achieved by using information from standard product costing, namely the bills of material and the routing sheets.
- the impact of 'what if' scenarios on overhead costs are also accounted for. This relates, amongst other things,

FIGURE 7.3

PLANNING SIMULATION FLOW CHART



to the principle of 'non-measurable' activities discussed in the chapter on cost centre accounting.

- it is possible to obtain simulated results for both the cost of sales and the total cost approach to determining the organisations operating income.

(Männel, 1988, p.17). (Vikas, 1991, p.29).

5. Conclusion.

This chapter concludes the discussion on Plaut ABC theory. It should be clear from the discussion in this and the preceding four chapters that Plaut ABC is a comprehensive approach to management accounting.

It utilises quite a complex version of ABC, in cost centre accounting, with some unique features for cost control such as the 'non-measurable' concept. It will be interesting to see how effective this principle is able to control overhead costs in practice.

Plaut ABC also has the distinctive characteristic in that it treats product costing as a separate discipline. The analysis will also shed some light on whether this practice is worthwhile, given the resources needed to facilitate it.

Finally, contribution margin management affords the theoretically ideal for profit management. How good this stands up to a volatile environment where mix, prices, discounts and commission change will be revealed in Chapters 10 and 11.

Chapter 8

1. Introduction.

This chapter will serve as a backdrop to the chapters that follow. The purpose of this chapter is twofold.

To identify those parameters that should be used to measure the relevance of a management accounting method. The following will also be highlighted for each parameter:

- The reason for inclusion.
- The current market standard for each parameter against which the Plaut ABC concept will be measured.

The parameters for relevance and their current standards will be highlighted from contemporary management accounting literature. The current debate in the international management accounting domain surrounding Activity Based Costing in general and the need or not of re-looking at CMA has supplied ample information.

Secondly, the questionnaire will be discussed in detail. In this section the following will be highlighted:

- The questions that were used to obtain information on each parameter.
- An indication on how the market standards were embodied in the questionnaire.

2. The parameters for relevance.

2.1. Profitability.

Profitability could quite easily be considered a dubious

choice as a parameter. Bromwich and Bhimani (1989) Management Accounting : Evolution not Revolution' in their response to Prof. Kaplan's 'Relevance Lost : The rise and fall of management accounting' stated that only an increase in profitability from the introduction of ABC would tip the scales in its favour. Sheridan (1990) had the following to say about this defense of CMA. 'The authors cautiously concede that the case for the prosecution has some merits but is not proven by the evidence. If only life were so simple that one could relate the use of activity based costing to profitability!'

Due to the fact that this research report will only be focused on companies that have changed from a CMA method to Plaut ABC, profitability is included as a parameter. A unique opportunity therefore presents itself in that the impact of, in this instance, Plaut ABC on profitability could be determined. A positive rating here would almost surely give Plaut ABC an edge on any existing management accounting method. Keeping in mind that the effectiveness of the other eight parameters is all in some way expressed in profitability figures.

- The current market standard for profitability.

This is represented by no change in the status quo. CMA results in maintaining the existing level of profitability.

2.2. Timeliness.

Timeliness refers to the availability of information, both during day to day operations and formal reports after periodic processing of financial information. In this regard Kaplan (1987) identified timeliness as one of the mayor breakdowns in existing management accounting systems. Refer also to his article (Kaplan, 1990) and Cooper and Kaplan's article (1988). Due to the importance of timely information for control and decision-making in organisations, this parameter is included.

- The current market standards for timeliness.

Kaplan (1987) states that currently 'there seems to be a general accounting rule that any accounting report for a period will appear just before the middle of the subsequent period'. This implies a 15-day period after month close for monthly reports to be produced. Any improvement on this would imply a higher degree of relevance.

2.3. Cost management.

This is probably the parameter that will be listed by all and sundry when approached to list a parameter against which to measure a management accounting method. Purely by definition of one of the primary aims of a management accounting system (Horngren and Foster, 1987, p.2) one would have to include cost management as a parameter.

- The current standard for cost control in the market.

Kaplan (1990) points out that current systems supply too aggregate information too late for effective control. The aggregation leading to poor product cost control. The absence of cost rates for activities/services makes for poor information to use for make-buy decisions. Overhead costs are normally considered fixed costs (Cooper and Kaplan, 1988) which indicates a severe breakdown in controlling these costs.

2.4. Reporting emphasis.

This parameter aims to determine whether a management accounting method has broken out of the dictates of financial reporting (Porter and Akers, 1987; Cooper and Kaplan, 1988; Dugdale, 1990b; Bromwich and Bhimani, 1989) or whether it is still being held captive.

The rationale being that what all levels of management should be getting from their information system should be what they need for decision making, planning and control. There is little usefulness for management in the aggregate information supplied by the financial system, enkindled by the advent of outside capital sources such as shareholders and large capital suppliers. The reporting emphasis of a management accounting method should rather be that of information for strategic, managerial and operational decision-making, planning and control. That is, first supply the foundation that supports the efficient and

effective making of (more) profit and not the reporting of profits per se. Reporting emphasis is therefore included as a parameter for relevance.

- Current standard in the market for reporting emphasis.

The current market standard for reporting is short term profit reporting driven with too little detail. The general reporting emphasis that prevails is a financial one. (Kaplan, 1987, p.195).

2.5. Decision relevance.

A parameter closely linked to the one just above. Vatter (1950, p. 506) expresses the decision relevance of a management accounting system as follows: 'The deviations from planned information are question-raising data. From the intelligent raising of questions as to why each deviation occurs may be found better ways of accomplishing the tasks that are to be done in the firm' i.e. decisions to be taken. A management accounting method must supply decision relevant information.

It is also within this decision-making scenario that the replacement value depreciation and the capital structured interest on capital theories have their positive influence. Especially in making decisions on using 'old-paid-for-cheap' but inefficient equipment instead of high-technology efficient but 'new-expensive' equipment.

- The current standard in the market for decision relevance.

The information from the financial system is quite useless for management decision making. As Dugdale (1990a) rightfully indicates 'absorption costs include allocations of 'fixed' and 'sunk' costs which are arguably, irrelevant for decision making'. The following quote from Johnson (1988) illustrates the problem with regard to decision relevance for product decisions. 'Traditional accounting systems efficiently and effectively cost products for one purpose and that is to value inventories for financial reporting.

Traditional cost accounts do not distort total costs, inventory costs or "bottom line" net income figures. However, managers who use cost accounting information to judge an individual product's costs can make serious marketing errors. This happens because the over-aggregated averages that cost accounting systems use to distribute indirect costs to products systematically distorts the costs of individual products'. Even staunch proponents of CMA agree - Piper and Walley (1991): 'We agree totally with him (Kaplan) that management are using traditional product costs and that this practice do not produce high-quality decision-relevant information. The arguments for this are well documented and we agree with these sentiments'. From the above quotes it is clear that the decision relevance of CMA systems are poor.

2.6. Operational planning and control.

Anthony (1965, p.21) clearly shows the link between the internal activities of an organisation, such as operational planning and control and the internal accounting system. From this, it follows that a management accounting system has to facilitate the planning and control of operations.

- The current standards in the market for operational planning and control.

Johnson (1988) sums up the current market standard as follows: 'Traditional management accounting systems to control operations and to cost products do not serve managers well in today's competitive environment'. The current market standard for operational planning and control can be described as inadequate.

2.7. Management planning and control.

Kaplan (1987. p.153 to 177) gives a thorough insight into the need for integration of the management accounting system and management planning and control. The reference to Anthony (1965), made above for operational planning and control, also applies here.

- The current standard in the market for management planning and control.

Porter and Akers (1987) mention the lack of accounting information to enable management to ensure the

effectiveness in an organisation, i.e. doing the right thing. The following quote from Kaplan (1987, p.176) underlines this: 'While some innovations in organisations' planning, budgeting and control systems may have occurred, virtually no new ideas have affected the design and use of cost management systems'. The prevailing standard - insufficient.

2.8. Short run product management.

Kaplan (1987, p.233) distinguishes between short-term and long-term product costs. Short run product management covers subjects such as decisions taken on pricing using marginal cost information, the maximisation of contribution margins and the controlling of products' actual costs.

- The current standard in the market for short run product management.

The distortion of product costs has been mentioned extensively above. Mistrust of product cost information follows from this. These two factors culminate in poor cost control and a deficiency in contribution margin management. What CMA therefore has to offer in terms of short run product management is meagre.

2.9. Long run product management.

What has been said so far concerning product costing in general also applies here. In this instance, however, the focus has a longer term emphasis and a strategic decision

perspective.

- The current market standard for long run product management.

What was said above under short run product management also applies here. The issue of strategic information was covered in the section on decision relevance. From the discussion of these two parameters, this it is clear that as far as long run product management is concerned, CMA falls far short.

3. Questionnaire design.

The nine parameters for relevance formed the sub-sections of the questionnaire that was used to gather data for the research report. (Samples of the German and English questionnaires can be seen in Appendix 1).

The questionnaire contained four categories of questions:

- Questions for demographic information - (Demographic questions).
- Questions for cross-checking - (Validation questions).
- Questions for determining quantitative information on a company's experience with Plaut ABC - (Factual Questions).
- Questions aimed at measuring relevance - (Qualitative questions).

The questionnaire further contained two types of questions:

- Closed questions, where respondents had to choose between a given number of options.
- Open questions, where respondents could give their answers in a sentence or a short paragraph.

In this section the eleven subsections of the questionnaire and their questions will be expounded on. More specifically, the motivation for each question will first be given. This will be followed, for qualitative questions, by an indication of how the current market standard for CMA was embodied in the question.

3.1. Section 1 : General.

Section one of the questionnaire was used to gather some demographic information and contained two validation questions:

- Question 1.1
Determined the type of industry.
- Question 1.2
Determined the type of production process.
- Question 1.3
Determined the number of products offered in the market place.

- **Question 1.4**

Served as a validity check to determine whether the respondent was still using Plaut ABC.

- **Question 1.5**

Determined the year of implementation of the Plaut ABC concept.

- **Question 1.6**

Determined whether the companies that implemented Plaut ABC received training.

- **Question 1.7**

This question served as a validity check for the questionnaire as a whole. A company's rating here had to agree with his assessment of the overall relevance of the Plaut ABC concept.

3.2. Subsection 2 : Profitability.

The following questions were used to gather data on profitability:

- **Question 2.1**

This question attempted to measure actual changes experienced in the companies' profitability.

The current market standard was represented by the option 'Did not change'.

- Question 2.2

This was a factual question, intended to measure the time frame involved for profitability to change.

- Question 2.3

This was a repeat of question 2.1. But here it tested the response of companies that had implemented Plaut ABC, as to the estimated effect of Plaut ABC on profitability given a specific scenario. The scenario that was presented highlighted internal control problems.

The current market standard was again represented by the option: 'Will not change'.

- Question 2.4

This was an open question in which respondents could motivate their answer given for Question 2.3.

3.3. Subsection 3 : Timeliness.

This is the one parameter where computer software plays a major part. Two software houses supply products that cater for Plaut ABC.

The first, Systems Application Programmes (SAP) product is unique in the international market in that it is the only product available that offers a fully integrated mainframe software package that caters for all the functions of a

business on an on-line and real-time basis. It can also cater for standard direct costing approaches to management accounting. The real-time on-line concept would by nature imply a superior degree of relevance. Two things are however important as far as the aims of this report are concerned:

- * In practice companies do not replace their total systems with an SAP package. The SAP software can be purchased in modules or simply do not cater for very specialised applications. The research report will therefore attempt to determine to what extent Plaut ABC users have been able to capture the advantages of a real-time on-line system.
- Although the SAP software can be used in a CMA application, the on-line real-time issue is considered important to the relevance of Plaut ABC for two reasons:
 - Currently in the market the Plaut ABC concept can only be purchased with on-line real-time software.
 - Kaplans approach to ABC, a parallel system on personal computers, is currently being promoted as the main-line solution to the problems of management accounting.

Secondly, the Plaut company's own software, the earlier packages of which are of a batch processing type, are used.

Within this framework the questionnaire was set-up to determine the following for the parameter - Timeliness.

- Question 3.1a

The time taken to produce formal month end/period reports for cost centres.

- Question 3.1b

The time taken to produce formal month-end/period reports for products.

The current market standard for both these was taken as 15 days after month closing.

- Question 3.2

A factual question on the software being used by the respondent.

- Question 3.3

A factual question on the nature of the software - on-line or batch.

- Question 3.4

Due to the potential mixing of SAP modules with batch processing modules, the extent of full integration, i.e. percentage of costs still being processed periodically, was measured. Naturally all those companies that use the older Plaut software will still do a lot of batch processing.

The current market standard was expressed as the option - 'More than 50 %'.

- Question 3.5

This question measured the extent to which companies are utilising the on-line facility for control purposes.

The current market standard was represented by the option 'On-line facility not used'. This rating can be justified as follows:

- There is no known system other than SAP with the on-line capability.
- The applications of the SAP system for CMA are estimated to comprise a negligible percentage of total CMA applications.

- Question 3.6

A final factor that was measured was that of the reporting frequency on critical success factors to the company.

The current market standard was taken to be 'Monthly', due to batch processing software being used.

3.4. Subsection 4 : Cost management.

In the questionnaire the following areas were addressed.

- Question 4.1

The companies were asked if they would recommend Plaut ABC to someone else with cost management problems.

'Recommend another costing method' was used as the market standard. This was done because the irrelevance of CMA is accepted as fact. (Refer Chapter 1 above).

- Question 4.2

If a respondent indicated, in Question 4.1, that he would recommend another costing method, his recommendation had to indicate here.

- Question 4.3

The accuracy of product cost control information in a volatile environment was the subject of this question.

The current market standard in failing to provide accurate information was coded as 'Very often'.

- Question 4.4

Standard Cost rates' usability for 'make-buy' decisions were measured here.

'Not usable at all' represented the current market standard. This is due to large overhead burdens and the failure of CMA to determine standard rates for cost drivers other than labour.

- Question 4.5

Here, respondents had to rate the Plaut ABC concept as an overhead cost control tool.

A rating of 1 (an inadequate tool) represented the current market standard. As indicated above under the discussion of the parameter - Cost management, overheads are considered fixed costs, thus the poor rating.

3.5. Subsection 5 : Reporting emphasis.

On the subject of reporting emphasis the following detail was collected:

- Question 5.1

The test was for the placement of the financial and management accounting departments in the organisational structure. The assumption is made that if both functions are performed by one department the financial reporting mentality will have a far greater impact on the management information system than if the two departments operated autonomously. This was a factual question

of which the responses would be used to test the assumption.

- Question 5.2

Here, the level of detail supplied by the Plaut ABC concept was determined.

The current market standard - 'Aggregate information, ideal for compiling monthly financial statements'.

- Question 5.3

This question determined the dominant reporting emphasis for three different periods:

- 0 to 6 months.
- 6 months to 2 years.
- 2 years and longer.

The reporting mode that has overall dominance was also determined.

'Financial statements to report on profitability' were taken as the current market standard for:

- 0 to 6 months.
- 6 months to 2 years.
- The dominant reporting mode.

'Strategic progress reports' were taken as the standard for the period, 2 years and longer.

- Question 5.4

Finally the costing method's instrumental role in helping to manage the dominant reporting mode, in Question 5.3, of the company was determined.

The current market standard was accepted as 'Very helpful' in helping to manage the dominant reporting mode - financial reporting and 'Useless' for strategic and management accounting reports.

3.6. Subsection 6 : Decision relevance.

The following were the detail information collected for this parameter:

- Question 6.1

Determined the Plaut ABC user's view of the concepts focus.

'Based on historic information' was the coded answer for the current market standard.

- Question 6.2

This question attempted to determine a rating for Plaut ABC in helping to identify potential problem areas in an organisation and thus trigger proactive decision-making.

The current market standard - A rating of 1

'Useless'.

- Question 6.3

Here a rating had to be given of the information, from the costing method, that must be used to make decisions on products (introduction and discontinuance) and customers (new ties and severing old ties).

Current market standard - 'Very poor'.

- Question 6.4

Here respondents had to rate the difficulty with which the impact of decisions previously taken, can be tracked.

Current market standard - 'Very difficult'.

3.7. Subsection 7 : Operational planning and control.

The following questions were used to collect information on operational planning and control:

- Question 7.1

This question measured the level of unitary information supplied by the Plaut ABC concept. Unitary information being of importance for the management of operations.

The matter of insufficient detail supplied by CMA has been mentioned previously, this has a negative impact on its level of unitary information and ability to facilitate operational planning and control. Standard - 'Severely lacking'.

- Question 7.2

The subject of this question was responsibility. The rational being that if operational responsibility is to be decentralised, cost centre heads must be involved in the planning process where standard cost rates for their cost centres are determined.

Standard coded - 'Cost accountants only'.

- Question 7.3

On the subject of operational planning and control Porter and Akers (1987) mention an additional factor namely that of efficiency at the coal face. A management accounting method must be able to highlight inefficiencies through deviations from standards.

Standard - 'Useless'. CMA does not use standard rates for activities/services and ignores valid cost drivers such as machine hours, oven cycles, vehicle kilometres, etc.

- Question 7.4

Kaplan (1987, p.253) adds the requirement of performance measurement of line management. This question, therefore, attempted to obtain a rating for the performance measurement capabilities of the Plaut ABC concept.

Due to too little detail and the absence of activities and their proportional cost, the standard for CMA was coded as: 'Not a valid measure'.

- Question 7.5

Finally, for the parameter - Operational planning and control, the degree of accountability of line management was determined. This question should show a high correlation with question 7.2 - on responsibility.

To ensure the proper functioning of decentralised accountability, a management accounting system must-

- isolate all uncontrollable variances; and
- represent operational level detail in monetary terms to effectively express run of the mill decisions in profit implications.

In this regard CMA was rated as 'Lower management seldom held accountable since the environment plays havoc with the plan'.

3.8. Subsection 8 : Management planning and control.

The following areas of management planning and control were addressed in the questionnaire:

- Question 8.1

This question tested the degree of accountability of product and sales management.

'Seldom held accountable since the environment plays havoc with the plan' was the standard, for similar reasons given for question 7.5 above.

- Question 8.2

The ability to identify potential problems had to be rated here.

The standard - 'Very poor'. This rating is due to -

- the inadequate level of detail; and
- information with a low degree of decision relevance. (Refer to Section 3.6 above).

- Question 8.3

This question dealt with the ability of the system to remain a valid management control instrument by adapting to changes in the external environment.

Standard - 'Adapts poorly'.

- Question 8.4

In this factual question respondents had to quantify the time it takes for the system to adapt to the environmental changes mentioned in Question 8.3.

The market standard was taken as 'Monthly', due to the batch processing systems in use.

- Question 8.5

The ability of the management accounting system to accommodate corporate strategies as budgetary variables was measured here.

Standard - 'Very difficult.'

- Question 8.6

This question tested for the concept's effectiveness in measuring middle and upper levels of management's performance in profit centres.

Standard - A rating of 1 ('Totally ineffective'). The rationale being, that if product costs are suspect then managing profit is a very difficult task.

- Question 8.7

This question tested the concept's effectiveness

in measuring middle and upper levels of management performance in revenue centres.

Standard - A rating of 1 ('Totally ineffective').

3.9. Subsection 9 : Short-run product management.

For this parameter the following four questions were included in the questionnaire:

- Question 9.1

Despite the apparent failure of the marginal costing/pricing concept (Cooper and Kaplan, 1988) in the United States, convincing arguments can be raised as to its usefulness. (Horngren and Foster, 1987, p.48; Baumol and Blinder, 1988, p.685). It is most likely that the indiscriminate use of marginal information is to blame, due to a lack of insight into the full implications of such decisions by marketing/sales. The marginal costing concept is accepted as relevant, especially since the Plaut concept theory stresses the availability of both full and marginal information. This question tested the extent to which marginal information is used by Plaut ABC users.

Standard - 'Not used very often'.

- **Question 9.2**

A factor that is closely linked with the use of marginal information, trust in product cost information, is the subject of this question.

Standard - 'Trusted by only a few and not really used'.

- **Question 9.3**

This question measured the effectiveness of the system to monitor a product's actual costs.

Standard - Not at all effective.

- **Question 9.4**

Finally, for the parameter - Short-run product management, the management of product contribution margins was addressed.

Standard - 'Always problems with contribution margin management'. This rating is given to CMA for two reasons:

- The foundation of contribution margin management, product costing, is shaky.
- Cost allocation in multi-product environments is dubious.

3.10. Subsection 10 : Long run product management.

For the final parameter, these questions were used to collect information:

- Question 10.1

A question on the use of product cost information during strategic business decisions.

Standard - 'Costs are seldom considered' for the same reasons as mentioned under Question 9.2.

- Question 10.2

Determining the helpfulness of product information when decisions on product introduction or discontinuance have to be made.

Inaccurate costing results in a rating of 'Often useless'.

- Question 10.3

Here respondents had to rate the Plaut ABC concept as an instrument in helping to monitoring strategic goal achievement, such as market or product growth.

Standard - 'Poor instrument', for the same reasons as given for contribution margin management (Question 9.4 above).

- Question 10.4

Finally, the overall strategic value of the Plaut ABC concept to its users was determined.

Standard - 'Of little value'.

3.11. Subsection 11 : Advantages and disadvantages.

This section contained two open questions where companies could list their views on the advantages and disadvantages of the Plaut ABC concept. Two short paragraphs were provided for each question. No facility to rank the advantages and disadvantages was provided, a simple random listing was provided for.

4. Conclusion.

This concludes the discussion on the parameters for relevance and the structure of the questionnaire.

A point that needs mentioning at this stage, is that what may seem to be an apparent contradiction. Namely, this report aims, amongst other things, to disprove Kaplan's PC approach to ABC, yet utilises a lot of his arguments and research results. In this regard the following two facts must, however, not be confused:

- It is an assumption of this report that CMA has lost its relevance, this sentiment is also the foundation of Kaplan's drive to rectify the current problems of management accounting in general. From this point of

view it is, therefore, totally acceptable to use the arguments and research results of Prof. Kaplan to establish the standards for CMA, as was done in this chapter.

- On the matter of how to restore relevance to management accounting this report differs from Prof. Kaplan, as was explained in Chapter 1.

In the next chapter the procedure followed in gathering data will be given.

Chapter 9

1. Introduction.

What follows below is a description of the procedure followed in gathering the data for this research project. The topics that will be discussed are -

- the drawing up of the initial questionnaire;
- testing of the questionnaire;
- a definition of the population;
- the data gathering procedure;
- the responses received; and
- editing and coding of information.

2. The questionnaire.

The main body of the questionnaire was compiled using the nine parameters for relevance. The individual questions were arrived at from contemporary management accounting literature as discussed in the previous chapter.

3. Testing of the questionnaire.

In initial draft form, the questionnaire was tested amongst an English-speaking target sample. Following the corrections that flowed from this test the questionnaire was translated into German and again tested, using a German-speaking target sample. After the final corrections the questionnaire was printed and compiled for postage.

4. The population.

The target population consisted of 180 multi-product companies that have implemented the Plaut ABC concept. Multi-product being defined as companies with 20 or more products. These companies are situated in South Africa, Germany, Switzerland and Austria. They had implemented the Plaut ABC concept since inception of the company in 1946. As indicated previously, this population contained a mixture of on-line and batch-processing software users.

5. Data gathering.

The questionnaires were posted to the companies accompanied by a cover letter from the University of South Africa. A self-addressed envelope with stamps for each country, depending on the domicile of the addressee, accompanied each questionnaire. Questionnaires were posted on the 31 July 1991.

6. Responses.

Responses were returned between 15 August and 15 October 1991. A total of 50 questionnaires were returned, of these 6 were not completed. Seven questionnaires had to be discarded due to invalid or conflicting responses to questions. This left 37 questionnaires, a sample size of about 21 %, that could be used for the analysis. The sample size was sufficient to ensure statistical analysis with confidence levels of 99 % and higher.

7. Editing and coding.

On receipt, the responses were coded and captured into a Lotus 123 spreadsheet. The latter was used for the graphic representation of the information as well as a more detailed analysis.

Of the questionnaires accepted for the analysis, two questions had a non-response rate of about 10 %. This was corrected by using the proportions of the population as indicated by correctly completed questionnaires. Once the proportions had been established number ranges were assigned to each and random numbers, generated by a computer, used to fill in the non-responses.

8. Conclusion.

The findings of the research project follow in the next chapter. This will cover the performance of Plaut ABC on the nine parameters for relevance only. A detailed discussion and analysis will follow later.

Chapter 10

1. Introduction.

In this chapter the findings of the research report will be given. This will entail a factual representation of the findings, a detailed discussion and interpretation of the results of the research report will be given in Chapter 11.

By way of background to the statistical test that will be done, coding for the analysis, the value that will be used as the current market standard and the steps in the statistical procedure to be followed, will first be explained.

The degree of relevance of Plaut ABC, for each of the parameters for relevance, and its degree of overall relevance will next be given. This will be followed by the statistical test for the difference between two means, to determine whether Plaut ABC gives a significantly higher degree of relevance than CMA.

The chapter will be concluded with the findings of the report.

2. Coding for the analysis.

Coding of the possible responses on each question was done as follows. For each question the current market standard of relevance, identified in chapter 8, was coded with a value equal to one. The response representing the highest possible degree of relevance was coded with a value of ten. Intermediate responses were coded with values of equidistance between one and ten. These intermediate values were determined by the number of

possible responses in the question. For example, a question with three possible responses was coded as: 1, 5.5 and 10, a question with five possibilities as: 1, 3.25, 5.5, 7.75 and 10 and a question with ten possibilities as: 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10.

3. The current market standard's degree of relevance.

Coding the current management accounting standard with a value of one, results in the statistical mean for CMA's degree of relevance being equal to one. This value will be used when the hypothesis testing procedure will be employed to determine whether there is a significant difference between the mean value for CMA's degree of relevance and the mean value for the degree of relevance for Plaut ABC. The hypothesis test for the difference between two means will follow in paragraph 7 below.

4. The backdrop against which the statistical test will be performed.

4.1. Statistical theory that applies.

It is not known whether the population of Plaut users are normally distributed. Within the central limit theorem however one is allowed to make inferences about populations without knowledge of the shape of the frequency distribution of the population. The sampling distribution of the mean will approach normality as the sample size increases. A sample size of 30 is normally used as an indication that such a sample distribution will be normal.

Since the sample size in this research project is 37 the standard normal distribution will be used with the z-table.

The fact that the distributions are approaching normality will be seen in the frequency distributions below.

4.2. Determining the sample means and standard deviations.

The first step in the statistical procedure is the determination of the sample means and the standard deviations for each parameter for relevance. This will be achieved by calculating the sample statistical mean and the sample standard deviation for each parameter using the responses from the companies that returned questionnaires and the coded values for responses per question. Detail on the sample mean and standard deviation for each parameter for relevance is given in paragraph 5 below.

In paragraph 6 the sample mean and the sample standard deviation for the overall relevance of the Plaut ABC method, as measured against all nine parameters, will be calculated. These parameters will be used to derive the interval estimate for the population mean of all multi-product Plaut ABC users.

4.3. Estimating the population mean.

Two requirements must be fulfilled before an interval estimate of a population's mean can be arrived at, using a sample from that population -

- a confidence level must be decided on; and

- as well as the upper and lower limits within which the population mean is estimated to fall, given the confidence level.

Throughout this procedure a confidence level of 99.8 % or higher will be used. This implies that there is a 0.2 % chance that, for example, the actual population mean will fall outside the stated limits.

In estimation, the limits are determined by the sample size once the confidence level is set. As mentioned previously 37 questionnaires were found to be usable. Given a sample size of 37, a population of 180, a confidence level of 99.8 % and if the sample standard deviation is used as an estimate of the population standard deviation, the upper and lower limits can be calculated.

The sample standard deviation for each of the parameters for relevance and for the overall rating of relevance differs. This is because a frequency distribution exists for each parameter and for the overall rating of Plaut ABC. It follows that the estimate of the population standard deviation in each instance will also vary. Due to this, the interval estimates for the population mean will be calculated as each parameter's information and the information indicating the overall relevance of the Plaut ABC concept, is presented.

4.4. Testing for the difference between two means.

In testing for the difference between two means, the nil

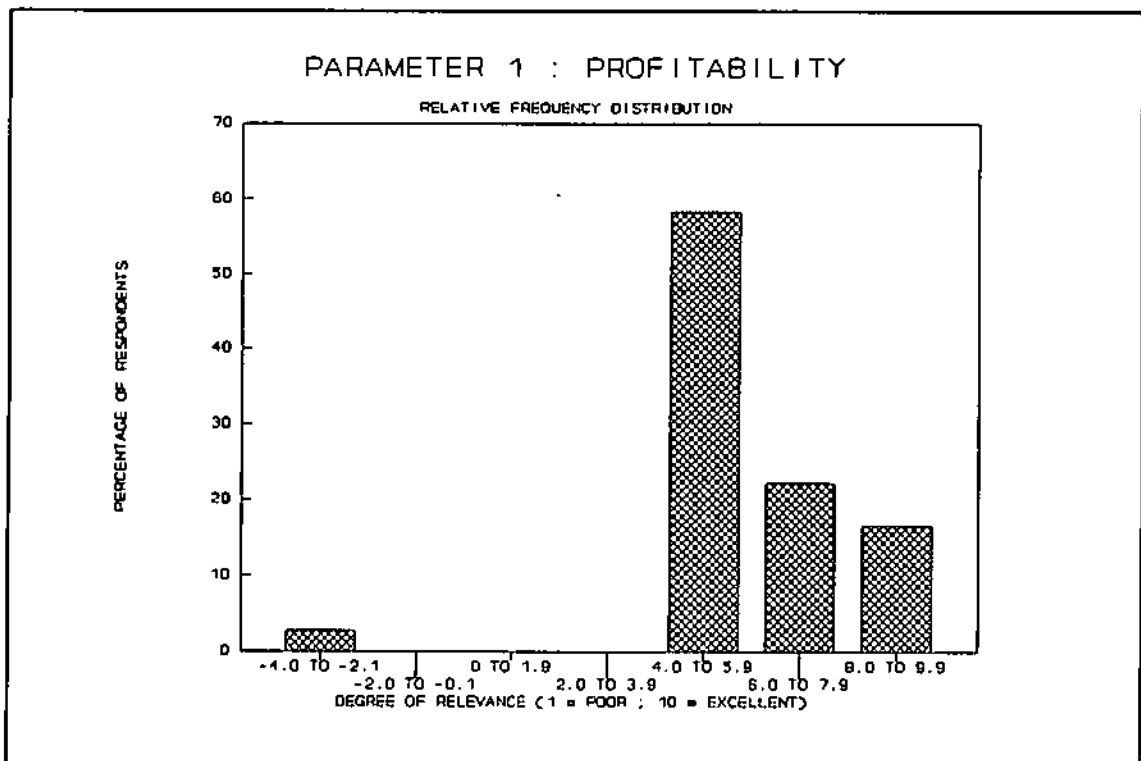
hypothesis will be tested at the 99.8 % confidence level. This will be a one-tailed test, since the objective of this research report is to prove the relevance of Plaut ABC.

5. The relevance of Plaut ABC on each parameter.

5.1. Plaut ABC relevance - Parameter 1 : Profitability.

Figure 10.1 shows the relative frequency distribution for the responses that were received for parameter 1 :

Figure 10.1



Profitability. The distribution has a mean of 5.7 and a standard deviation of 2.3.

Estimating the population standard deviation by using the sample standard deviation means the former will also be

equal to 2.3. Using this, a sample size of 37, population of 180, a confidence level of 99.8 %, i.e. a z-value equal to 3.09, the confidence interval can be calculated using the following formulas:

$$- \sigma(\text{sample}) = \{\sigma(\text{population})/\sqrt{n}\} \times \sqrt{(N-n)/(N-1)}$$

In words : The standard error of the mean is equal to the population standard deviation divided by the square root of the sample size. This result is multiplied by the following result - the square root of all the following : the population size minus the sample size, the result of the latter divided by the population size, minus 1.

$$- \sigma(\text{sample}) = (\text{ABS limit})/z$$

In words : The standard error of the mean is also equal to the absolute value of the desired limit divided by the z-value for the stated confidence level.

By equating these two formulae, one can solve for the limit as follows:

$$(\text{ABS limit})/z = \{\sigma(\text{population})/\sqrt{n}\} \times \sqrt{(N-n)/(N-1)}$$

$$(\text{ABS limit})/3.09 = (2.3/\sqrt{37}) \times \sqrt{(180-37)/(180-1)}$$

$$(\text{ABS limit})/3.09 = (2.3/6.08) \times \sqrt{(143/179)}$$

$$(\text{ABS limit})/3.09 = 0.378 \times \sqrt{0.799}$$

$$(\text{ABS limit})/3.09 = 0.378 \times 0.894$$

$$(\text{ABS limit}) = 0.338 \times 3.09$$

$$(\text{ABS limit}) = 1.04$$

It can, therefore, be stated at a confidence level of 99.8 % that the population mean for Plaut users for profitability lies between :

- Upper limit = sample mean + (the z-value for the stated confidence level x the standard error of the mean).

$$= \bar{x}(\text{sample}) + (z \times \sigma(\text{sample}))$$

$$= 5.7 + (3.09 \times .338)$$

$$= 5.7 + 1.04$$

$$= 6.74$$

====>

and

- Lower limit = sample mean - (the z- value for the stated confidence level x the standard error of the mean).

$$= \bar{x}(\text{sample}) - (z \times \sigma(\text{sample}))$$

$$= 5.7 - (3.09 \times .338)$$

$$= 5.7 - 1.04$$

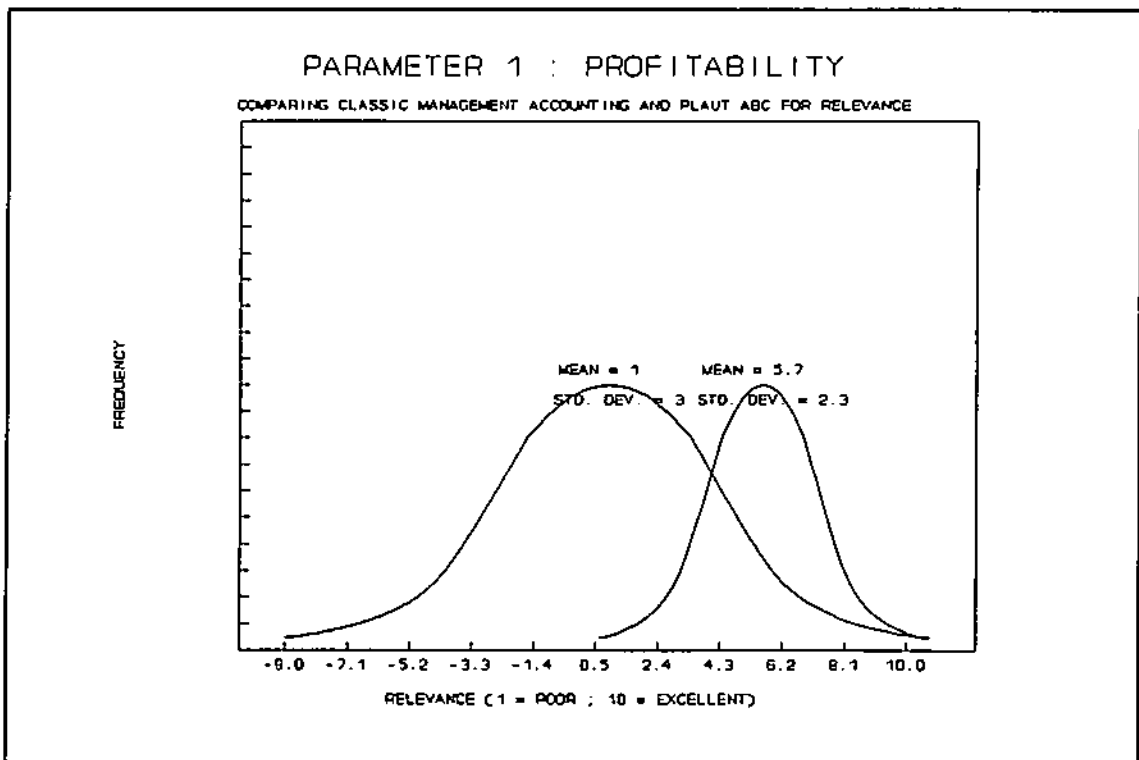
$$= 4.66$$

====>

The estimations of the population mean for the other parameters and for overall relevance will be calculated in the same way.

The standard normal distributions showing the comparison of the degrees of relevance of CMA and Plaut ABC for the parameter - Profitability can be seen in Figure 10.2. Note the relatively small amount of dispersion of the Plaut ABC

Figure 10.2



distribution. A detailed analysis of this information and that for the other parameters will follow in the next chapter.

5.2. Plaut ABC relevance - Parameter 2 : Timeliness.

Figure 10.3 shows the relative frequency distribution for the responses received for parameter 2 : Timeliness. The distribution has a mean of 4.9 and a standard deviation of 3.5. By doing the same calculation as in paragraph 5.1 above, the confidence interval can be arrived at. It can be stated at the 99.8 % confidence level that the population mean for Plaut users, on the parameter timeliness, lies between 3.3 and 6.5.

Comparative information for CMA and Plaut ABC is shown in Figure 10.4. Although the relevance for Plaut ABC is

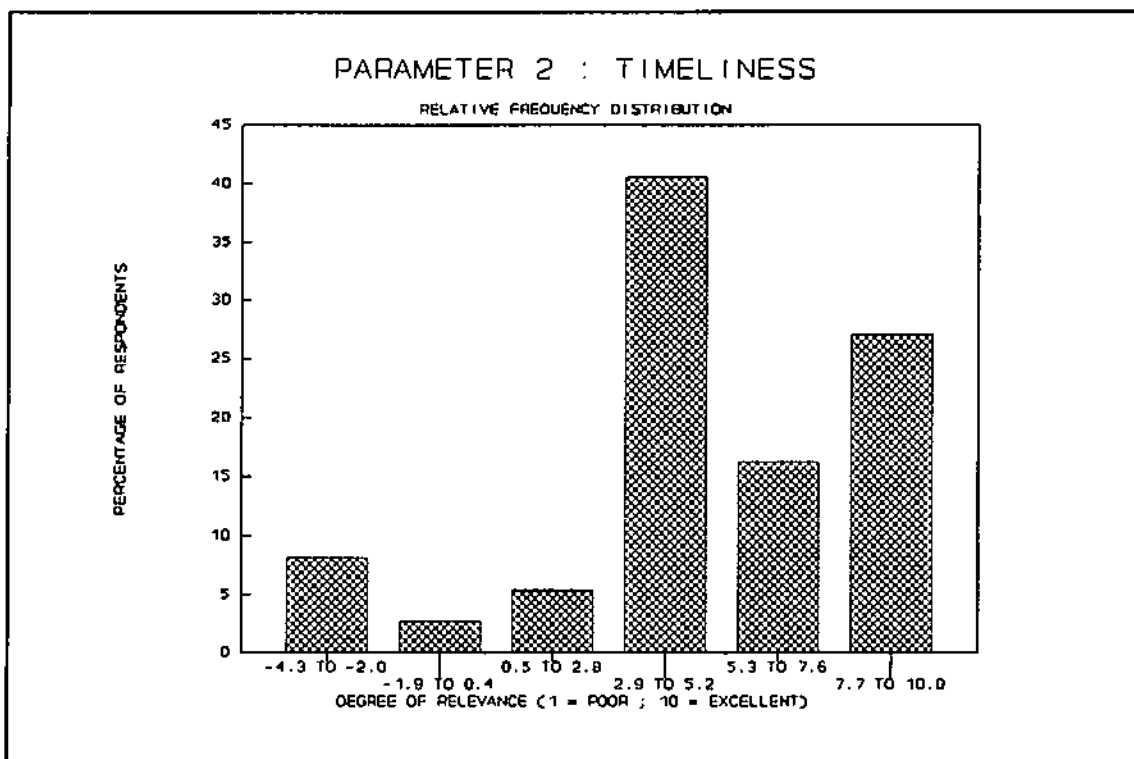
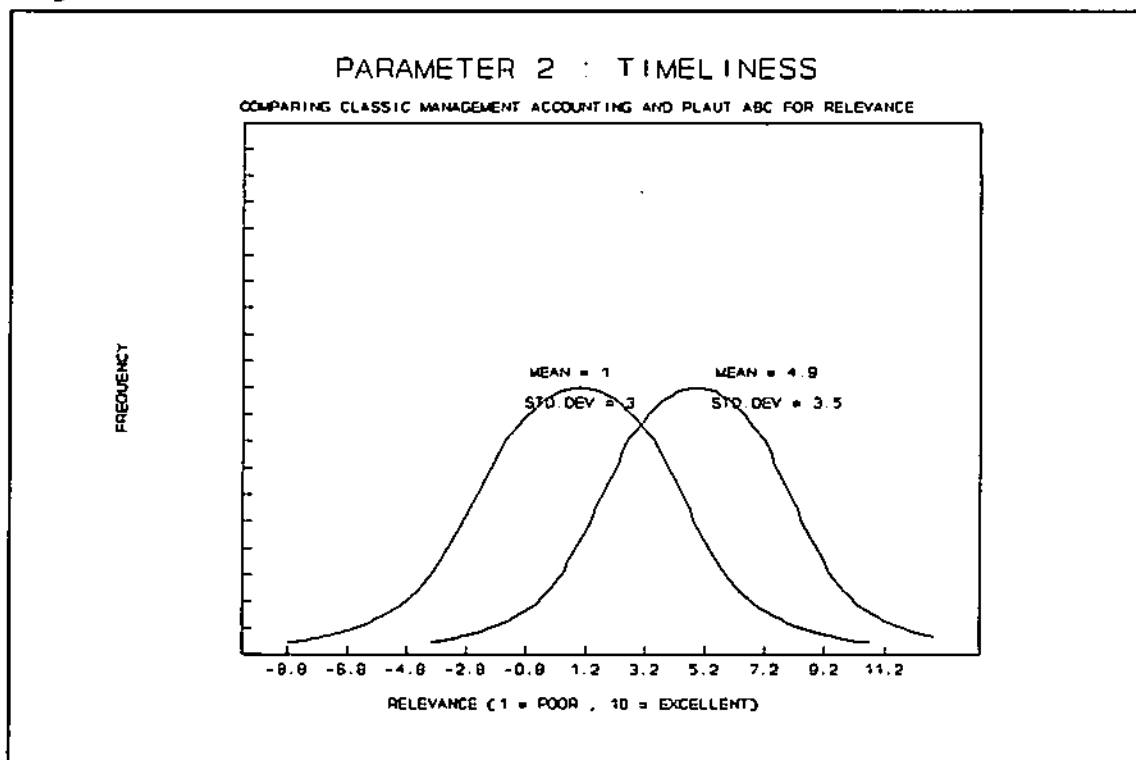


Figure 10.4



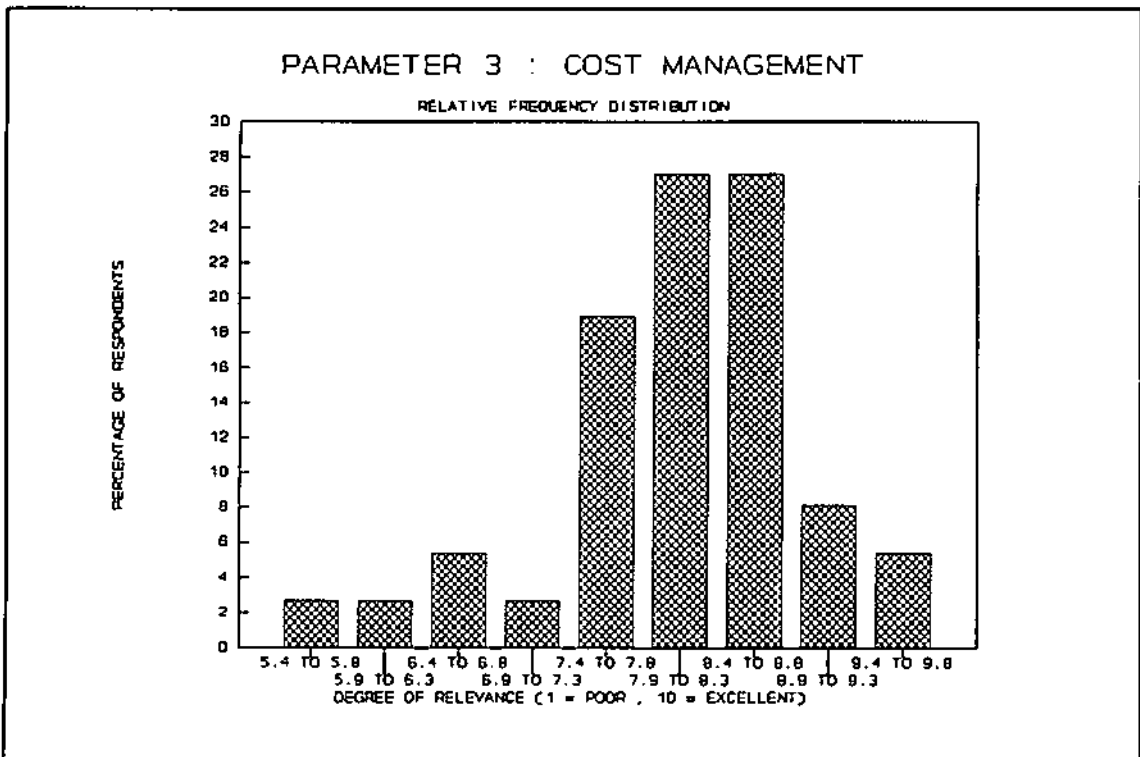
higher, the dispersion of the two graphs are virtually the same. The latter could most likely be attributed to the batch systems still in use with some of the Plaut ABC

users.

5.3. Plaut ABC relevance - Parameter 3 : Cost management.

Figure 10.5 gives the relative frequency distribution for the responses received for parameter 3 : Cost management. This distribution has a mean of 8.1 and a standard

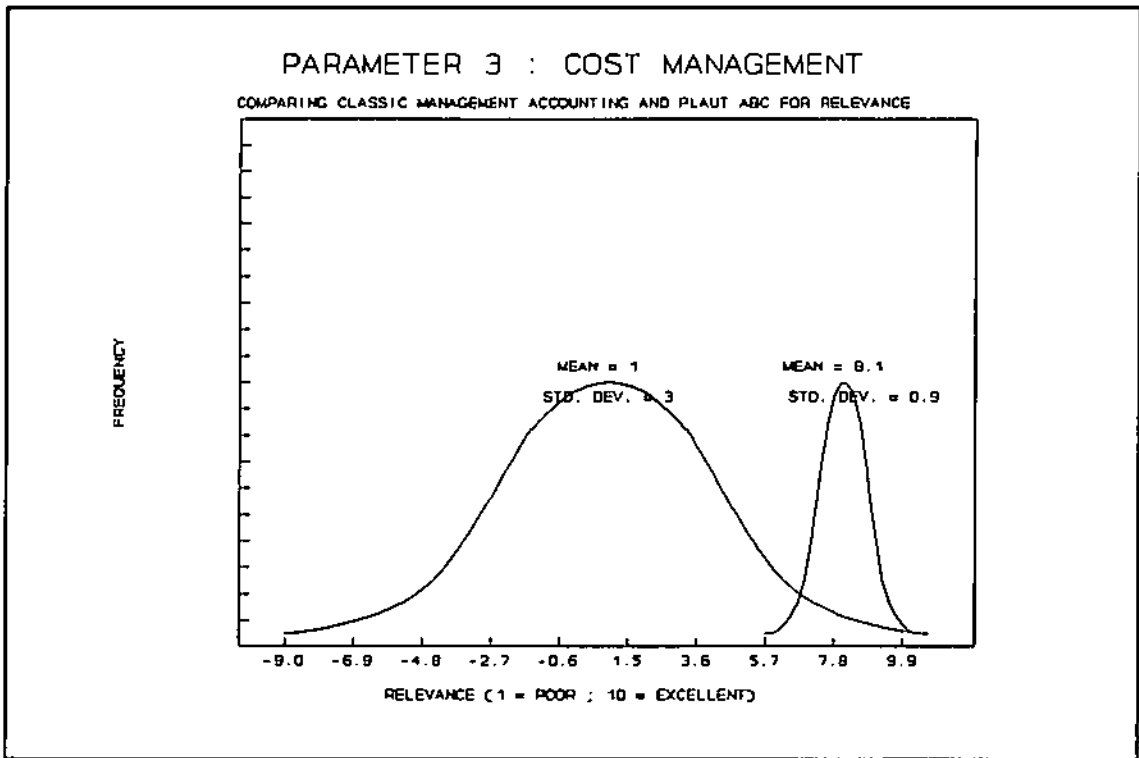
Figure 10.5



deviation of 0.9. The confidence interval, at the 99.8 % confidence level, for the population mean of Plaut users with regards to the third parameter cost management is 7.69 and 8.51.

Comparative information for degrees of relevance on the parameter - Cost management, are again shown in Figure 10.6. Note the significantly higher degree of relevance

Figure 10.6



obtainable from the Plaut ABC concept.

5.4. Plaut ABC relevance - Parameter 4 : Reporting emphasis.

Figure 10.7 shows the relative frequency distribution for the responses that were received for the fourth parameter: Reporting emphasis. The distribution has a mean of 8.2 and a standard deviation of 1.0. The population mean of Plaut users for the parameter reporting emphasis can therefore be estimated, at the 99.8 % confidence level, to lie between 7.75 and 8.65.

The comparative degree of relevance information in Figure 10.8 indicates a high degree of relevance for Plaut ABC users, this would, amongst other things, imply a breakaway from the traditional financial reporting emphasis.

Figure 10.7

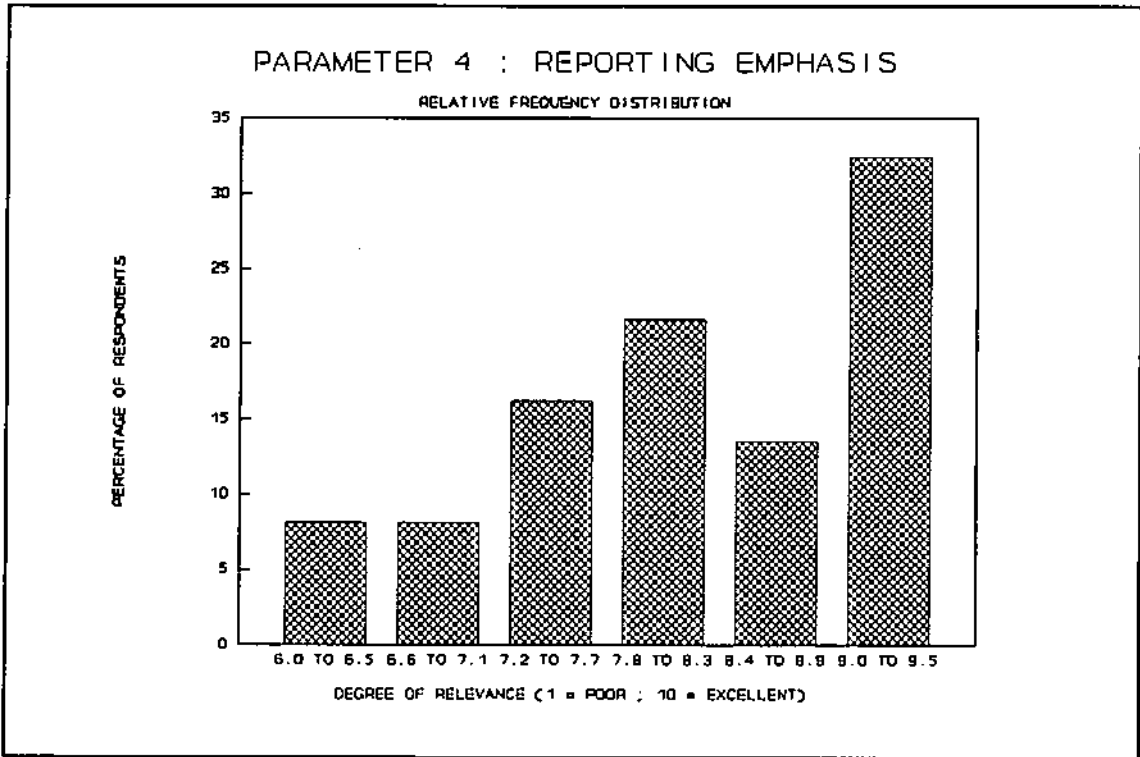
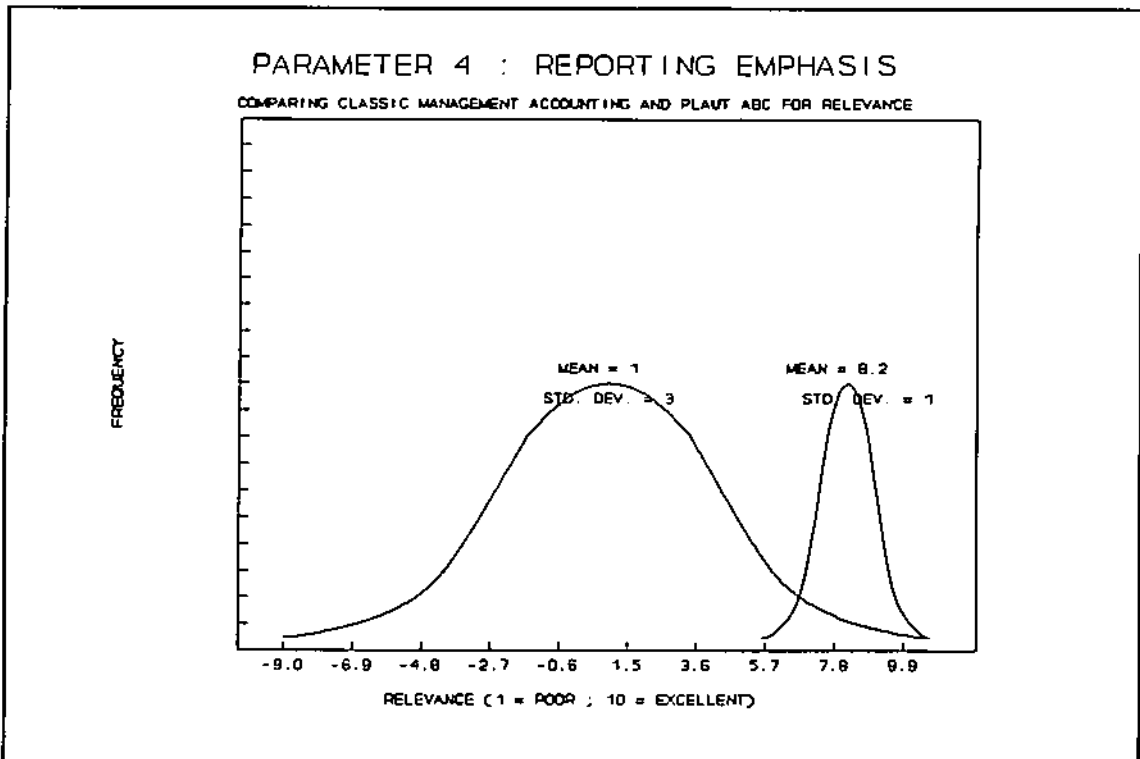


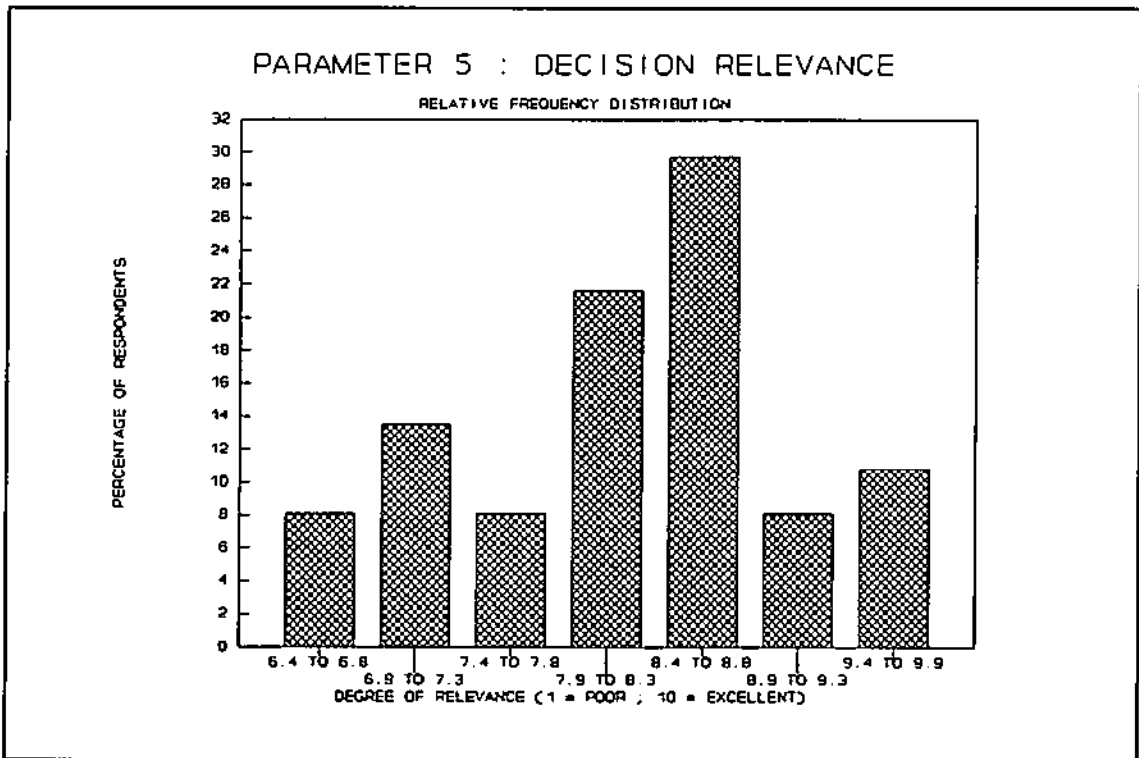
Figure 10.8



5.5. Plaut ABC relevance - Parameter 5 : Decision relevance.

Figure 10.9 shows the relative frequency distribution for

Figure 10.9



the responses that were received for parameter 5 : Decision relevance. The distribution has a mean of 8.4 and a standard deviation of 0.9. The population mean for Plaut ABC users for the parameter decision relevance, at the 99.8 % confidence level, is therefore estimated to lie between 7.99 and 8.81.

Comparative degree of relevance information, in Figure 10.10, again indicates a higher degree of relevance from Plaut ABC. This is, in fact, the parameter with the highest mean of all the parameters.

5.6. Plaut ABC relevance - Parameter 6 : Operational planning and control.

Figure 10.11 gives an indication of the relative frequency distribution of the responses that were received for

Figure 10.10

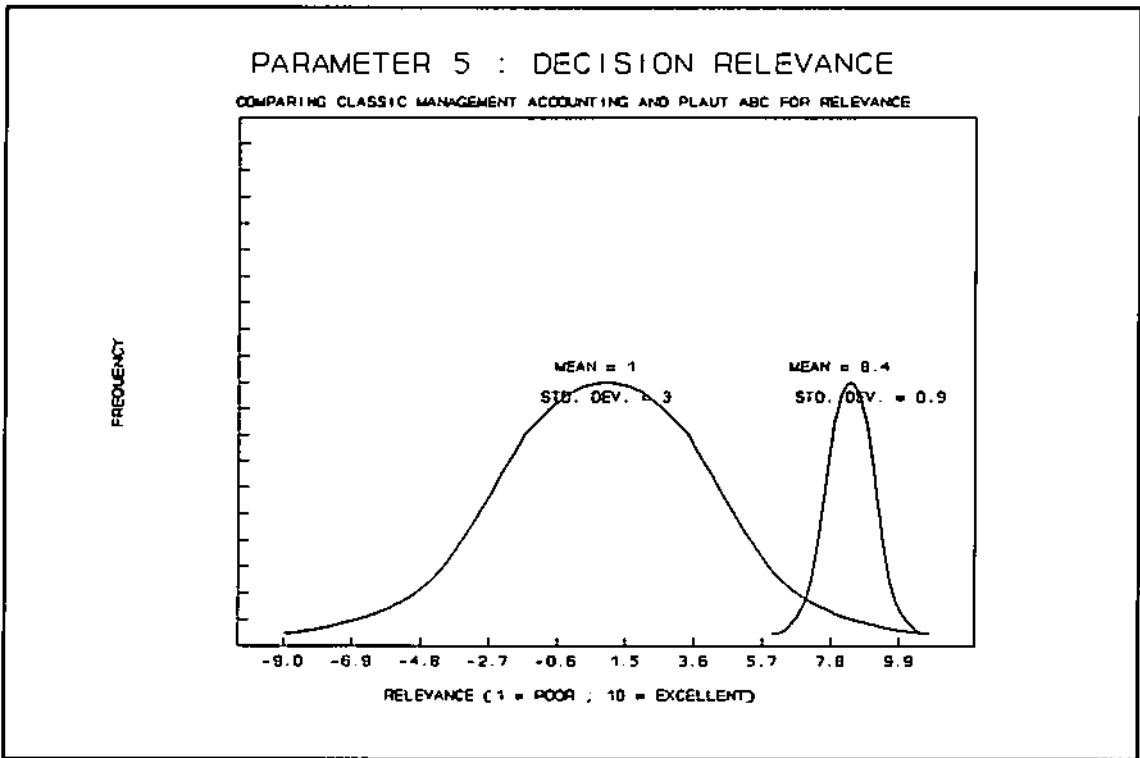
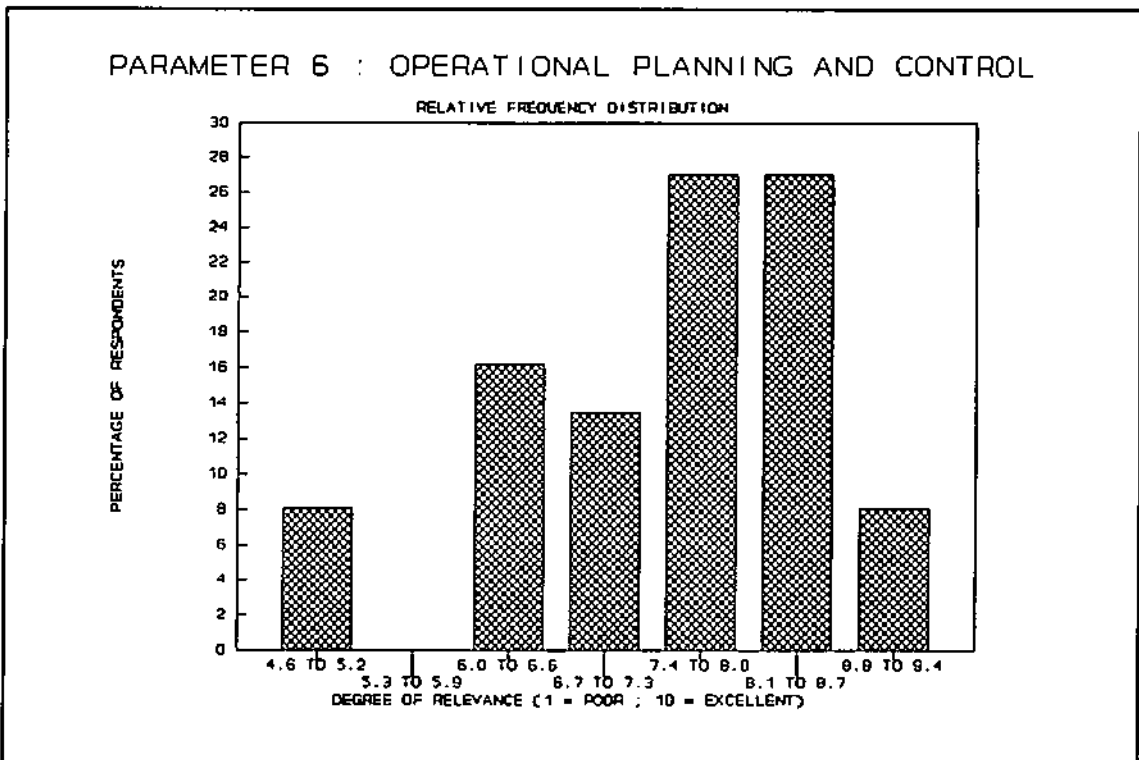


Figure 10.11

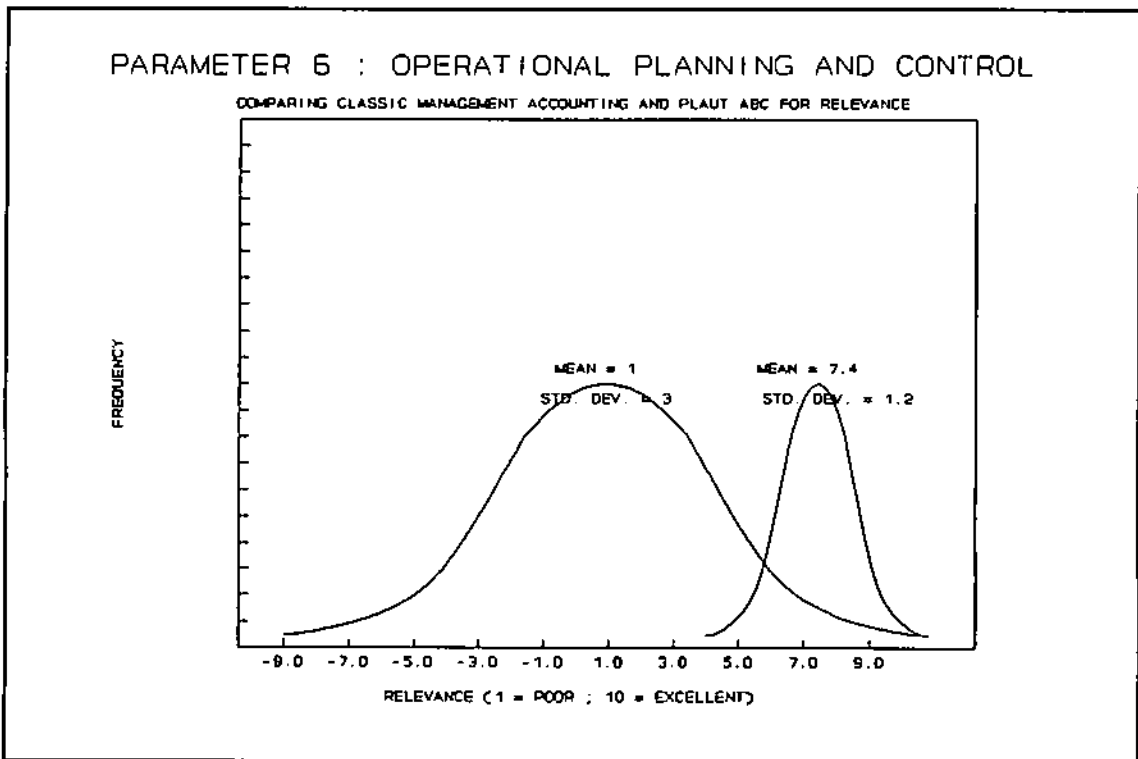


parameter 6: Operational planning and control. The distribution has a mean of 7.4 and a standard deviation of 1.2. At the 99.8 % confidence level it can therefore be

stated that the population mean of Plaut ABC users for the parameter decision relevance lies between 6.86 and 7.95.

Figure 10.12 illustrates again the comparative degrees of relevance and Plaut ABC's supremacy.

Figure 10.12



5.7. Plaut ABC relevance - Parameter 7 : Management planning and control.

Figure 10.13 is a representation of the relative frequency distribution of the responses that were received for the seventh parameter : Management planning and control. This distribution has a statistical mean of 7.4 and a sample standard deviation of 1.2. It can therefore be stated, at the 99.8 % confidence level, that the population mean for Plaut ABC users for the parameter management planning and

Figure 10.13

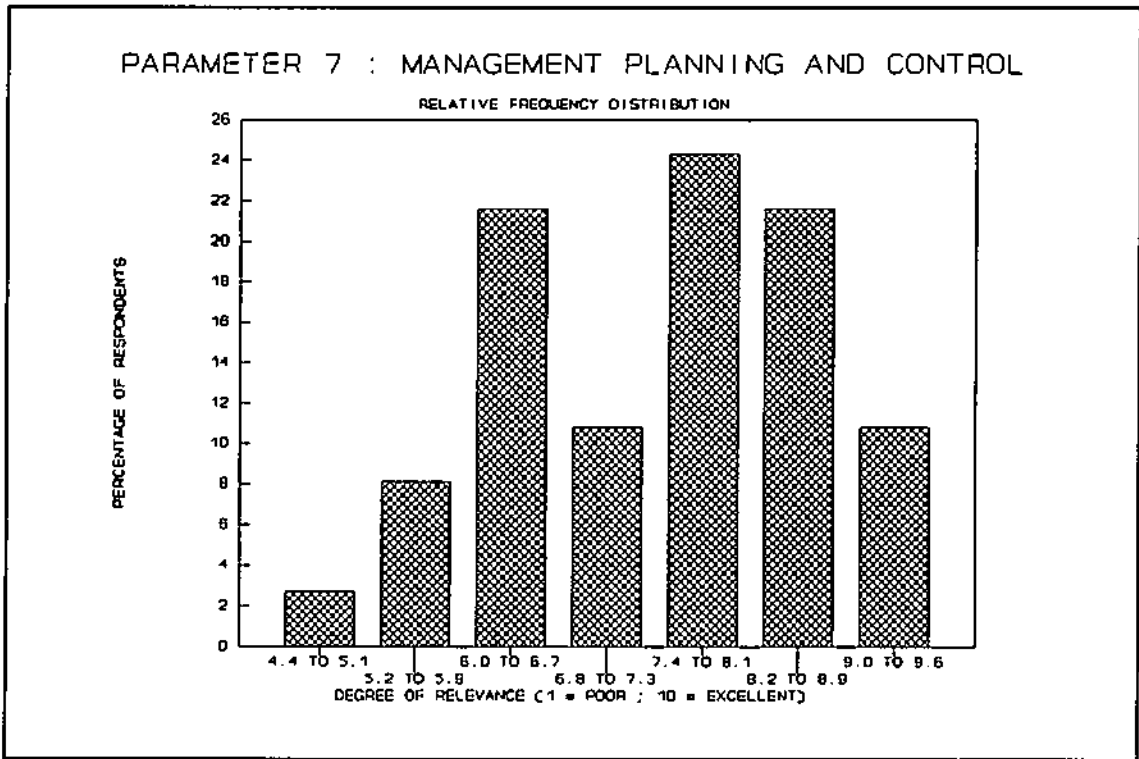


Figure 10.14

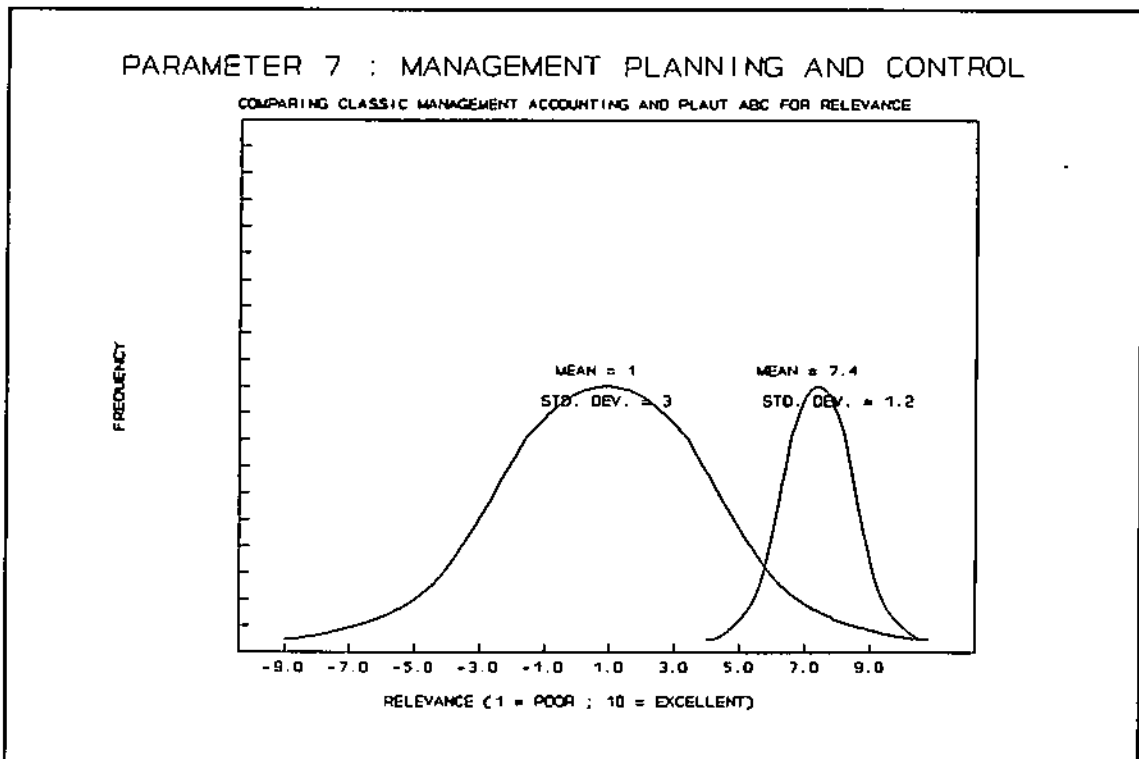


Figure 10.14 gives the comparative standard normal distributions for the parameter management planning and control. Incidentally, the Plaut ABC distribution here and the one for operational planning and control is exactly the same.

5.8. Plaut ABC relevance - Parameter 8 : Short run product management.

Figure 10.15

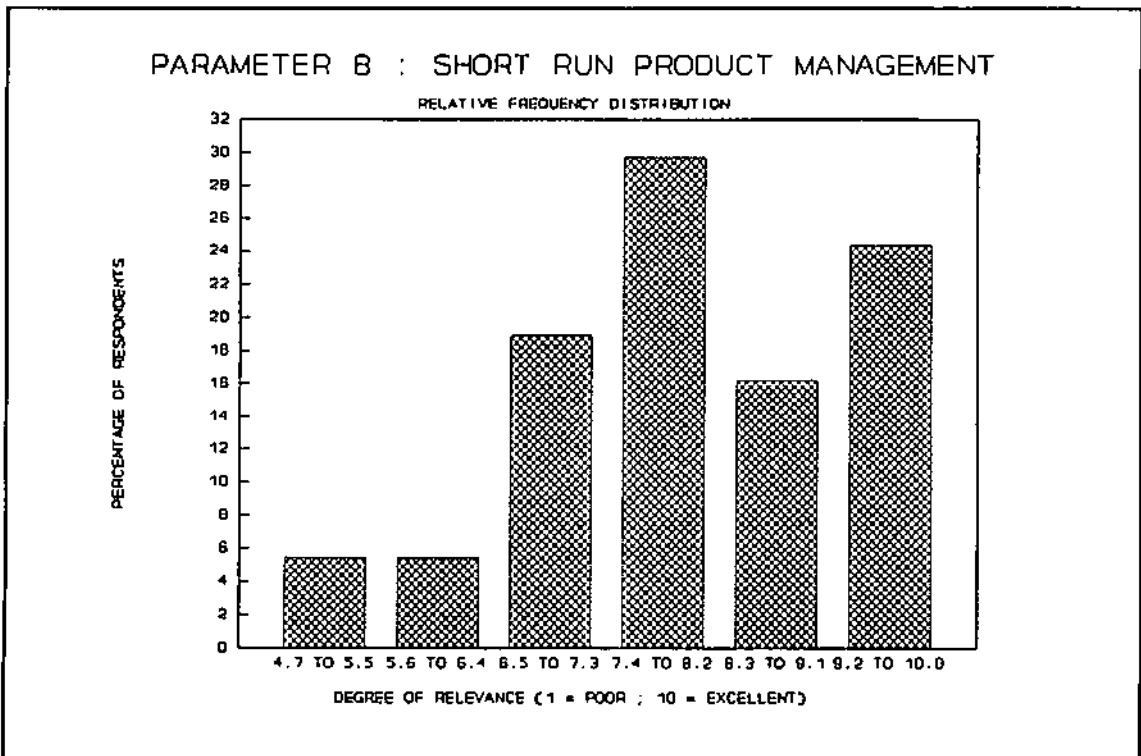
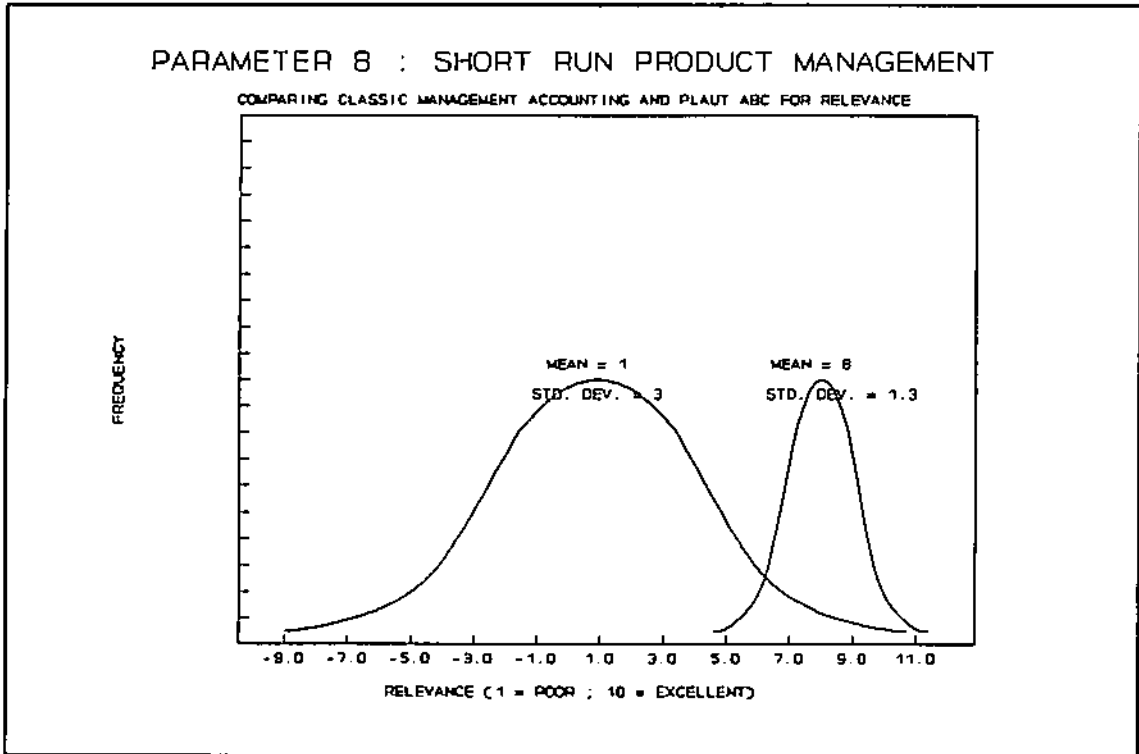


Figure 10.15 shows the relative frequency distribution for parameter 8: Short run product management, representing the responses received. This distribution has a mean of 8.0 and a standard deviation of 1.3. It can, therefore, be concluded, at the 99.8 % confidence level, that the population mean for Plaut ABC users, for the parameter short run product management, lies between 7.41 and 8.59.

Figure 10.16 shows the comparative distributions for the parameter - Short run product management.

Figure 10.16



5.9. Plaut ABC relevance - Parameter 9 : Long run product management.

Figure 10.17 shows the relative frequency distribution for the final parameter for relevance : Long run product management. The distribution has a mean of 8.0 and a standard deviation of 1.1. At the 99.8 % confidence level the population mean for Plaut ABC users for the parameter long run product management lies between 7.5 and 8.5.

Comparative information appears in Figure 10.18 for this

Figure 10.17

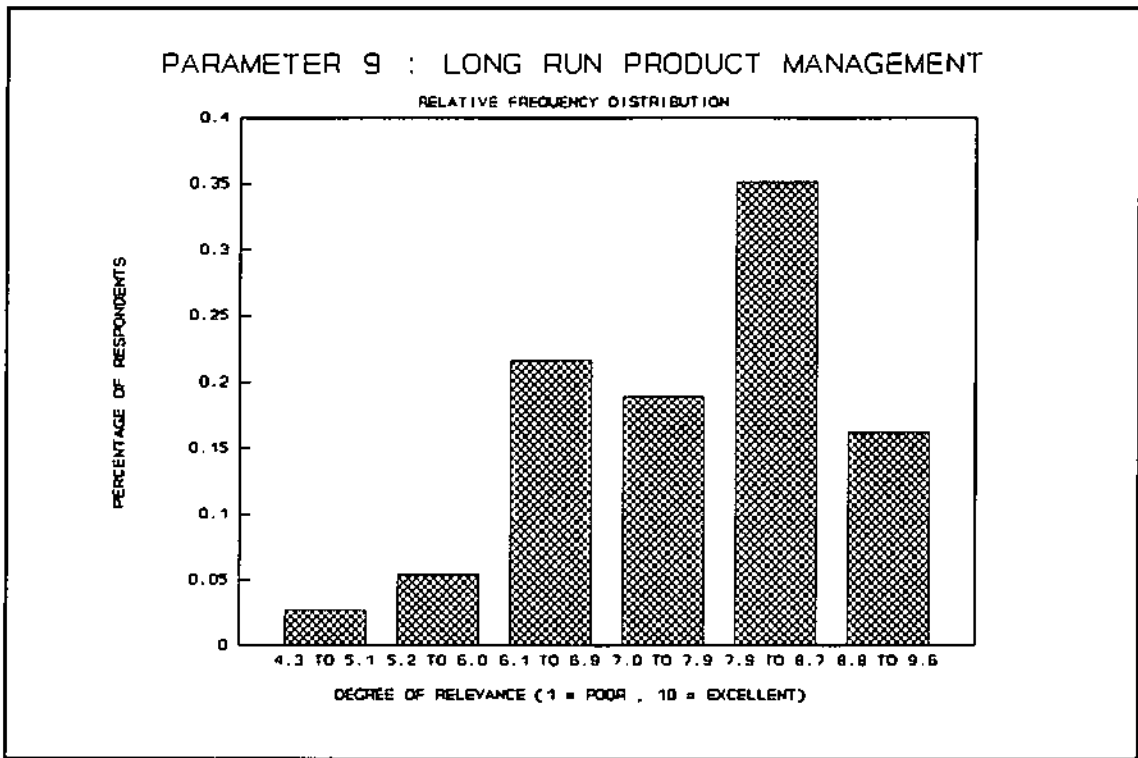
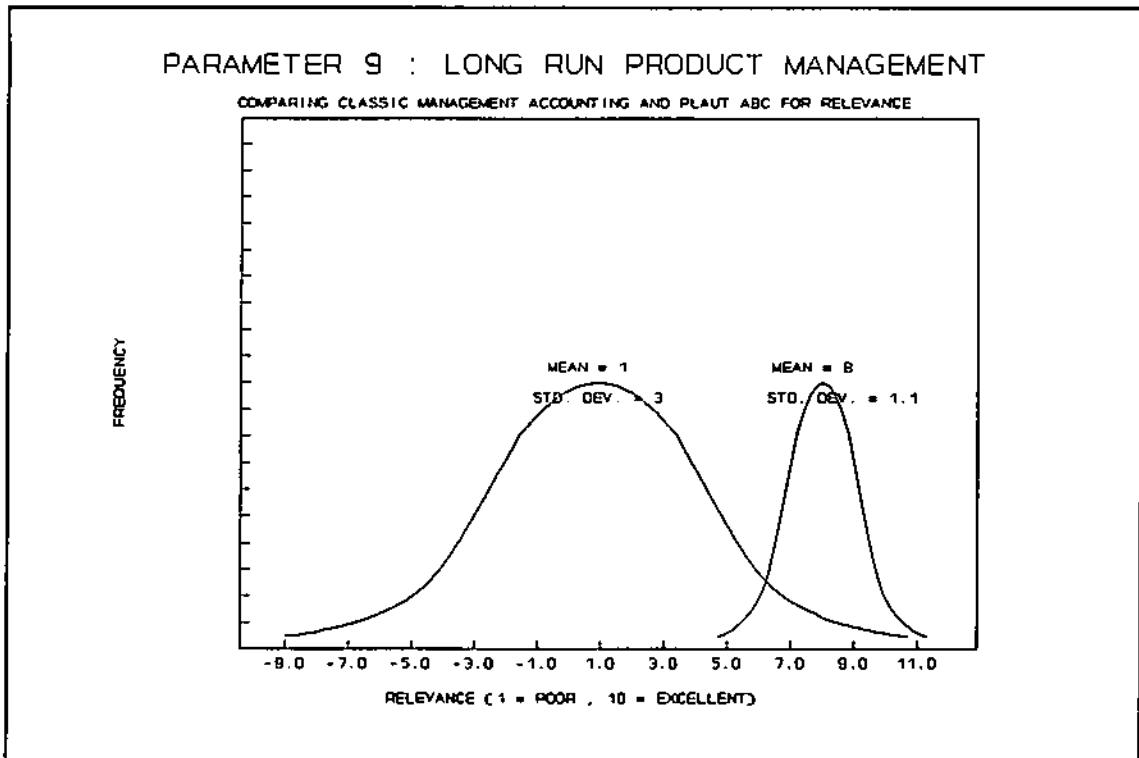


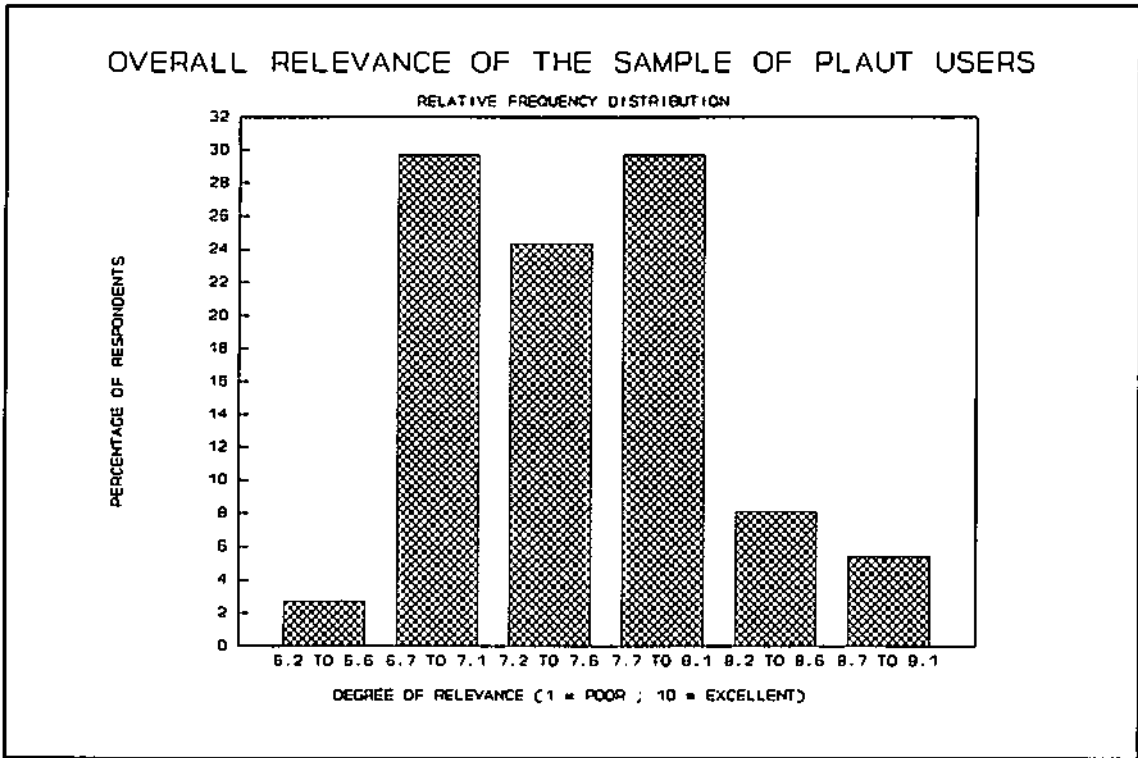
Figure 10.18



parameter. It is interesting to note that the two distributions representing product management are very similar.

6. Estimating the population mean for overall relevance of the Plaut ABC concept.

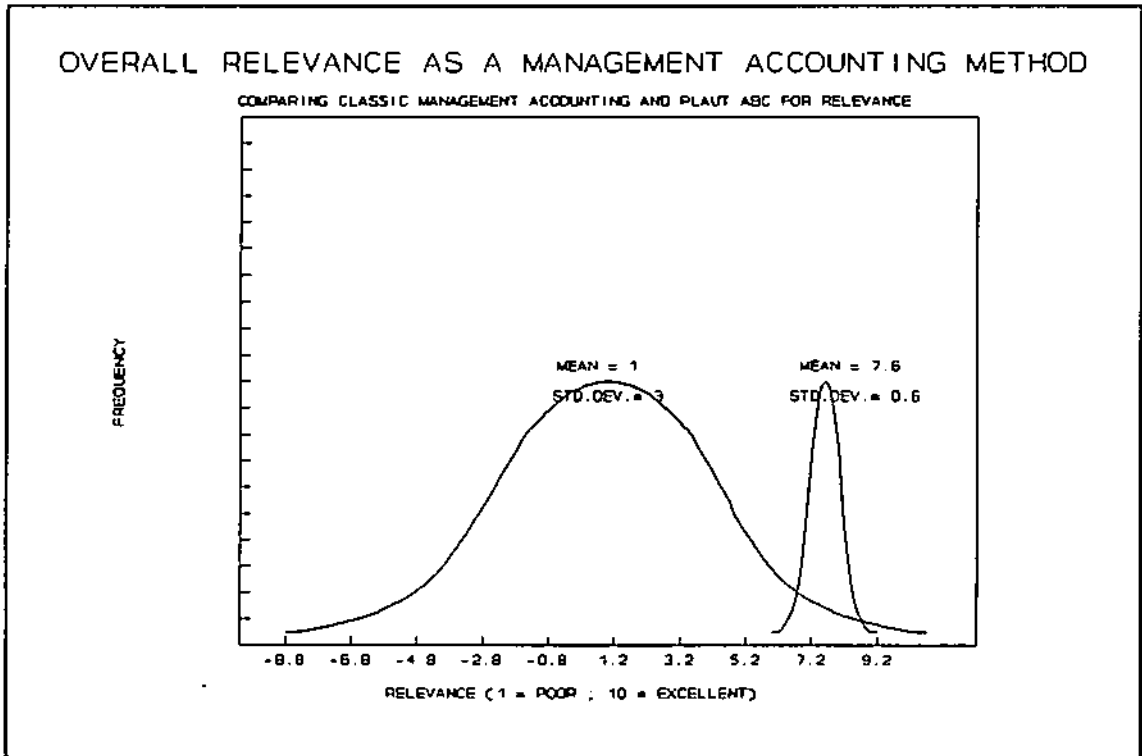
Figure 10.19



Finally, Figure 10.19 shows the relative frequency distribution for the overall relevance of the sample of Plaut ABC users. This distribution was arrived at by calculating the relevance per respondent for all nine parameters and adding up all the answers. The result of this calculation is presented as a distribution in Figure 10.19. The distribution has a mean of 7.5 and a standard deviation of 0.6. The population mean for Plaut ABC users with regard to overall relevance of the concept can therefore be estimated with 99.8 % confidence to lie between 7.23 and 7.77.

The comparative standard normal distributions are shown in Figure 10.20. The higher degree of relevance for Plaut ABC is evident from this figure. Of specific significance is

Figure 10.20



the narrow dispersion for Plaut ABC relevance. This would be indicative of the high degree of relevance that will be enjoyed by any, present or future, Plaut ABC user. The possibility does however exist that the difference in relevance, as seen in the figures, are not real differences. A statistical test must be carried out to prove that the mean for Plaut ABC of 7.5 and the mean for CMA of 1 are not means of two samples from the same population.

7. Testing for the difference between two means.

7.1. Introduction.

An interval estimate for the mean degree of relevance for the Plaut ABC concept has been determined. For the purpose of this analysis a point estimate of the mean is needed. The point estimate that will be used will be that value that has the highest statistical probability of occurring, i.e. the value in the centre of the confidence interval. Naturally, this value equals the sample mean previously calculated.

The population mean for the degree of relevance for CMA will be equal to the value of one, as previously explained.

7.2. The hypotheses.

The nil hypothesis is: The population mean for companies that have implemented Plaut Activity Based Costing is equal to one.

$$H(\text{sub-zero}) : \mu = 1$$

The alternate hypothesis is: The population mean for companies that have implemented Plaut Activity Based Costing is greater than one.

$$H(\text{sub-one}) : \mu > 1$$

The significance level that will be used in the test will be 99.8. This means there will be a 0.2 % chance that the nil hypothesis will be incorrectly rejected.

Note that the coding of responses with the mean for CMA being equal to 1 and the answer depicting the highest possible degree of relevance as 10, means that the standard deviation that must be used for CMA is equal to 3. This has the effect of tilting the scale slightly in favour of CMA in the test for the difference between two means. The larger the standard deviation, the bigger the dispersion and the more likely then that the mean for Plaut ABC will be indicated as not significantly different from the population mean for CMA. The population standard deviation for the Plaut ABC concept will again be estimated using the sample standard deviation.

The sample size that will be used for CMA in the test will be 31, this is the minimum requirement to be able to use the standard normal distribution and the z-table. This will again tip the scale in favour of CMA in the test, since it has the effect of allowing a larger margin of error the smaller the sample size. Given the large amount of research already done on CMA (Refer to Chapter 8) the sample size could, in fact, be much larger.

Since the sample sizes are bigger than 30 and the populations' standard deviations are known, the standard normal distribution will be used together with the z-table.

7.3 The test for the difference between to means.

The first step is to calculate the estimated standard error

of the difference between the two means. This is done with the following formula:

$$\sigma(\text{diff. two means}) = \sqrt{(\sigma_1/n_1) + (\sigma_2/n_2)}$$

In words : The standard error of the difference between two means is equal to the square root of (the estimate of the standard deviation of population 1 divided by sample size 1) plus (the estimate of the population standard deviation for population 2 divided by its sample size).

$$\begin{aligned}\sigma(\text{diff. two means}) &= \sqrt{(3/31) + (0.6/37)} \\ &= \sqrt{0.1 + 0.016} \\ &= \sqrt{.116} \\ &= 0.336 \\ &\quad \Longrightarrow\end{aligned}$$

The z-value for a confidence level of 99.9 %, for a one-tailed test, is equal to 3.09. Since the nil hypothesis is that the difference between the two means is equal to zero, the upper limit to be used in the test is calculated as follows:

$$\begin{aligned}\text{Upper limit} &= 0 + (z\text{-value} \times \sigma(\text{diff. two means})) \\ &= 0 + (3.09 \times 0.336) \\ &= 1.04 \\ &\quad \Longrightarrow\end{aligned}$$

Subtracting the two population means we get:

$$\begin{aligned}\text{Actual difference} &= \text{Plaut mean} - \text{classic mean} \\ &= 7.5 - 1\end{aligned}$$

$$= 6.5$$



8. Findings of the research report.

The finding of this report is therefore that the Plaut ABC concept gives a far greater degree of relevance than CMA. This statement is based on the fact that the actual difference between the two means, 6.5, falls far outside the upper limit of 1.95, calculated for a confidence interval of 99.9 %. Even if one had to take a value for Plaut ABC mean relevance much closer to the mean of CMA, at a point three standard deviations to the left of 7.6, the test still proves its superior relevance

Plaut ABC is indeed a management accounting method that ensures relevance today, no need therefore exists to use small personal computer solutions of ABC, as part of a process to fully integrated software, and no reason suffice to stick to an outdated approach like CMA.

9. Conclusion.

This concludes the chapter on the findings of the research report. In the next chapter a more detailed analysis and discussion of the findings will be given.

Chapter 11

1. Introduction.

In this chapter a detailed analysis of the responses received from Plaut users will be done. Some demographic information will be given in paragraph 2. This will be followed by a detailed discussion of the responses received for each parameter for relevance. Finally, the advantages and disadvantages of the Plaut ABC concept as seen by its current users will be discussed.

2. Demographic information and validity checks.

- Question 1.1 : Which one of the following best describes your industry?

Figure 11.1

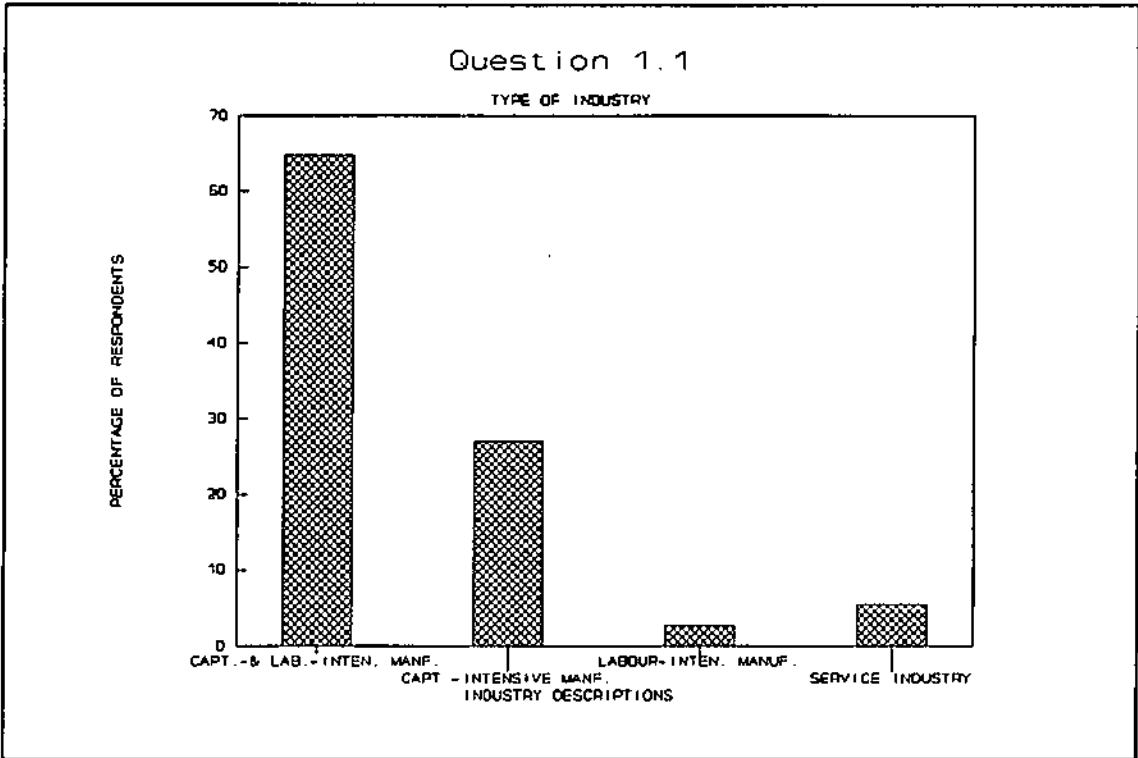


Figure 11.1 gives an indication of the types of industries

that were involved in this research project. By far the largest percentage of respondents were from the capital- and labour-intensive manufacturing industries. More than 90 % of respondents are active in industries with some degree of capital intensity. Considering the potential for alternate cost drivers in such an environment, Plaut ABC can be expected to do well when rated for cost allocation.

- Question 1.2 : Which of the following production processes do you have?

Figure 11.2

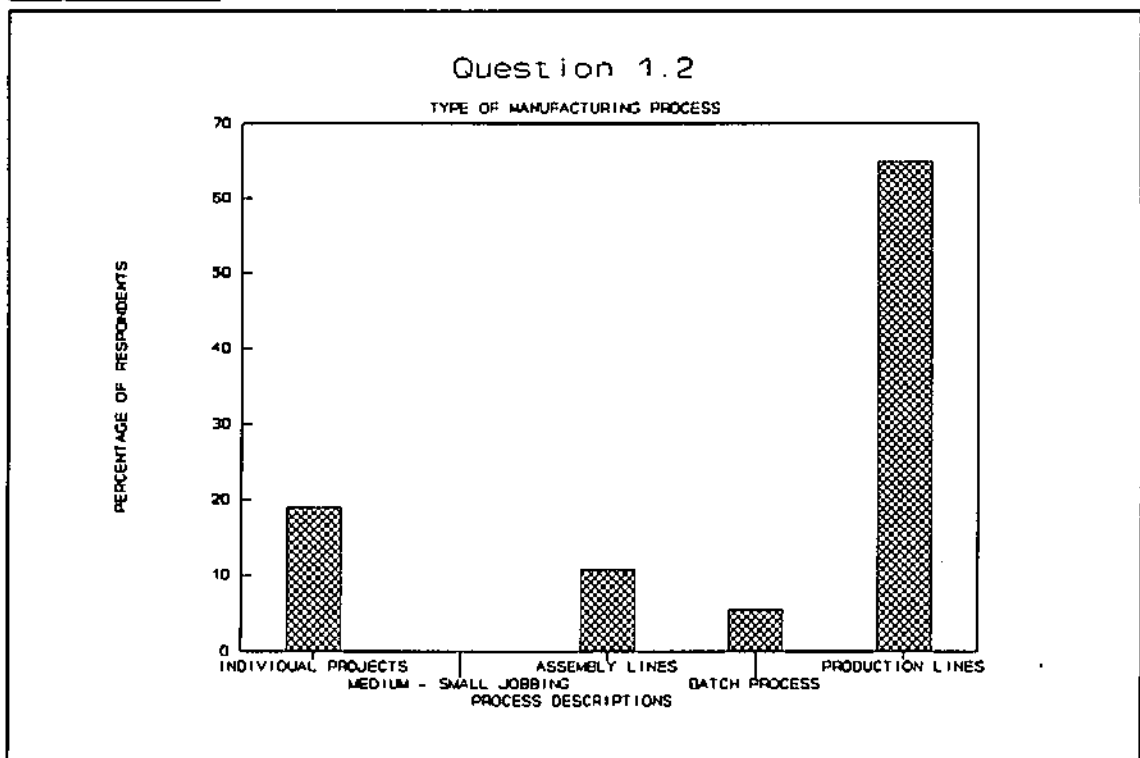


Figure 11.2 gives a breakdown of the type of production processes in use by the respondents. Production lines is the dominant process, almost in the same proportion as for capital- and labour-intensive manufacturing in Figure 11.1

above. The absence of companies with a medium to small jobbing production process came as a surprise. An explanation for this could be that medium to small jobbing companies are normally not big organisations. Small- to medium-sized companies might not be that willing to pay the premium price that Plaut ABC costs.

- Question 1.3 : How many baseline products do you offer in the market place?

Figure 11.3

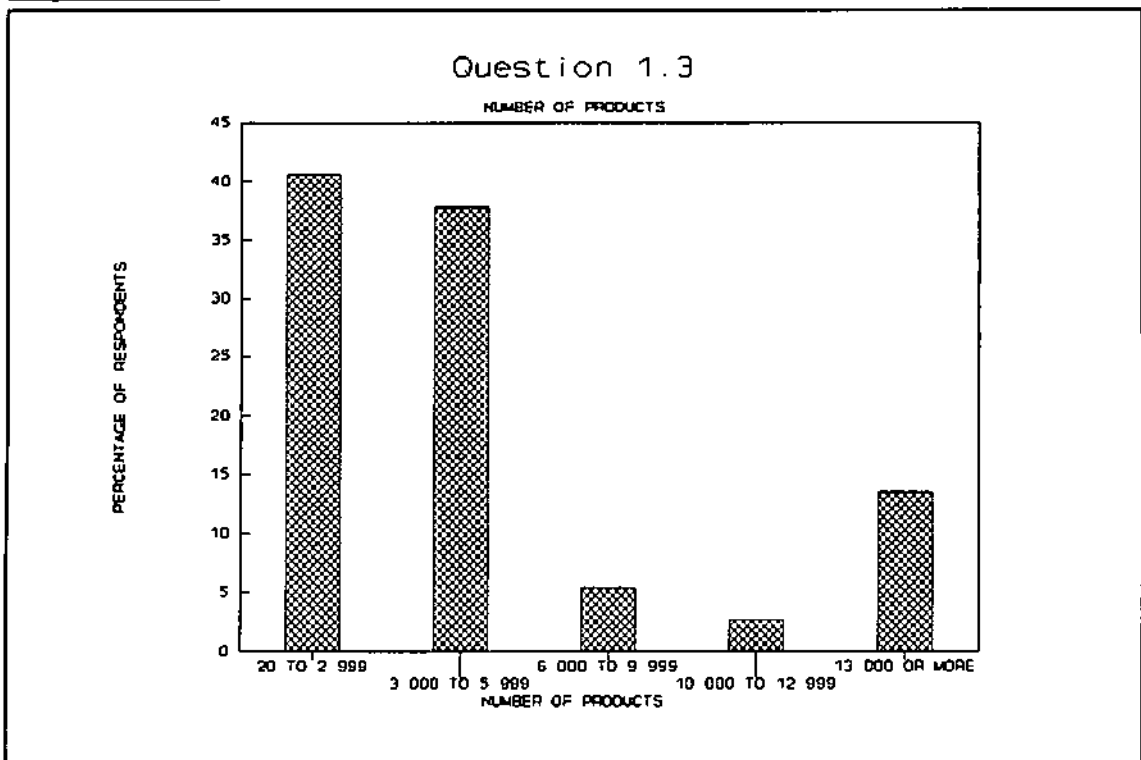


Figure 11.3 shows a distribution that indicates the number of baseline products manufactured by the respondents. Note that because the research project's target population was, amongst others, defined as multi-product companies, no companies with less than 20 custom products were selected.

The highest number of products manufactured by a respondent was 60 000. Within this environment the treatment of product costing as a separate discipline makes theoretical sense, one could therefore expect a relatively high rating for the Plaut ABC concept in this regard.

- **Question 1.4 : What costing method does your company use?**

This was a validation question, and no statistical information will be presented for it.

- **Question 1.5 : In what year was this costing method implemented?**

Figure 11.4

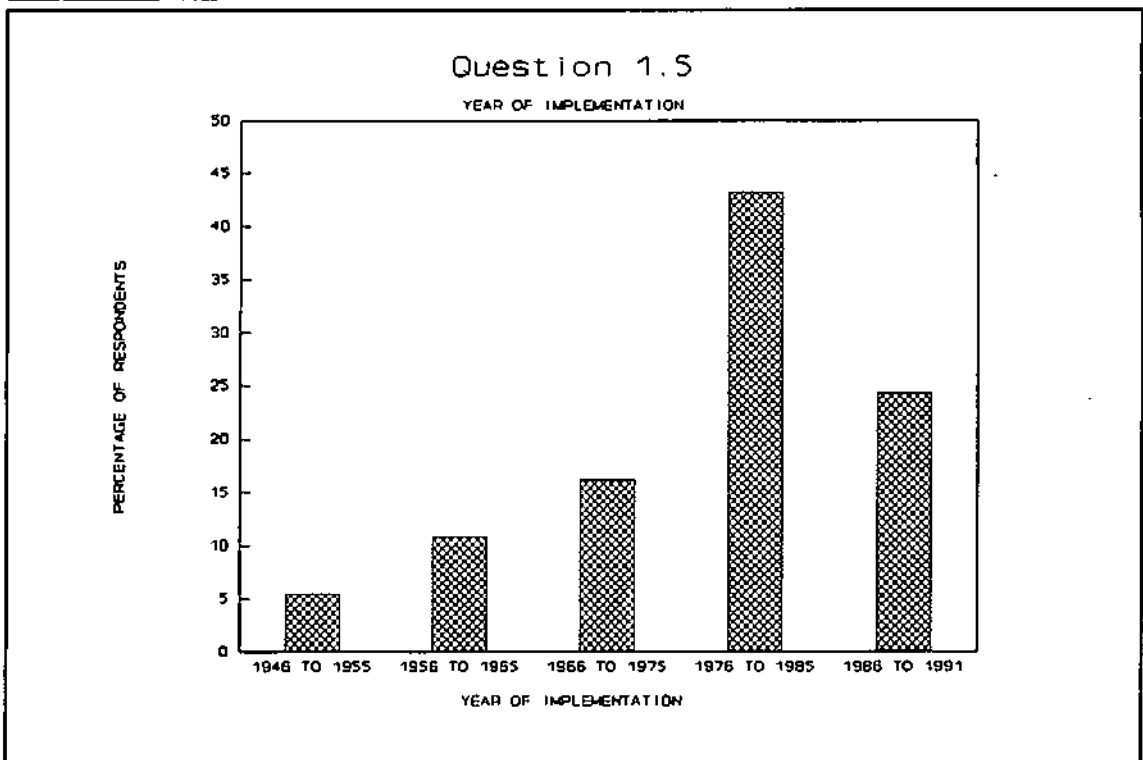


Figure 11.4 gives an indication of the year of implementation of the Plaut ABC concept in the companies

from the sample. Note that the sample contains responses from companies that implemented the Plaut ABC concept since the founding of the Plaut company. Note that the class indicating implementations for 1985 to 1991 does not signify a drop in the number of implementations, but:

- This class represents only 6 years, while the other classes represent periods of 10 years each.
- Although implementations of the Plaut ABC concept is an ongoing process, only companies with at least 2 years operational experience were included in the population. This effectively reduces the span of the last class to 4 years.

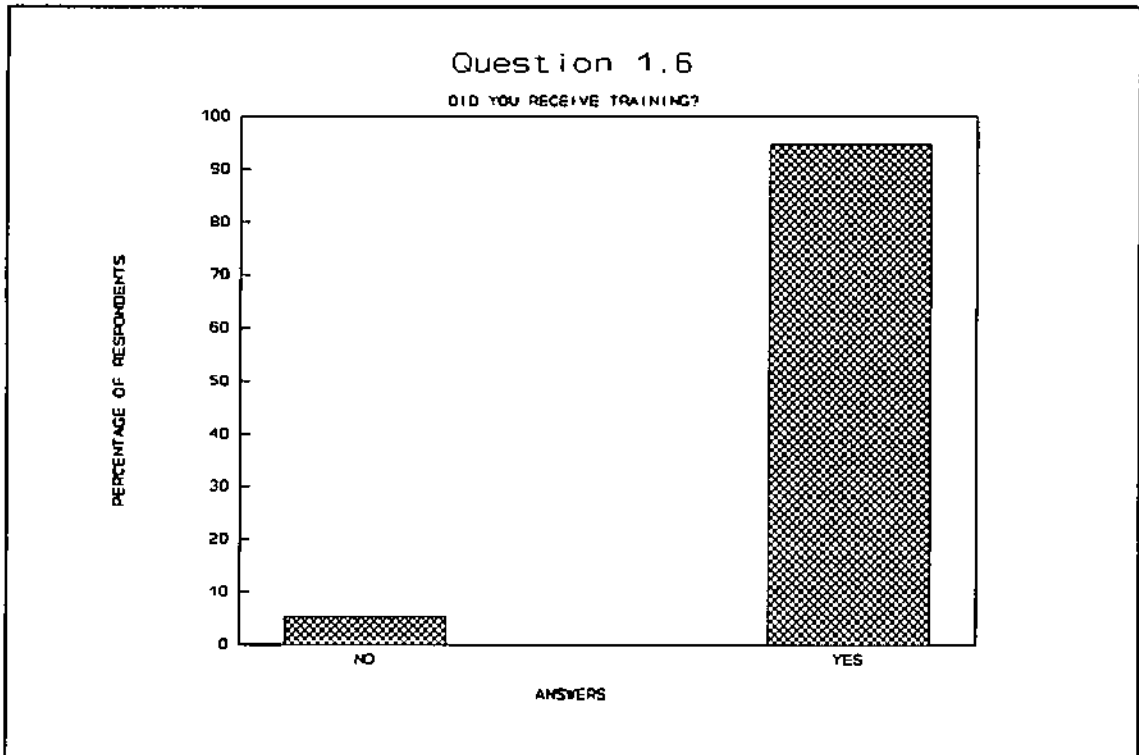
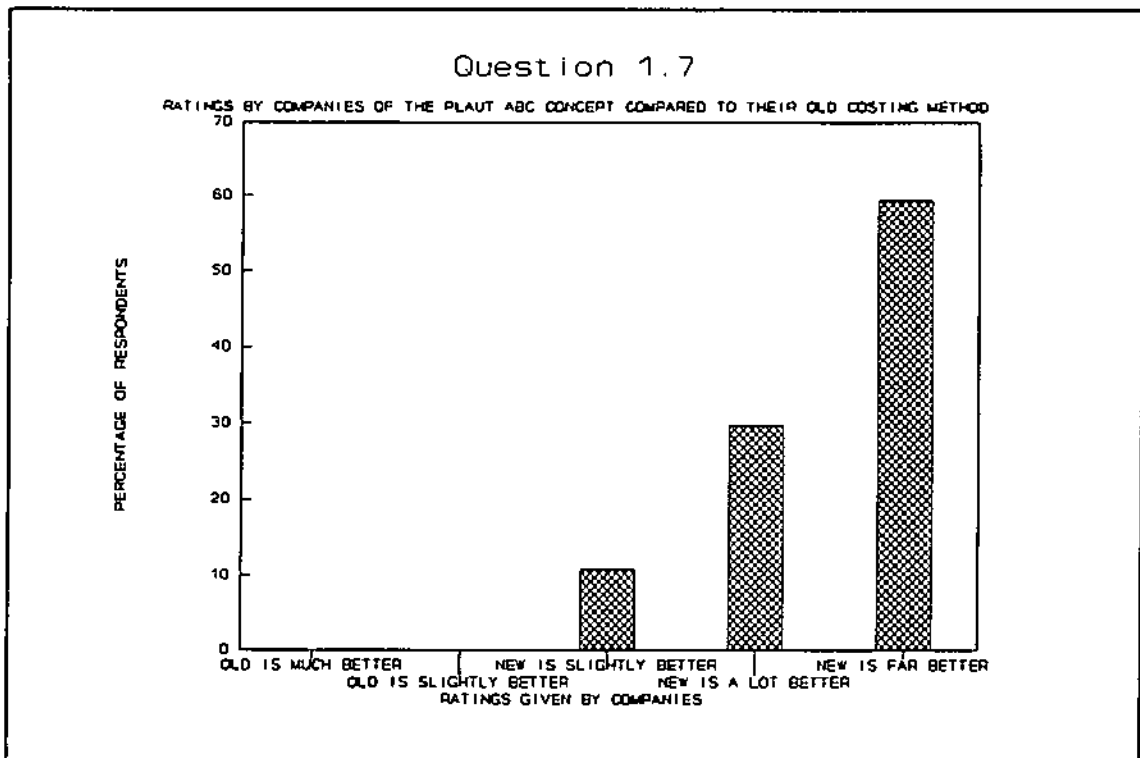
The bar indicating the number of implementations for 1985 to 1991 does therefore not indicate a reduction in implementations.

- **Question 1.6 : Did you receive special training on how to use this costing method?**

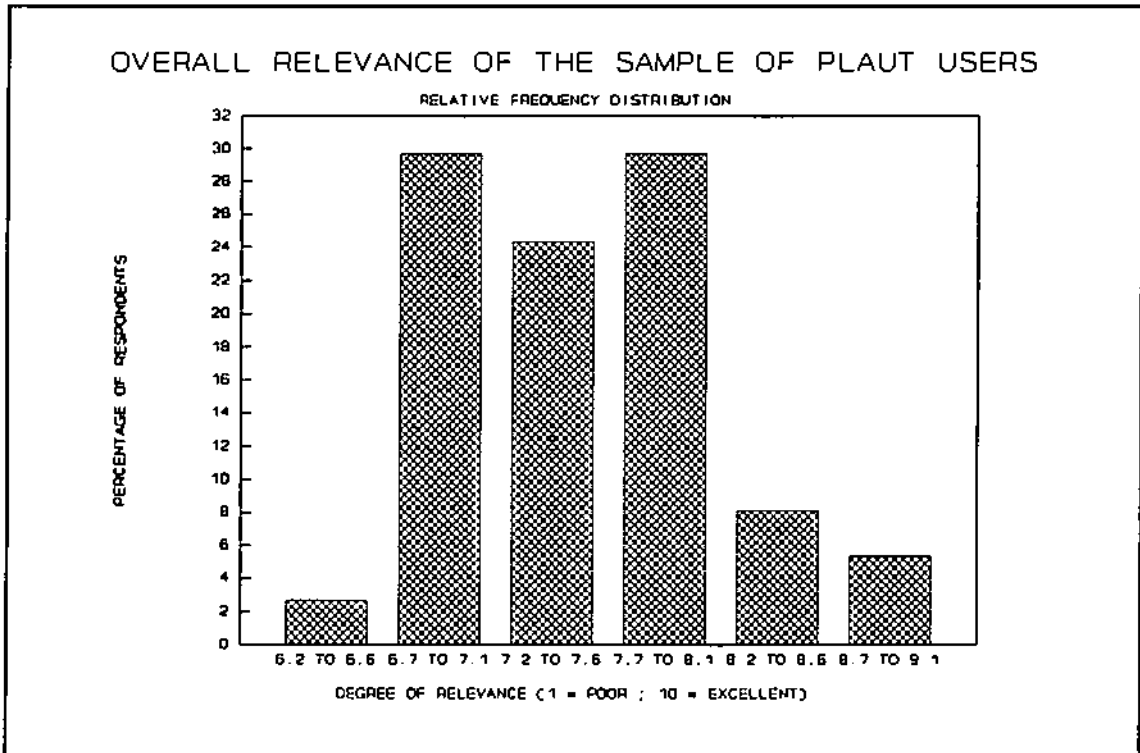
Figure 11.5 shows the responses that were received for this question. The 5, % i.e. 1 respondent, that did not receive training, is nonsensical and is considered an error.

- **Question 1.7 : How does the overall usability of your old and new costing methods compare?**

Question 1.7 was intended as a validity check for the questionnaire as a whole. Figure 11.6 is a representation of the responses for this question. A respondent's answer here had to correlate with his overall rating of the Plaut ABC concept as measured against all nine the parameters for

Figure 11.5**Figure 11.6**

relevance. Coding for Figure 11.6 data was, 'Slightly' = 4, 'A lot' = 7 and Far better' = 10. This corresponds with the range of values in the frequency distribution in Figure

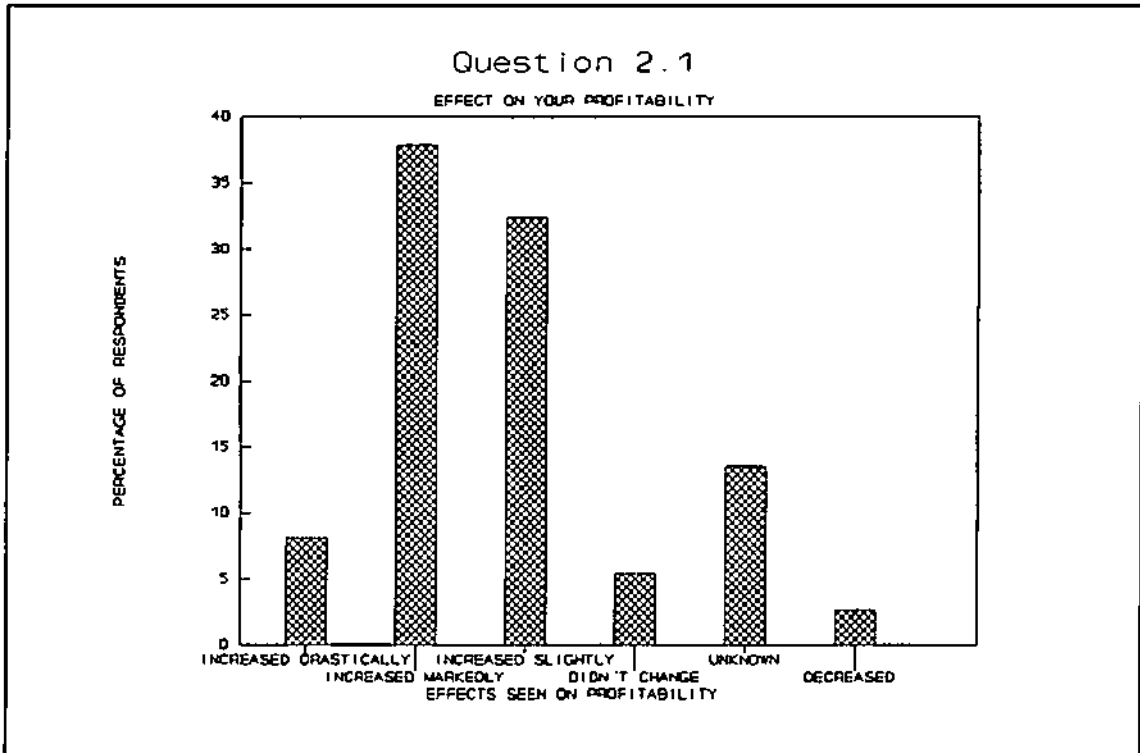
Figure 11.7

11.7. The latter represents the overall relevance of the Plaut ABC concept from Chapter 10. No questionnaire had to be rejected because of inconsistency between a respondent's rating in Question 1.7 and his overall rating for Plaut ABC relevance.

3. Parameter 1 : Profitability.

- Question 2.1 : What was the effect of your current costing method's implementation on your company's profitability?

Figure 11.8 gives an indication of the answers that were marked. Only one respondent saw a decrease in profitability. By far the majority of respondents saw an increase in profitability, in fact 6 % experienced a drastic increase in profitability. 77 % of Plaut users saw

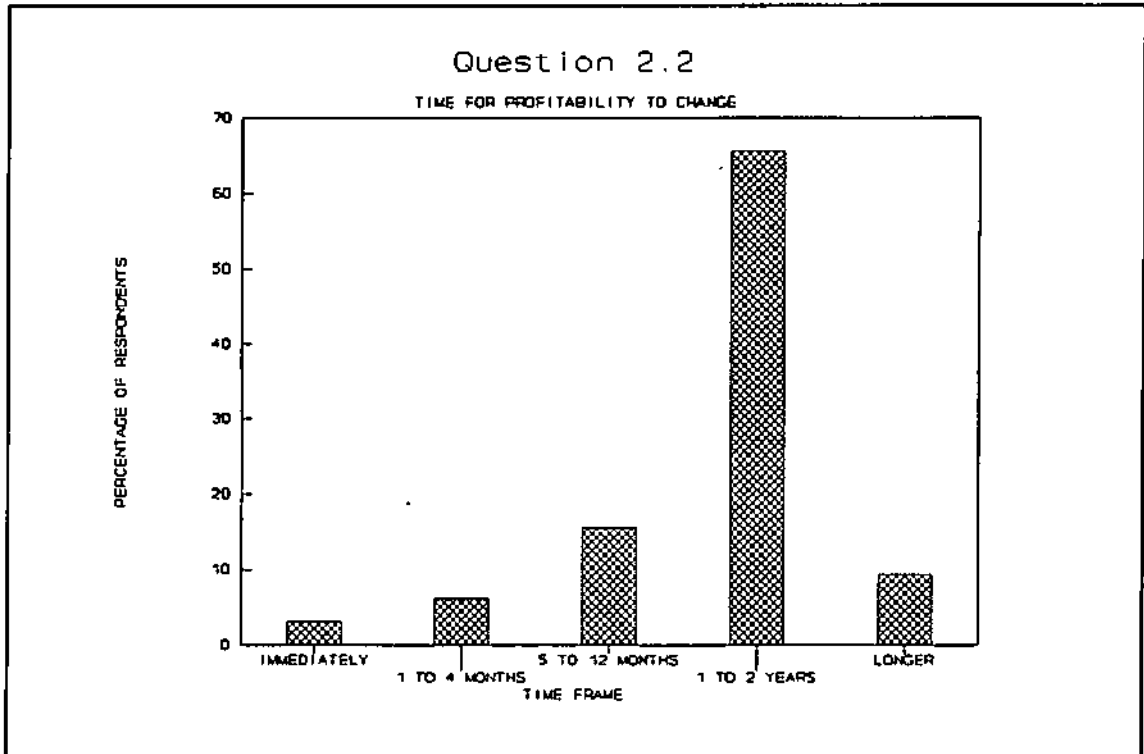
Figure 11.8

an increase in profitability which they attribute to the introduction of their management accounting system. Those respondents that marked the option 'Unknown' were without fail companies that had implemented Plaut ABC 30 or more years ago. The lack of historic information for periods that far back seems a plausible explanation.

- Question 2.2 : How long after implementation did profitability change?

Question 2.2 determined the time frame needed for profitability to change. Almost 65 % of respondents, who saw a change in profitability, reported the change within 1 to 2 years after implementing the Plaut ABC concept. (Refer to Figure 11.9). There are two possible explanations for this:

- The companies need to spend a year or two with the

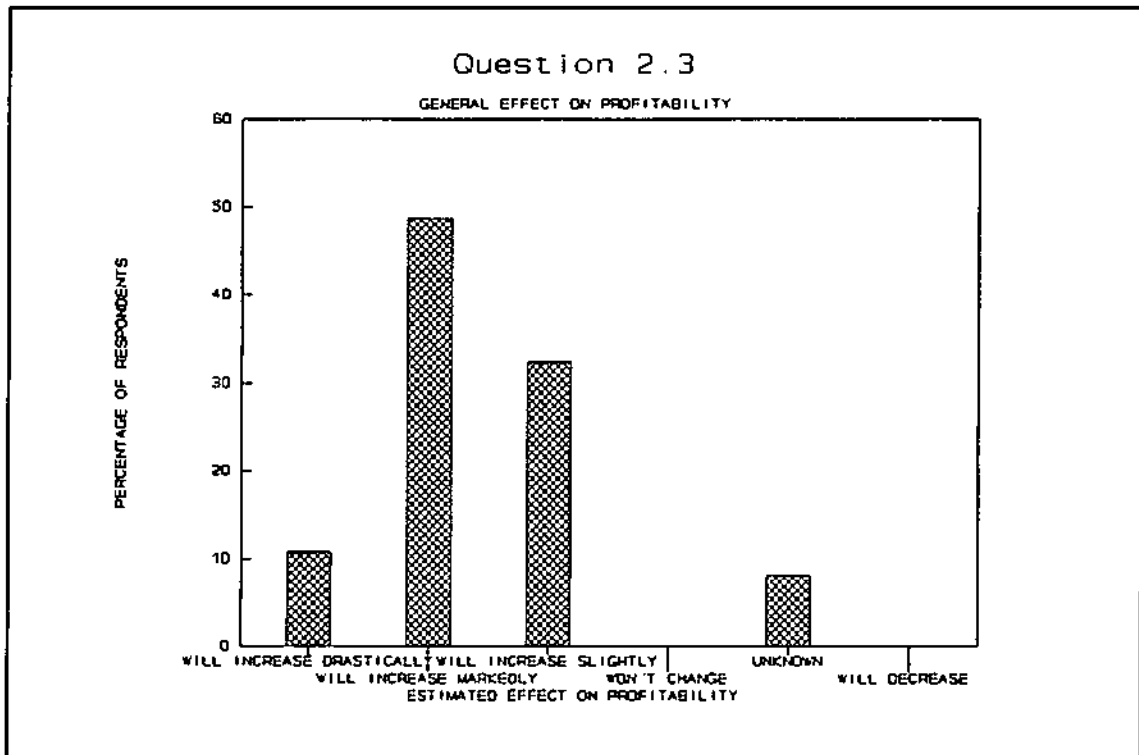
Figure 11.9

system to become totally at home with it and thus derive benefit from it.

- The benefits relating to profitability to be had from Plaut ABC are related to more medium-term strategic issues such as 'make-buy' of services or the discontinuance and introduction of old and new products respectively.

For the moment this issue will be left unanswered until the individual areas, 'make-buy' and product management, are discussed below. The discussion of advantages and disadvantages of the concept should also shed some light on this issue.

- **Question 2.3 : A company that for the past ten years showed poor profitability and had return on investment below industry average, decides to implement your costing**

Figure 11.10

method for the first time. Their predicament is largely due to internal inefficiencies and inadequate control. Given that external factors do not cause inordinate rises in profits, what do you think would be the result of such an implementation on this company's profitability?

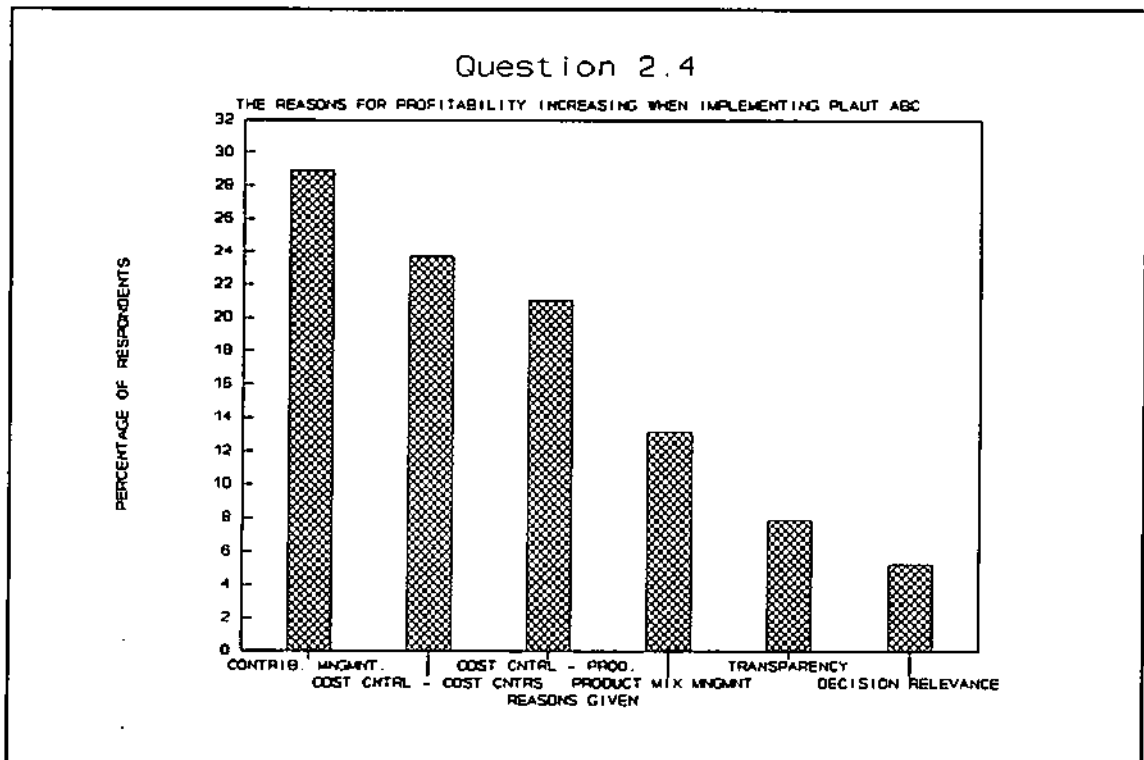
Question 2.3 was included to test respondents' meanings on the effect, of implementing Plaut ABC, on profitability in a given instance. The case presented, highlighted internal problems. The responses received on this question is represented by the frequency distribution in Figure 11.10. It is interesting to note that the respondent who saw an actual decrease in his profitability in Question 2.1 indicated a different answer here in Question 2.3. This respondent did in fact indicate in this instance that the company's profitability would increase slightly. In Question 2.3 the number of 'Unknown' and 'Won't change'

answers are significantly less than in Question 2.1.

Question 2.3 was formulated in such a way that it contained two shortcomings of CMA. From the responses one can conclude that a switch from CMA to Plaut ABC will almost surely result in an increase in profitability. This statement is underscored if a comparison is made of the similarity between the answers to Question 2.1 (Figure 11.8) and Figure 11.10 here.

- Question 2.4 : Why did you mark the answer which you did Question 2.3 above?

Figure 11.11



Question 2.4 was an open question that allowed respondents to motivate their answer given in Question 2.3. The

responses received, are graphically represented in Figure 11.11. Note the following about the reasons given as to why profitability will increase:

- The answers here reiterates what has been said above about the actual time frame involved for profitability to change. The four main reasons are all issues that can only be addressed effectively in the time frame of 1 to 2 years.
- Improved cost control on cost centres and products again highlight the issues of internal inefficiencies and inadequate control.
- There is not really an overtly dominant reason emerging. This is indicative of the wide scope that Plaut ABC theory covers. Note that all three the main-line theoretical disciplines are represented in the top three reasons, namely contribution margin management(Chapter 5), cost centre accounting(Chapter 3) and product costing(Chapter 4) - in that order.
- Product mix management is an interesting case. Within a multi-product environment classic management accounting has been heavily criticised for its inaccurate product costs. Product mix management, ranked fourth, is indicative of this and of the actual experience of respondents in that they themselves had to cut products previously thought to be profitable under CMA.
- Transparency refers to the clarity of information and the understanding of its implications.

In conclusion then on the parameter of profitability. From the above information it is evident that the Plaut ABC concept has a profound and positive impact on a company's profitability. This statement must be seen against the following background. All the companies were previous users of the CMA approach, any increase in profitability experienced by the respondents is indicative of the superiority of the Plaut ABC concept.

It can also be said that Plaut ABC effectively addresses a whole spectrum of issues to improve profitability. It is therefore not 'a-fix-one-problem' approach to improved profitability. This fact will stand it in good stead amongst any of the other options available in the market or being promulgated today.

4. Parameter 2 : Timeliness.

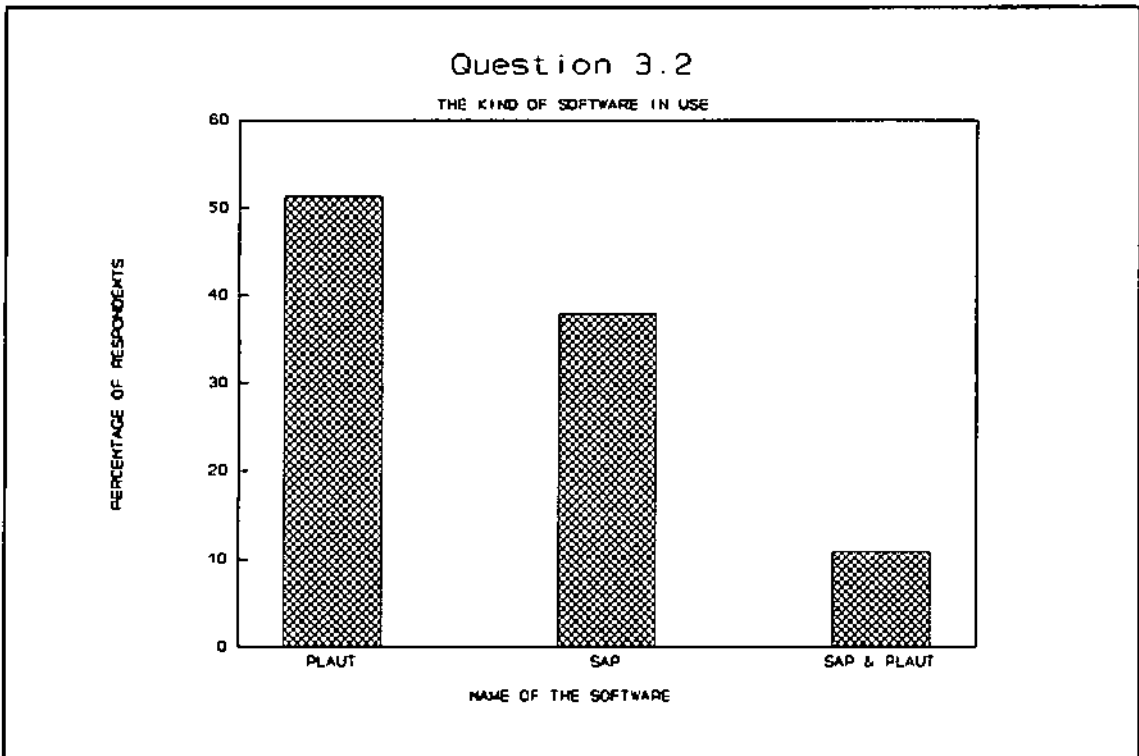
4.1. Introduction.

Timeliness is the one parameter for relevance, of the nine, that includes the influence of the mainframe software. Figure 11.12 gives an indication of the software in use with respondents. As stated in a previous chapter, some of the older Plaut software is still of a batch-processing nature. It is expected, and the software products are also sold stating this, that an integrated real-time on-line software package will give a higher degree of relevance than a batch-processing package.

For the overall analysis of Plaut ABC relevance, no distinction was made between these two types of packages,

due to the fact that timeliness was the only parameter where the software really had a major influence.

Figure 11.12



For the purpose of the analysis in this section, however, the on-line systems and the batch-processing systems will be separated. This will be done to determine the value of having an on-line integrated software package. Such an analysis will also be indicative of the maximum level of relevance one could expect from a PC approach to ABC. The degree of relevance obtainable through a PC should in fact be lower than that for mainframe batch-processing software, for the following reasons:

- A PC will be a parallel system that will also have to be updated in batch.
- A PC's inferior computing power.

- The lack of capacity to facilitate a comprehensive approach like Plaut ABC.

The discussion will commence with the on-line system and the information received on all the questions for the parameter of timeliness. This will be followed by a discussion of the responses received from batch operators. For the purposes of this analysis, respondents with on-line systems, which processed more than 50 % of costs in batch, were considered as batch-system operators.

4.2. On-line systems.

- Question 3.1a (on-line) : How many days after the end of a month, are formal cost centre reports available?

Figure 11.13

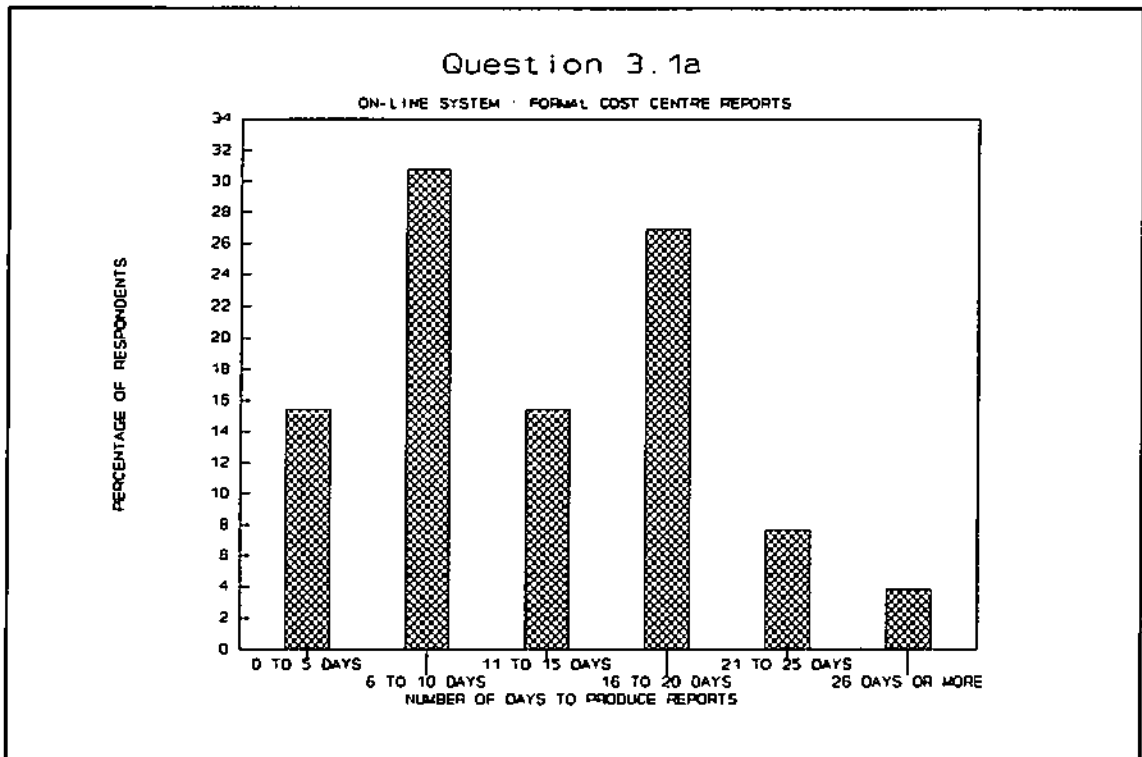


Figure 11.13 shows the graph for Question 3.1a, indicating

the days needed to produce formal reports for cost centres with an on-line system. Just over 60 % of on-line users are able to produce reports in 15 days or less.

- Question 3.1b (on-line) : How many calendar days after the end of the month are formal product reports available?

Figure 11.14

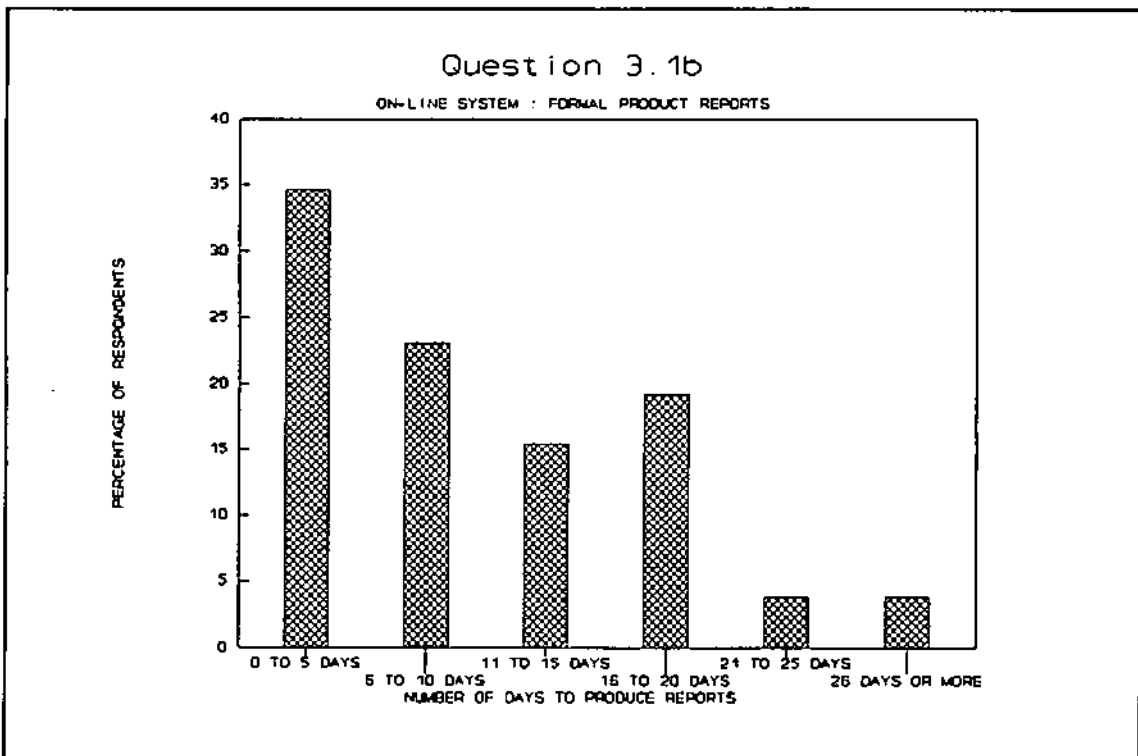


Figure 11.14 gives the days taken to produce formal product cost reports for an on-line system. More than 70 % of respondents produce formal product reports within 15 days of period closing. The information from Figures 11.13 and 11.14, at first glance, reveals unsatisfactory figures. One on-line operator took as many as 45 days, after month-end, to produce formal reports. Considering a mean of

about 15 days for an on-line system, it will be shown below that 10 % of pure batch operators manage formal reports within 5 days of month-end.

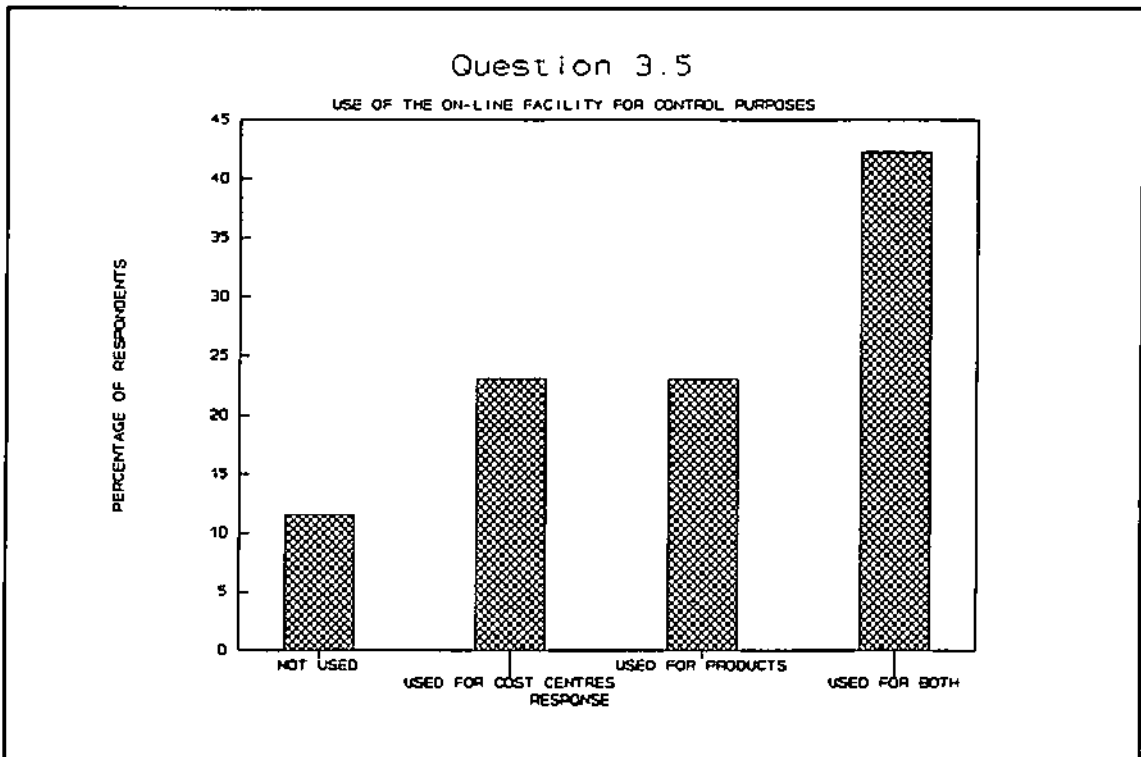
This phenomenon could be explained by one of two arguments:

- The concept of a true on-line system and its advantages cannot be realised in practice.
- On-line system users put much less of a premium on formal reports because of the system's on-line real-time capability.

To prove that the latter argument applies, one has to consider the responses received for Question 3.5.

- Question 3.5 : Does your company use the on-line facility

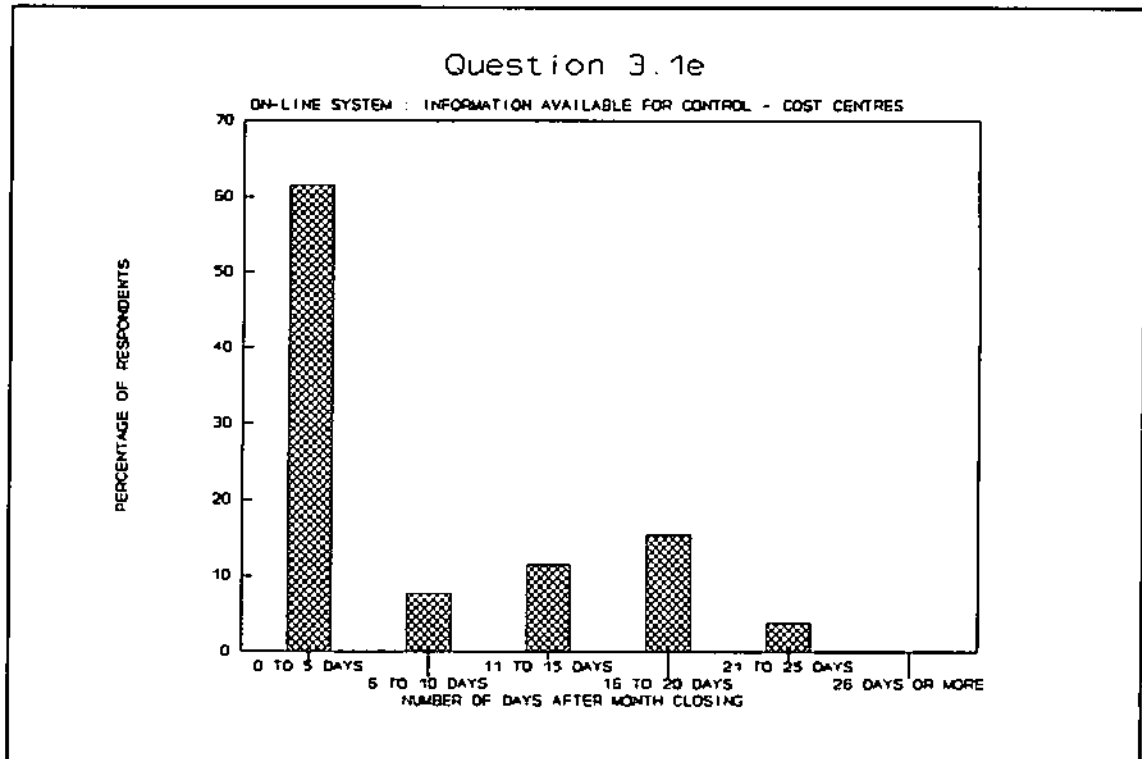
Figure 11.15



for cost centre and/or product reports and control?

Figure 11.15 indicates the extent to which the on-line facility is used for cost control on a day-to-day basis. 43 % of users use the on-line facility for both products and cost centres while 87 % use it for one or both of these. This is relatively high and sheds some light on the times taken to produce formal reports. Three respondents had indicated that they do not issue formal period closing reports to cost centres and 7 indicated this for products. In these instances the on-line facility is considered sufficient. Companies that are using the on-line facility are therefore less anxious to quickly produce formal closing reports.

Figure 11.16



If one now reconsiders the information given in Figures 11.13 and 11.14, the control capabilities of an on-line system looks noteworthy. Figures 11.16 and 11.17 indicates the number of days taken to have **information available** for control purposes. The information for these distributions was arrived at by recoding the formal report days from Question 3.1 with zero if a company indicated that it used the on-line facility for reporting and control. In these two figures the time taken to have information available is a big improvement on that shown in Figures 11.13 and 11.14.

- Question 3.4 : What percentage of total monthly costs is batch-processed at month-end?

Figure 11.17

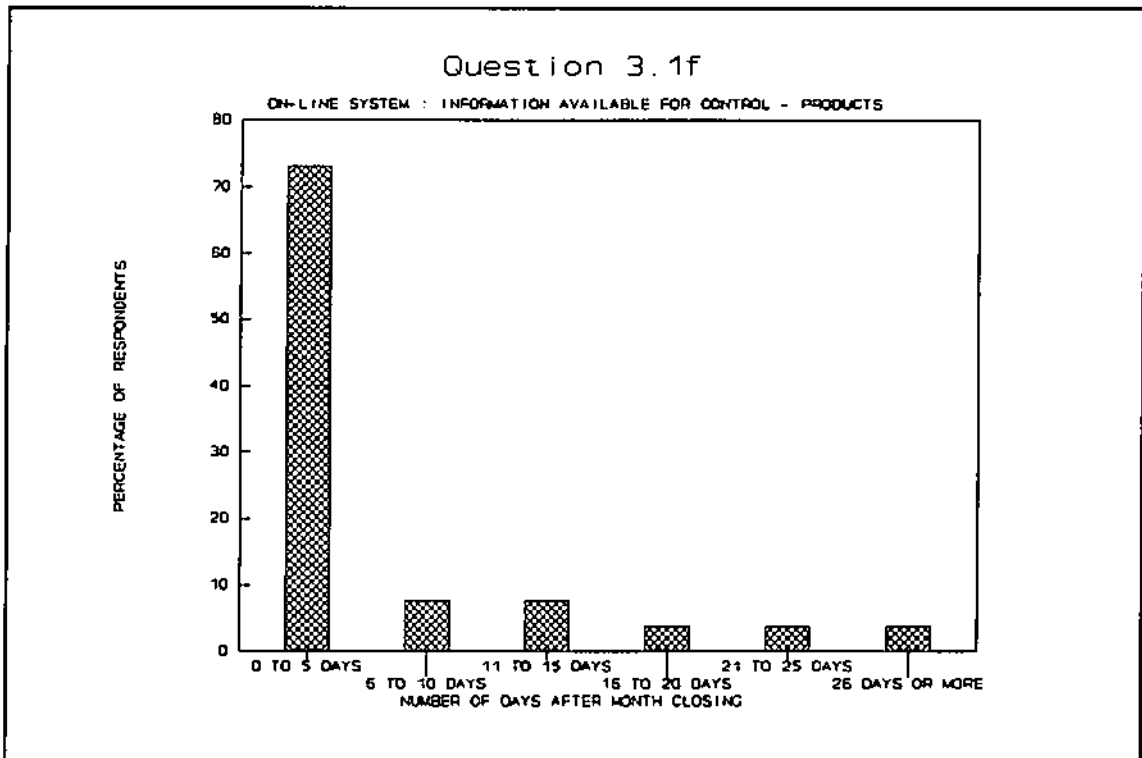


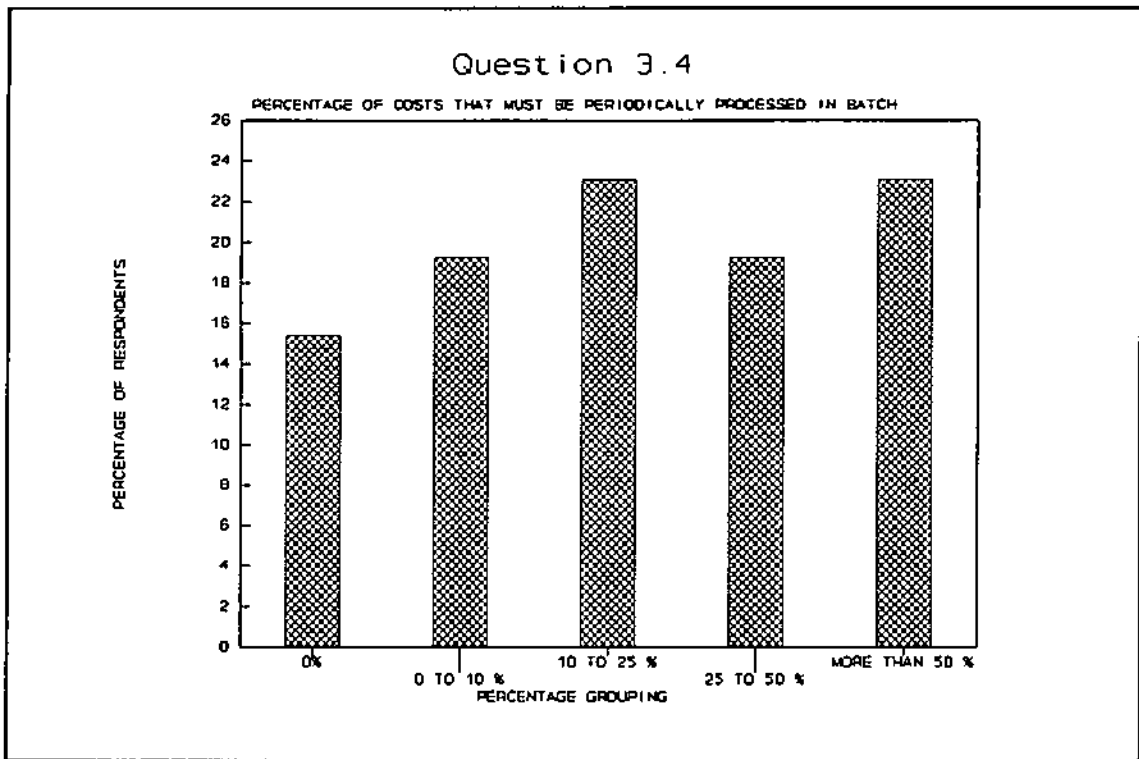
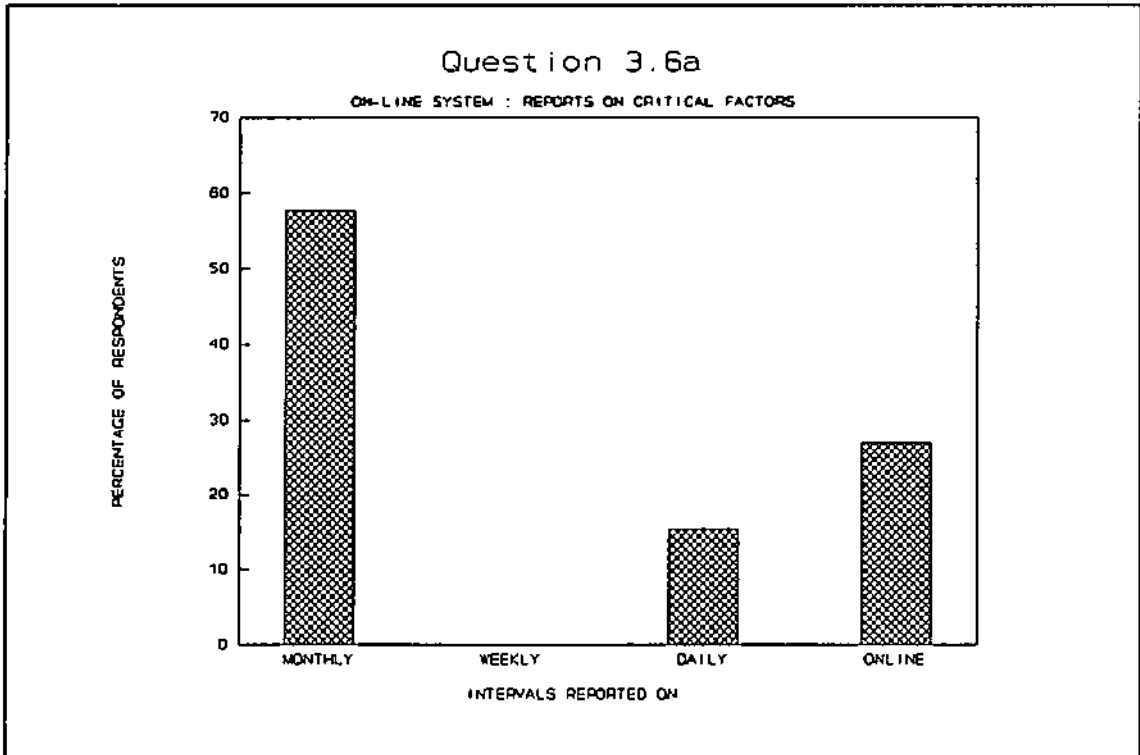
Figure 11.18

Figure 11.18 gives an indication to what extent SAP users have been able to capture the full advantage of an on-line real-time system. This is an important consideration, since control with an on-line system is dependent on the amount of costs immediately available. Only 15 % of users were able to gain the full benefit from the system. 57 % of users have less than 25 % of cost that must be processed in batch. It is important to note that batch processing mainly effects cost centre information. This is due to the fact that standard rates are booked of to the products times actual activity quantity. This also explains the relatively shorter periods taken to have information available for product cost control compared to cost centre information, as can be seen from Figures 11.16 and 11.17.

- Question 3.6 : At what intervals do you report on critical success factors?

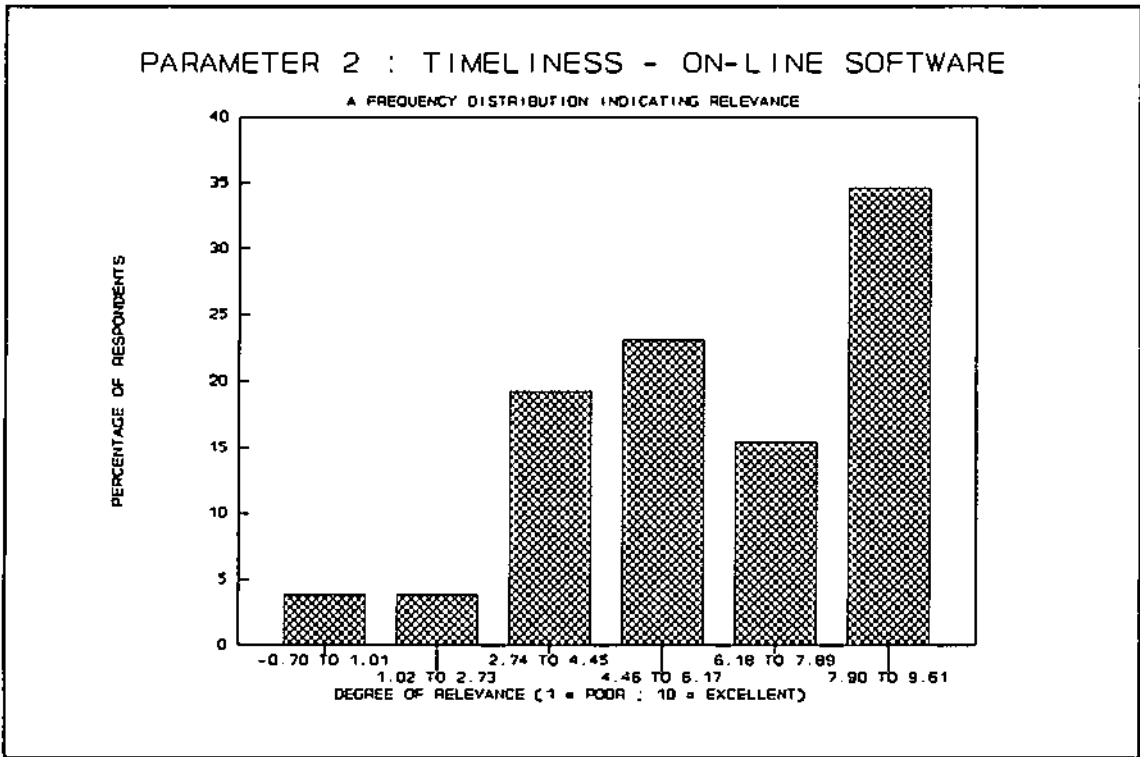
Figure 11.19



The last detail that was tested for, for the parameter of timeliness, was that of the reporting frequency on critical success factors. This can be seen in Figure 11.19. Although the on-line facility is used, almost 60 % of companies still only report on a monthly basis. This could be explained by the information from Figure 11.18 in that the bigger the percentage of cost not available on-line, the less likely it is that the information will be used for reports on critical factors. The on-line facility therefore has a limited advantage in reporting on critical success factors, given the current level of full integration.

Finally, Figure 11.20 shows a frequency distribution for the relevance of the Plaut ABC concept, for the parameter

Figure 11.20

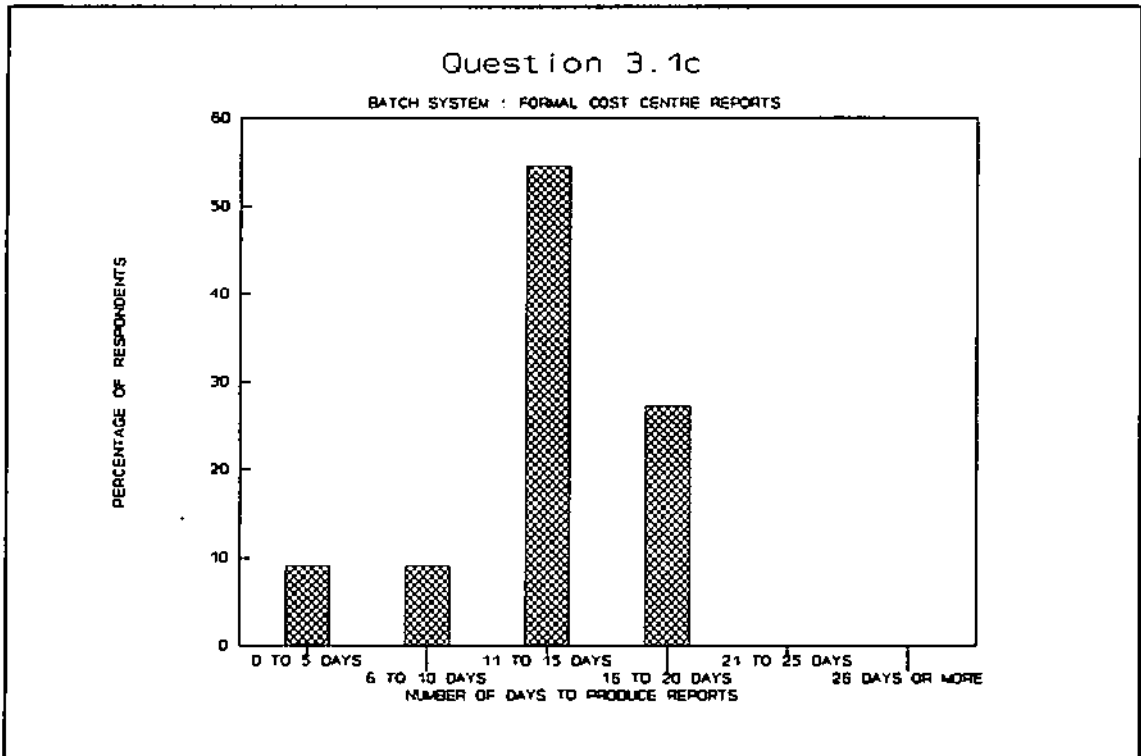


of timeliness, using a real-time on-line software package. The distribution has a mean of 6.1 and a standard deviation of 2.6. This compares favourably with the distribution in Figure 10.3 for Plaut overall relevance (batch and on-line) on timeliness.

4.3. Batch-processing systems.

- Question 3.1a (batch) : How many days after the end of a month, are formal cost centre reports available?

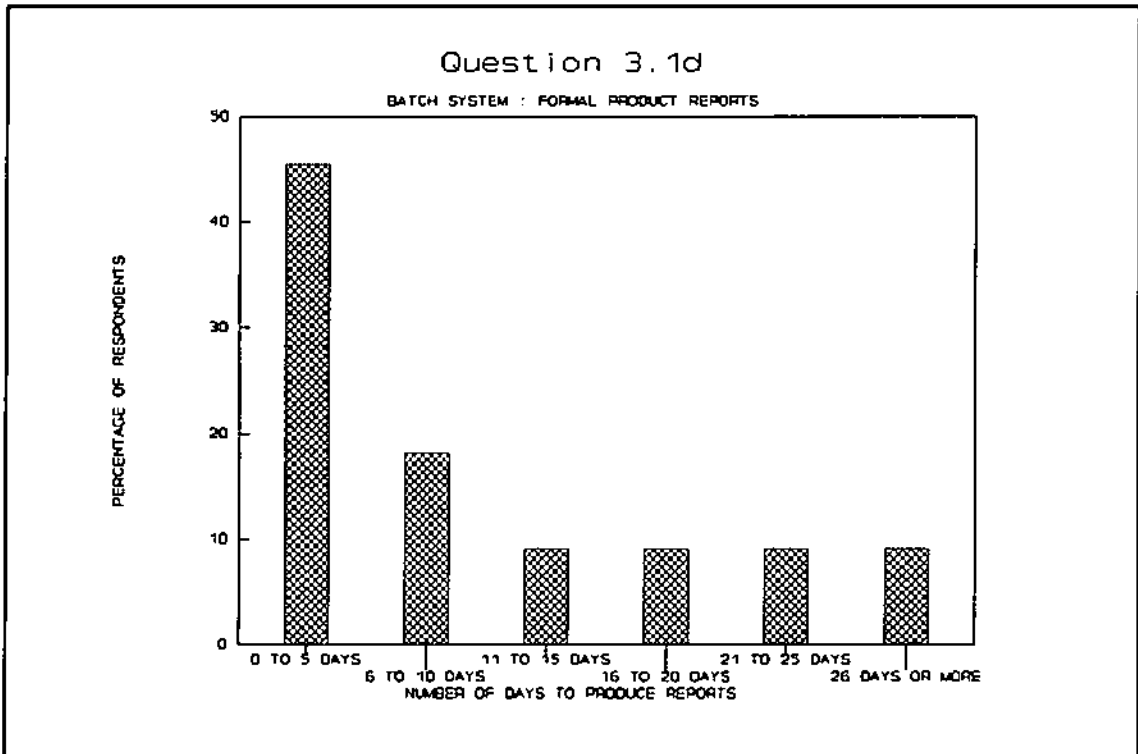
Figure 11.21 shows the days taken to produce formal cost centre reports using a batch system. About 75 % of users

Figure 11.21

produce reports in 15 days or less. This is higher than for the users of the on-line system, which proves again the argument put forward above that the users of the on-line system is less anxious to produce formal month closing reports. Note that all batch operators produce reports within 20 days, while this is not the case with on-line users (Figure 11.13).

- **Question 3.1b (batch) : How many calendar days after the end of the month are formal product reports available?**

The days needed to produce formal product reports are shown in Figure 11.22. Here 72 % of users are able to produce product reports in 15 days or less. This compares favourably with the same percentage for on-line users. If one, however, compares Figures 11.16 and 11.17 with 11.21

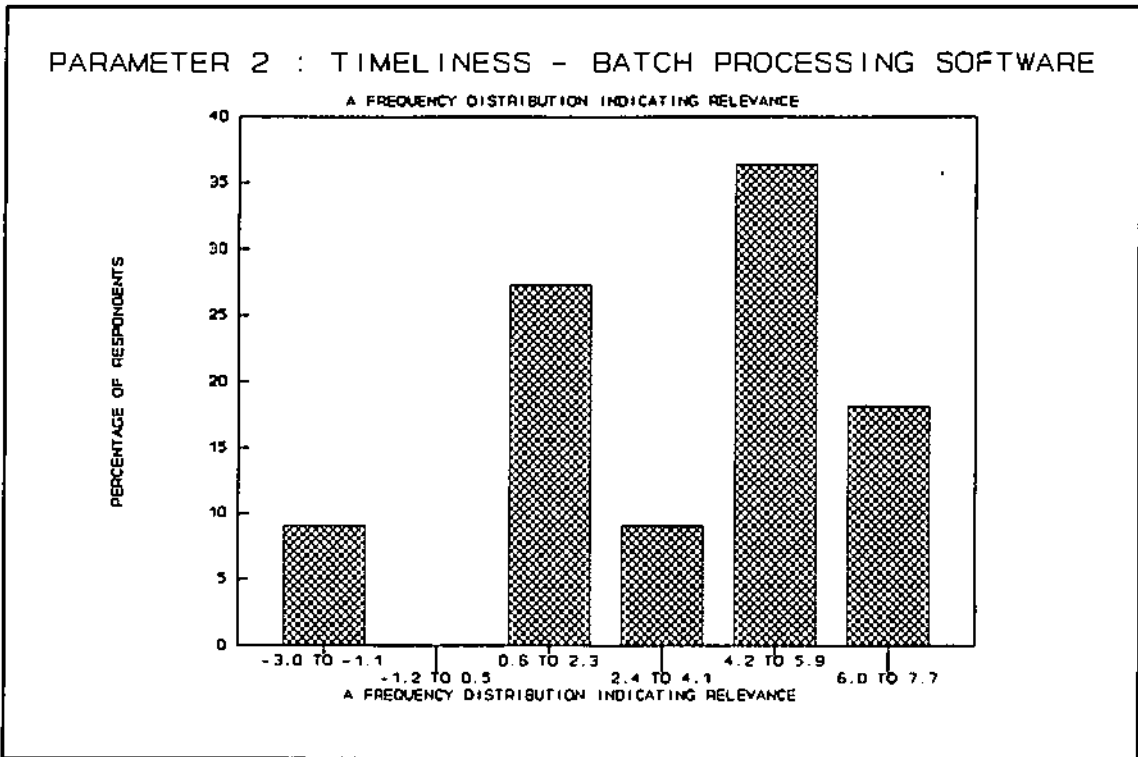
Figure 11.22

and 11.22 it is evident that the on-line system gives superior control capabilities.

- Questions 3.2 and 3.6.

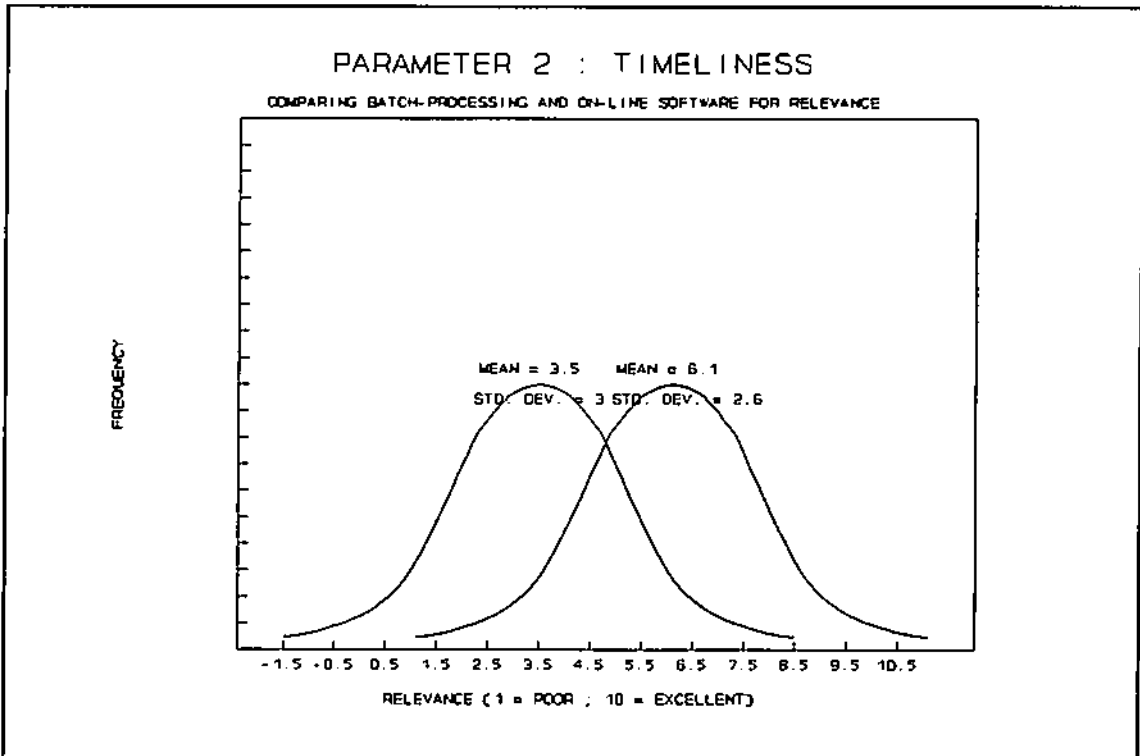
Question 3.2 served as a validity check on the type of software in use. For Question 3.6 , reporting on critical success factors, users of batch-processing software all indicated that they report on critical success factor on a monthly basis.

Figure 11.23 shows the overall relevance for the Plaut ABC method, for the parameter of timeliness, using a batch-processing software package. This distribution has a mean of 3.5 and a standard deviation of 3.0.

Figure 11.23

4.4. Is there any advantage in having an on-line system?

The comparative standard normal distributions for the

Figure 11.24

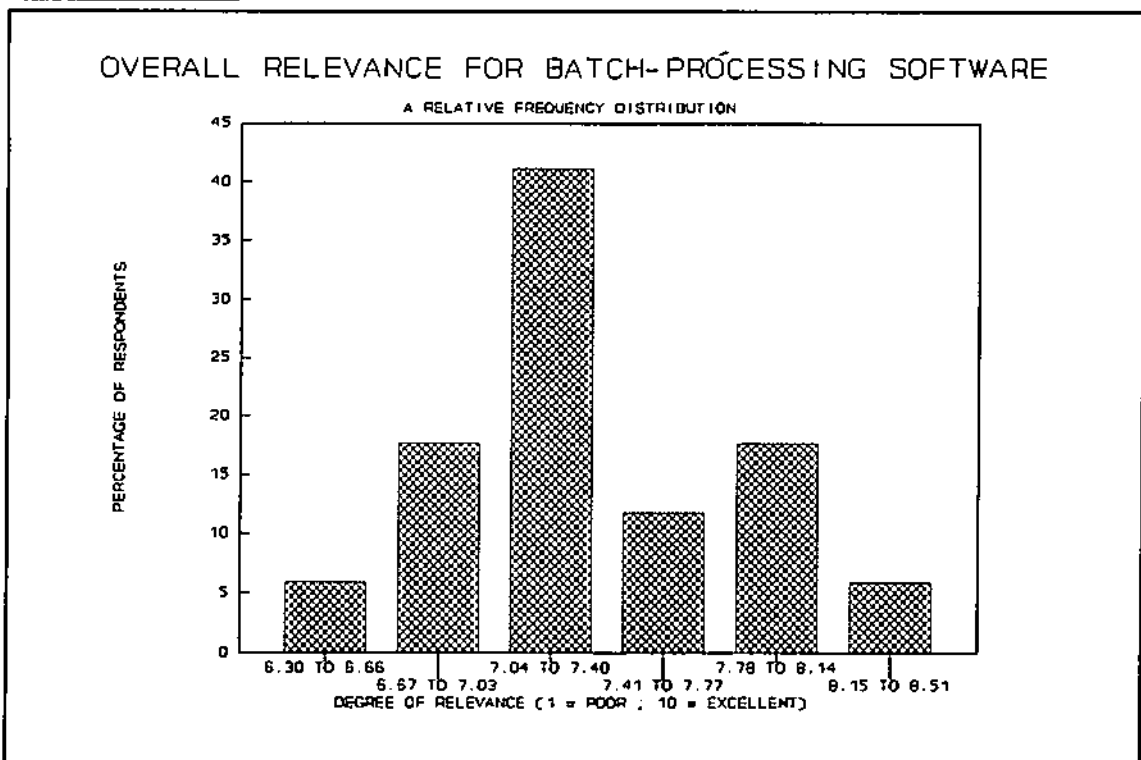
parameter of timeliness, in Figure 11.24, seems to indicate that there is. A test for the difference between two means gives the following result:

- At the 99.8 % confidence level it can be stated that the mean for batch-processing systems is significantly less than that for on-line systems.

The standard error of the difference between two means were calculated as 1.89, while the actual difference between the two means are $(6.1 - 3.5) 2.6$.

The question now is this, what is the impact of the type of

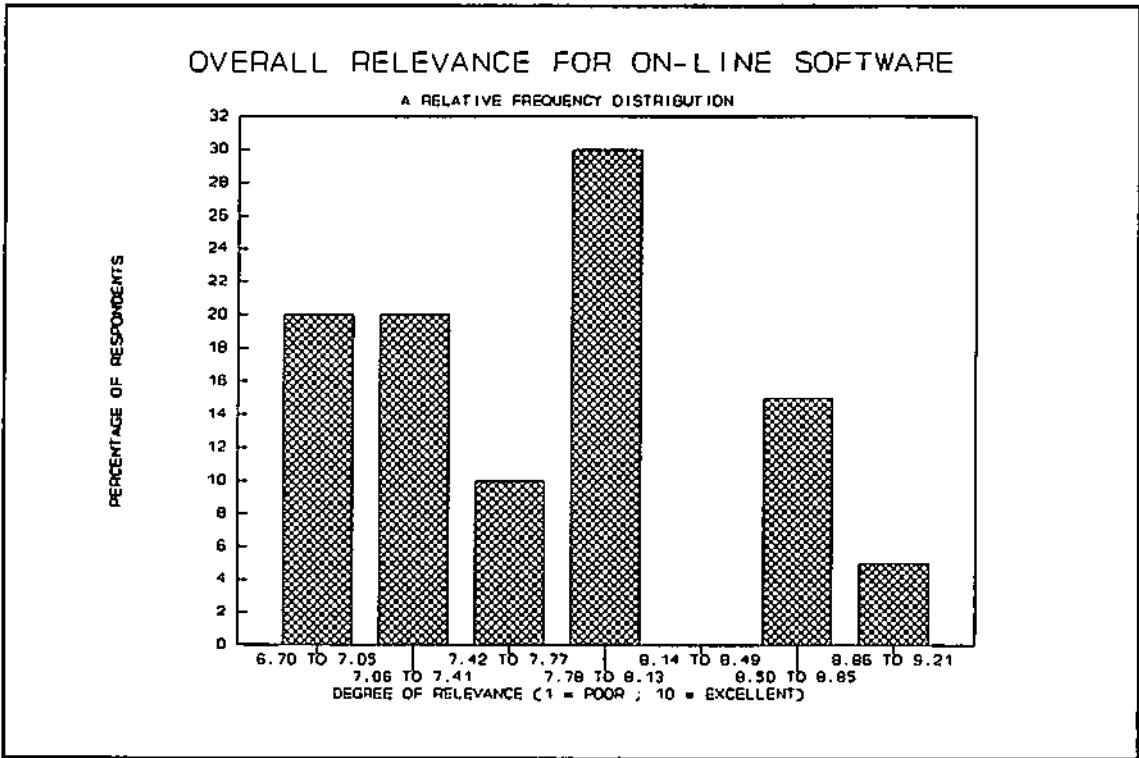
Figure 11.25



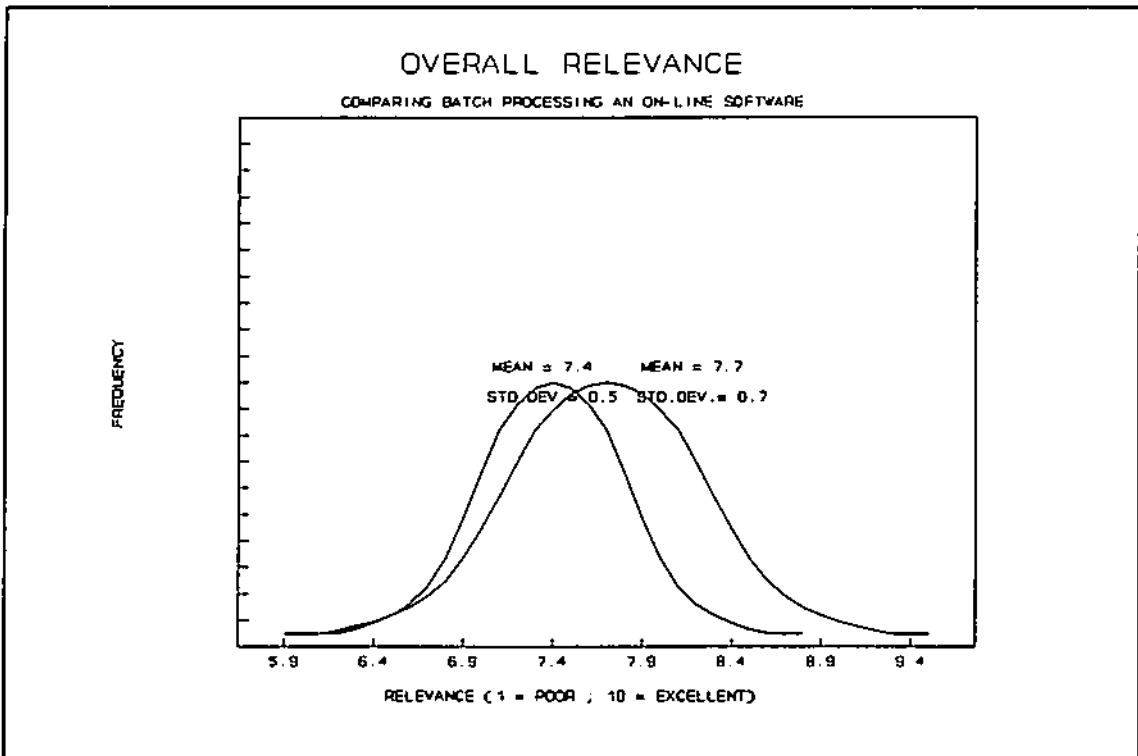
software on the overall relevance of the management accounting method for an organisation. Figure 11.25 gives an indication of the overall relevance obtainable from

batch-processing systems; this distribution has a mean of 7.4 and a standard deviation of 0.5. Figure 11.26 gives the same information for on-line systems; the distribution has a mean of 7.7 and a standard deviation of 0.7.

Figure 11.26



The standard normal distributions for the overall relevance of batch and on-line systems can be seen in Figure 11.27. A test for the difference between two means will again shed some light on how the overall relevance of on-line systems compared to that for batch-processing systems. In this instance it can only be stated at the 87.5 % confidence level that a difference does exist between the two means. One must therefore conclude that there is real gain in overall relevance obtainable between the options of a batch system and an on-line system. A fact that must be kept in

Figure 11.27

mind as well is that the nine parameters were all given equal weights in determining overall relevance. One could quite easily place a higher premium on timeliness and control, in which case an on-line system might well achieve an unassailable overall relevance rating.

On the subject of a PC approach to ABC, the conclusion is that it cannot be considered a plausible approach to management accounting, since its relevance will be even lower than that of a batch-processing system. This is even more important if one considers the move away from batch systems.

In conclusion, it seems that an on-line system does play a significant part in the overall relevance of the Plaut ABC concept. But considering that the mean for batch systems

is equal to 7.4, still significantly higher than CMA, on-line systems is not the 'be-all, end-all'. Also note that 7.4 is lower than the mean, 7.6, for overall relevance of Plaut ABC. This says a lot for the Plaut ABC concept itself, if the software were left out the mean for overall relevance would be even higher. This indicates that Plaut ABC is not just another run-of-the-mill approach to management accounting, boosted by high-technology software. The decided advantage from on-line software for the parameter of timeliness could, however, in some applications weigh very heavily.

5. Parameter 3 : Cost management.

- Question 4.1 : You are approached by a company that has serious cost problems, high overheads, and managers' alibis that cannot be refuted. What would you recommend?

Figure 11.28 contains the responses to Question 4.1. All current users of Plaut ABC would recommend it to more or lesser degree. This agrees with the responses received for Question 1.7 (Figure 11.6), where an overall rating of Plaut ABC was determined.

- Question 4.2 (This was an open question where respondents had to indicate which costing method they would recommend if they did not recommend Plaut ABC in Question 4.1).

- Question 4.3 : How often do you find that when the

Figure 11.28

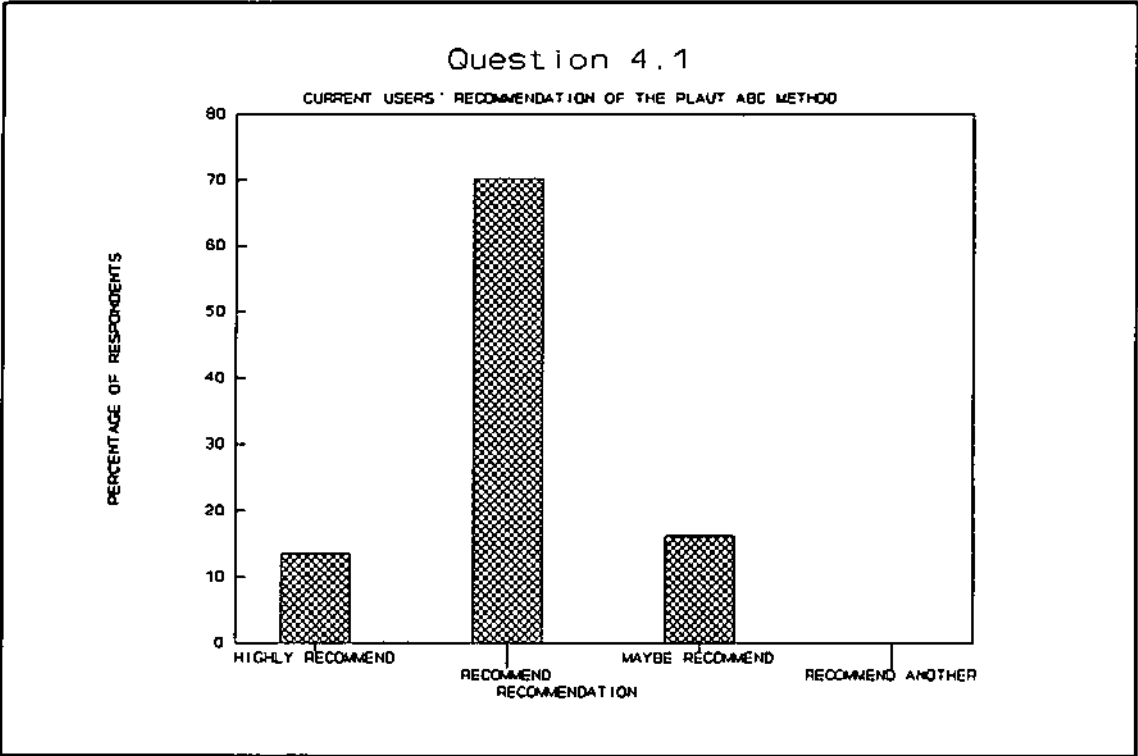
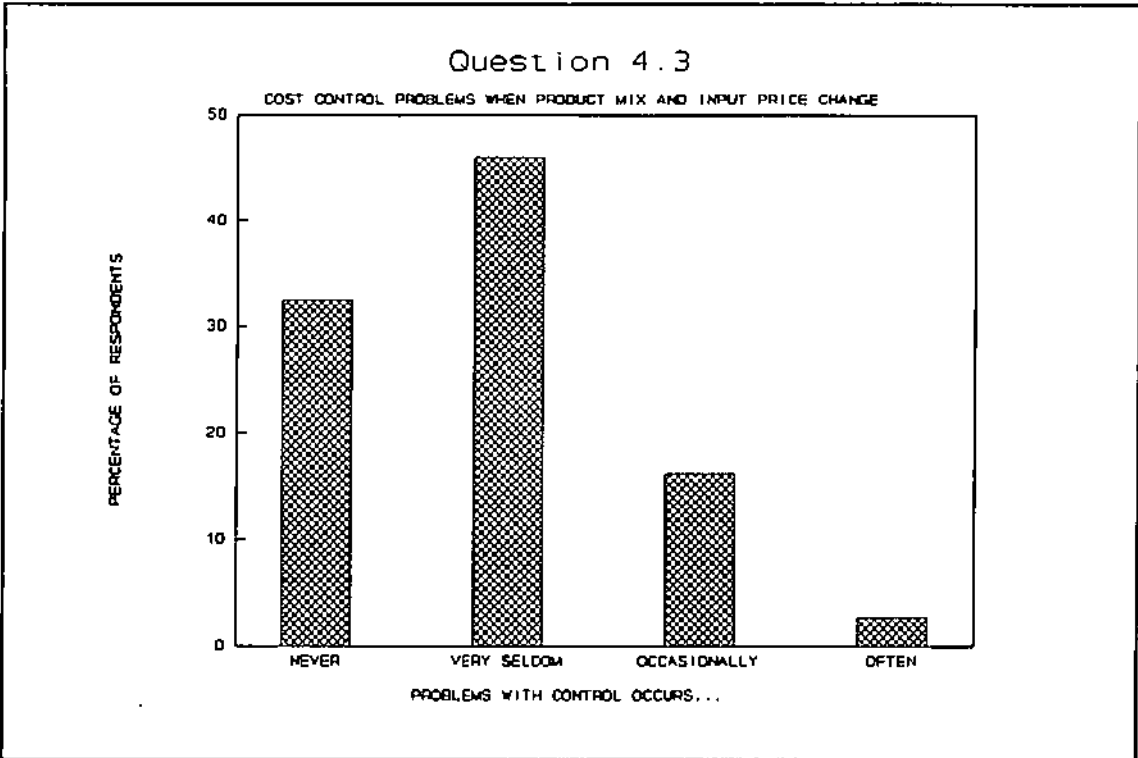


Figure 11.29

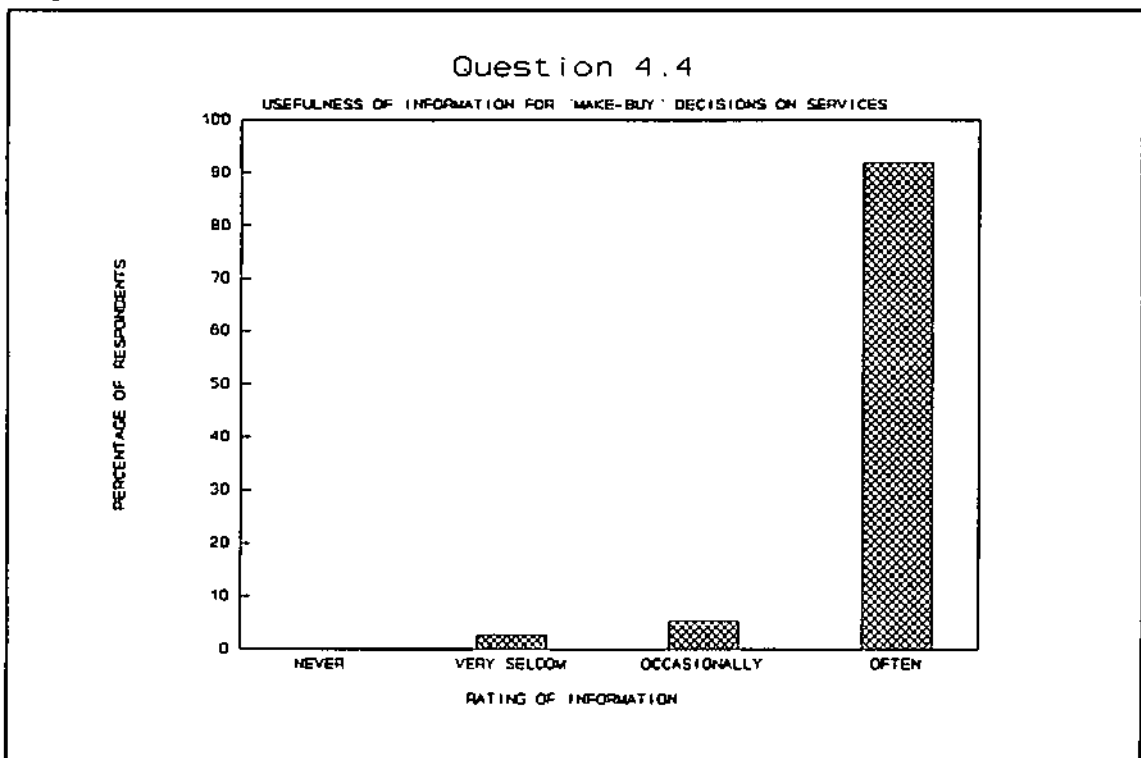


product mix produced changes and/or resource input prices change, that your costing method fails to provide you with accurate information for product cost control?

The responses to Question 4.3 appear in Figure 11.29. An estimated 80 % of Plaut users 'Very seldom' or 'Never' experience product cost control problems. This is indicative of a sound approach to product costing and the applicability of underlying theory that caters for changes in a dynamic environment.

- Question 4.4 : How usable are your standard cost centre rates for 'make-buy' decisions?

Figure 11.30

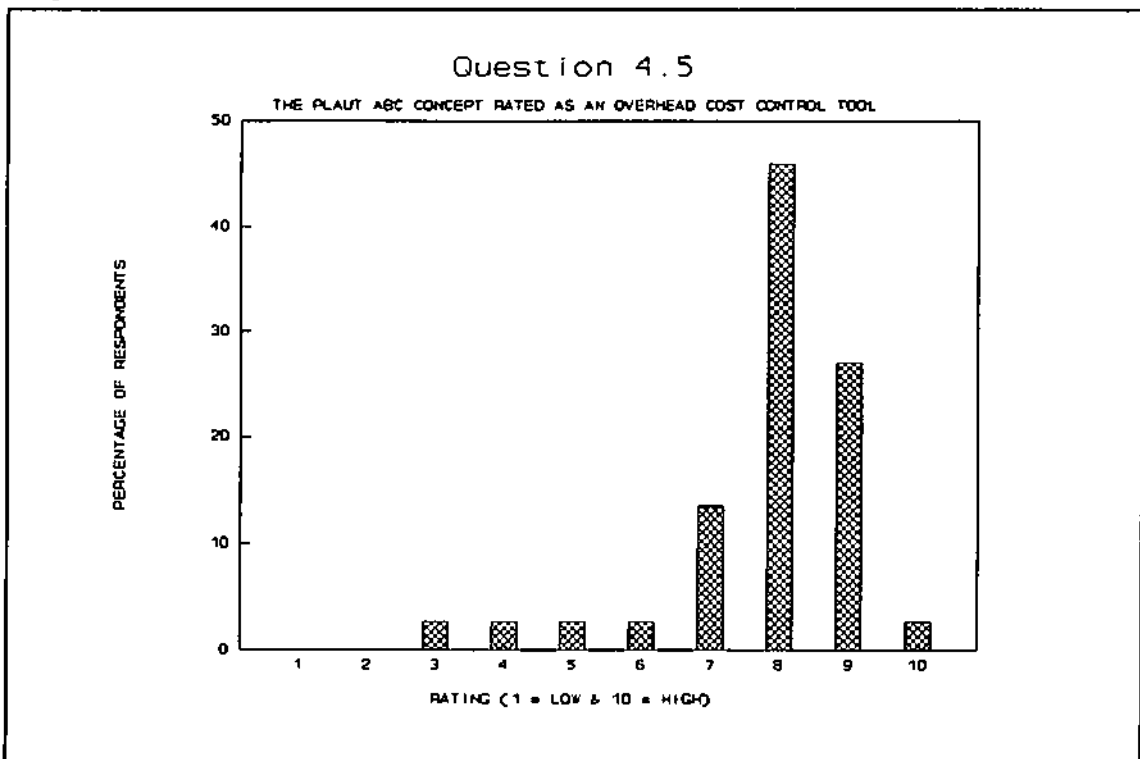


Question 4.4 was aimed at determining the usefulness of the Plaut ABC concept in 'make-buy' decisions. Figure 11.30 shows the responses marked for this question. More than 90 % of respondents found the cost rates to be 'Very usable' and more than 95 % found it to be 'Occasionally usable' or

'Very usable'. With reference to what was said above in the section on profitability, this rating indicates that the benefits to be had in increased profitability are strongly related to, amongst other things, medium-term strategic decisions such as 'make-buy'.

- Question 4.5 : Please rate your costing method as a tool to control overhead costs.

Figure 11.31



Finally, Question 4.5 had to determine the effectiveness of Plaut ABC as an overhead-control tool. This is an important point, due to the unique way in which authorisation of overhead costs is arrived at in the Plaut ABC concept. Refer again to Chapter 6 on the subject of Secondary Indirect cost centres (Non-measurables) and the

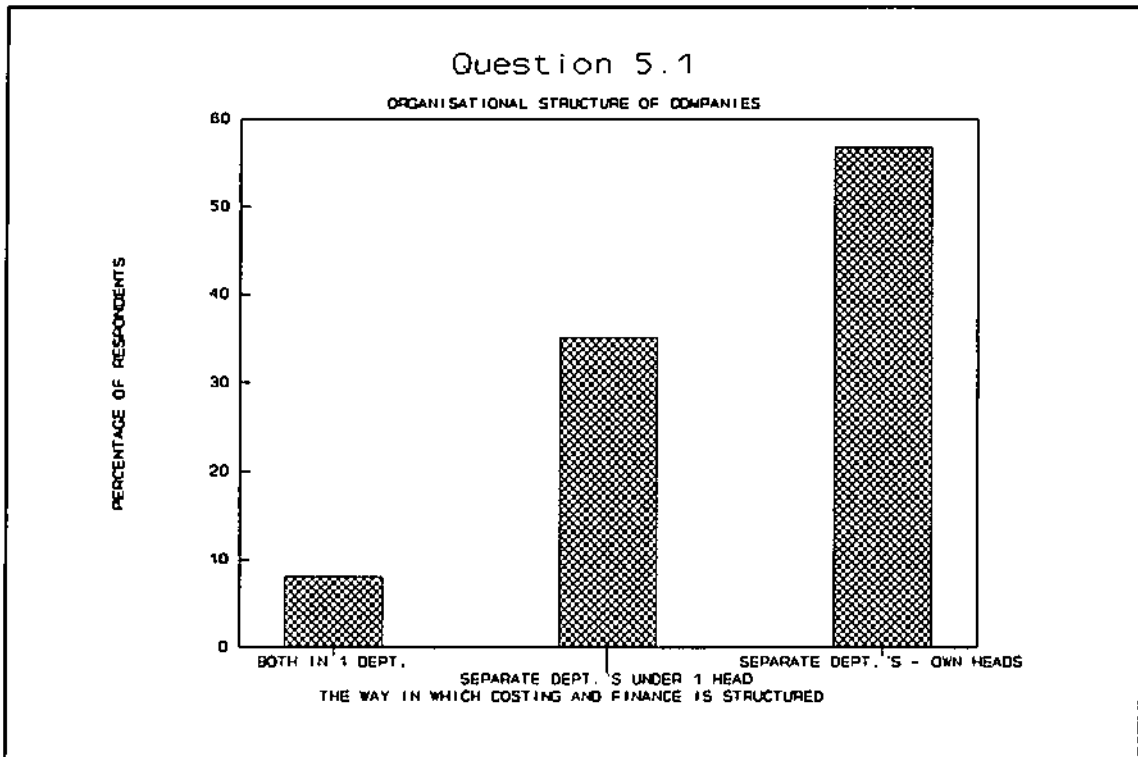
principle of inverted flexing of the budget. The rating given in this question can be seen in Figure 11.31. About 80 % of Plaut users rate the concept 8 or higher on a scale of 1 to 10 while more than 90 % of users rate it with a 7 or higher on a scale of 1 to 10. This is a very positive rating and indicates a high degree of effectiveness as an overhead-cost-control tool. This rating corresponds to and is confirmed by that for Question 4.1 (See Figure 11.28 above), where overhead costs were also mentioned.

In conclusion, on the parameter of cost management. Cost management is one of the strong points of the Plaut ABC concept. This can be seen in the mean rating of 8.1 for this parameter as well as the ratings for the individual questions on product cost control and cost centre cost control. The decisive fact is, however the rating that cost control got as a reason for increase in profitability - Figure 11.11. Plaut ABC has superior cost control and cost management capabilities if compared to CMA.

6. Parameter 4 : Reporting emphasis.

- Question 5.1 : How are your company's cost accounting and financial accounting functions accommodated in your organisational structure?

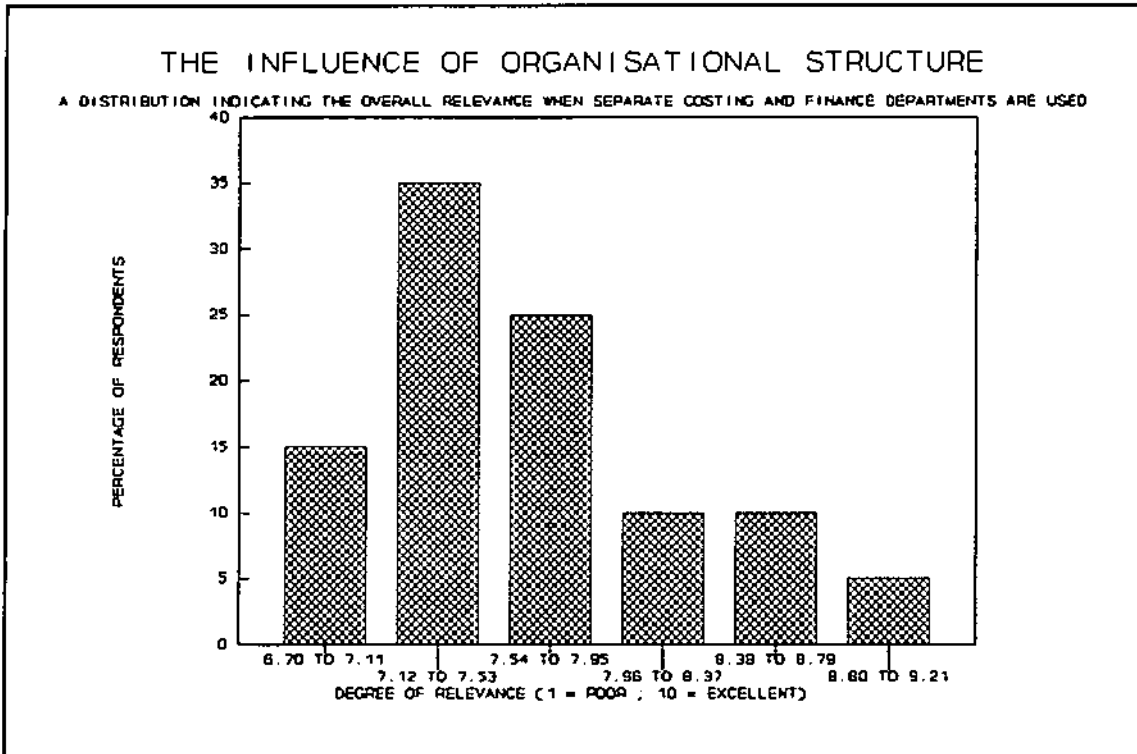
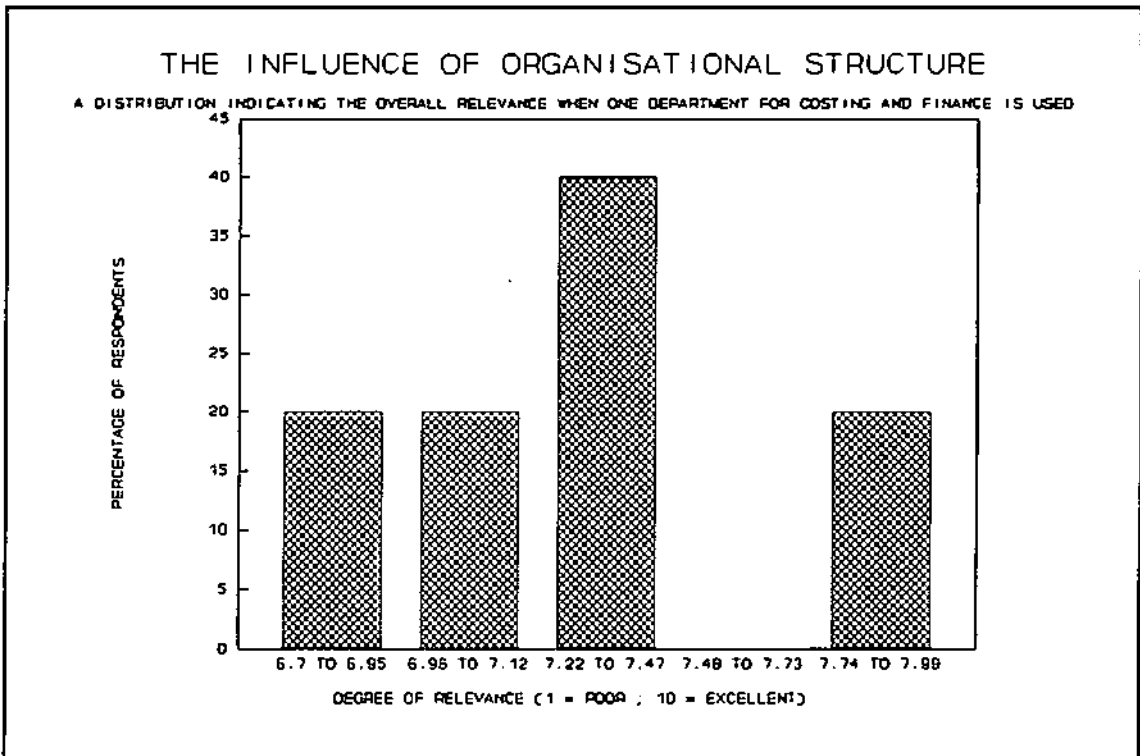
Remember that this question was included on the assumption that a one-department structure will result in less relevance due to the influence of financial reporting on the management accounting system. Figure 11.32 shows the manner in which Plaut users have structured their financial

Figure 11.32

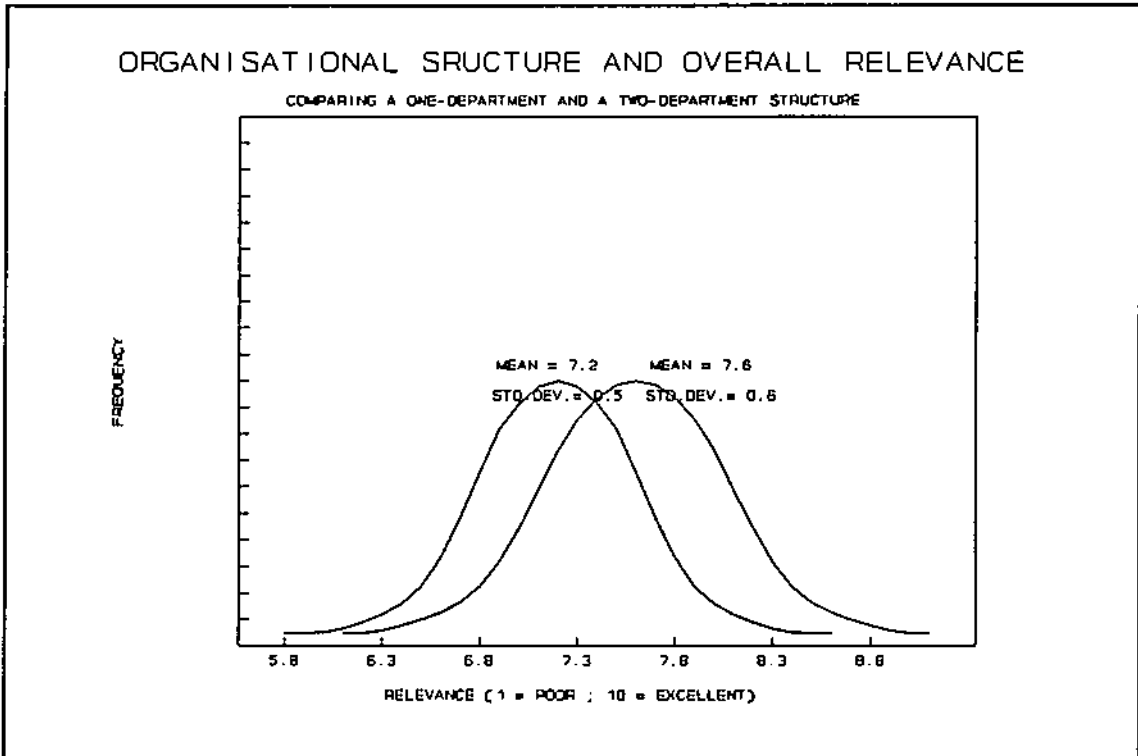
accounting and management accounting functions. The proportion of respondents that still has only one department is small, this resulted in additional intricacies in the statistical test for the difference between two means.

Figures 11.33 and 11.34 shows the frequency distributions for overall relevance of a 1-department structure and a 2-department structure respectively. A 1-department structure gives a mean overall relevance of 7.2 and a standard deviation of 0.5, while a 2-department structure gives a mean relevance of 7.6 and a standard deviation of 0.6.

The standard normal distributions can be seen in Figure 11.35. The sample statistics indicated a higher degree of

Figure 11.33**Figure 11.34**

relevance for an organisational structure that accommodates management accounting and financial accounting in separate departments. For the population of Plaut users this

Figure 11.35

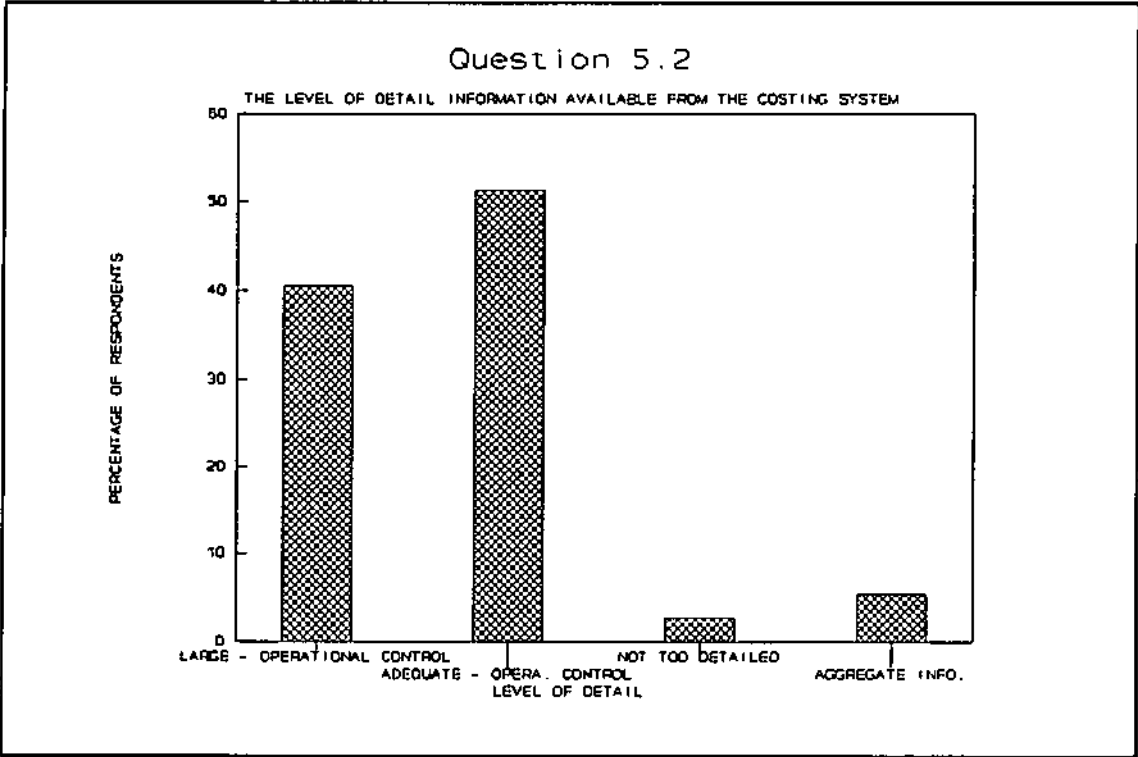
statement can be made at a confidence level of 85 %. One has to conclude therefore that organisational structure and the accompanying financial reporting pressures results in a reduction in the relevance of the management accounting system.

- Question 5.2 : Which of the following best describes the information available from your costing system?

The level of detail available from the Plaut ABC approach to management accounting can be seen in Figure 11.36. A rating of 'Large amounts' or 'Adequate amounts of detail' was indicated by 90 % of respondents. Remember that a major criticism of CMA is its lack of detail. The level of detail from the Plaut ABC concept can be classified as high.

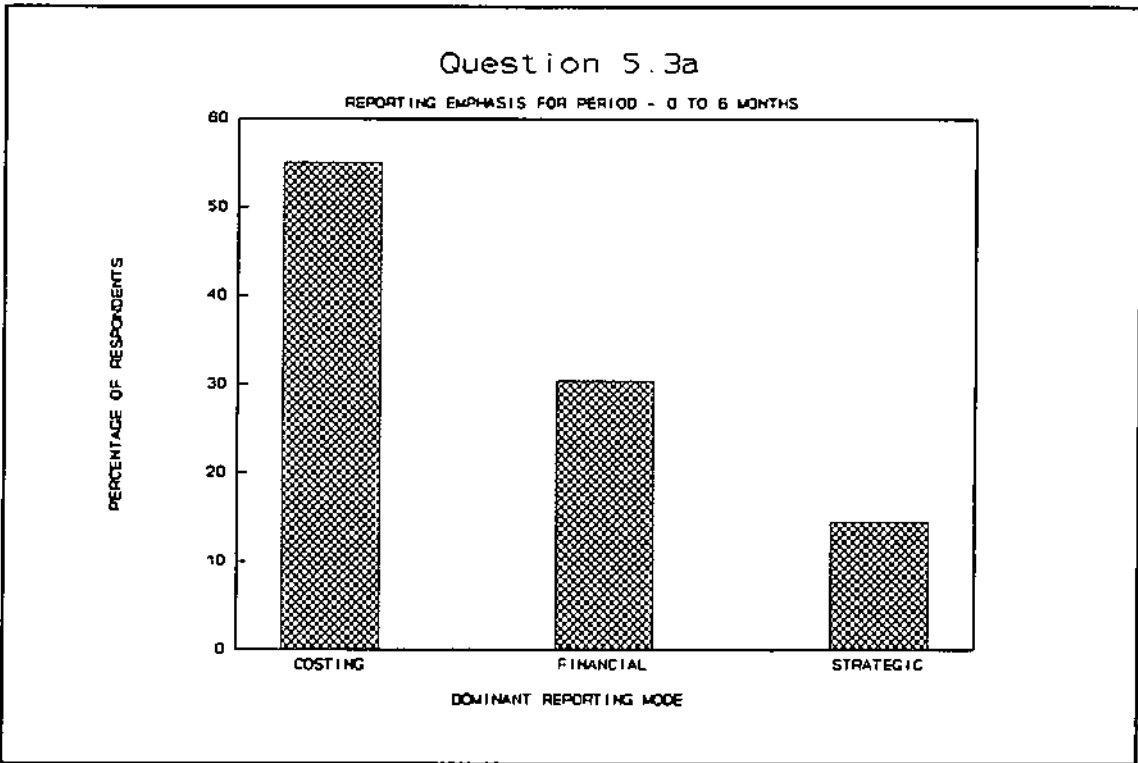
- Question 5.3a : Please rank the three reports in order of

Figure 11.36



importance for the period 0 to 6 months.

Figure 11.37

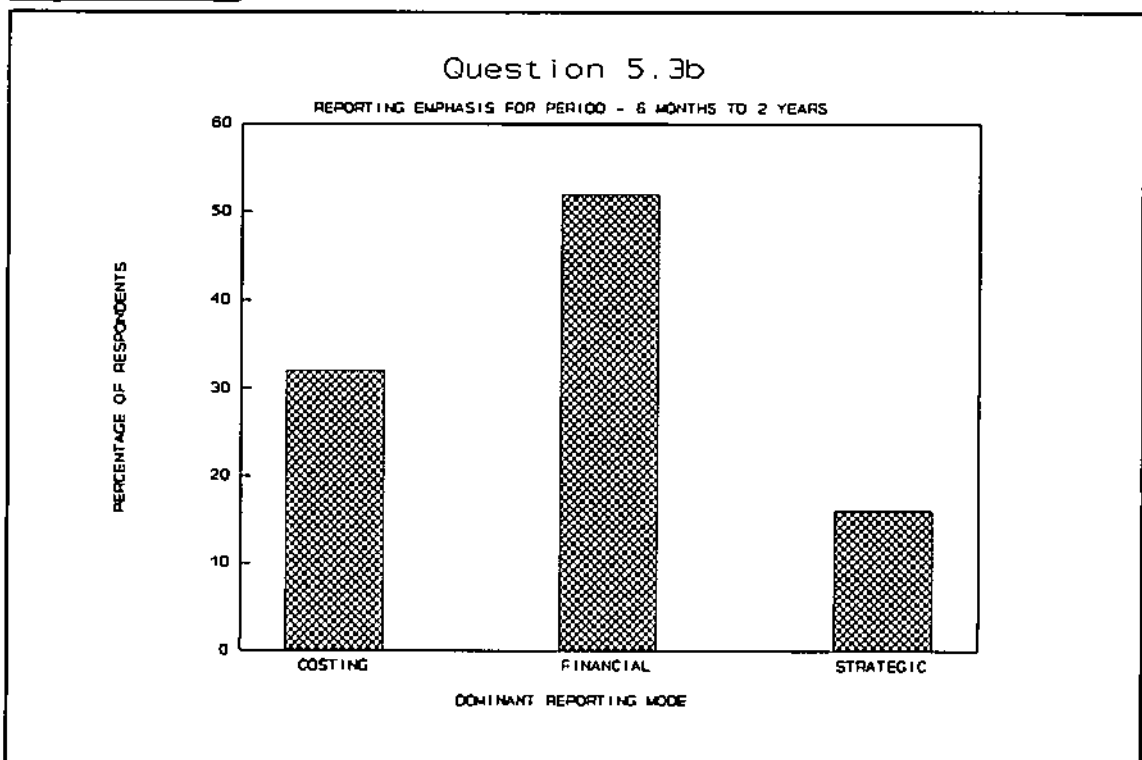


The rankings given can be seen in Figure 11.37. It is

quite significant that costing reports have pre-eminence over financial reports for the period indicated. This is contrary to the situation that prevails in a CMA scenario and adds to the higher degree of relevance of Plaut ABC.

- **Question 5.3b : Please rank the three reports in order of importance for the period 6 months to 2 years.**

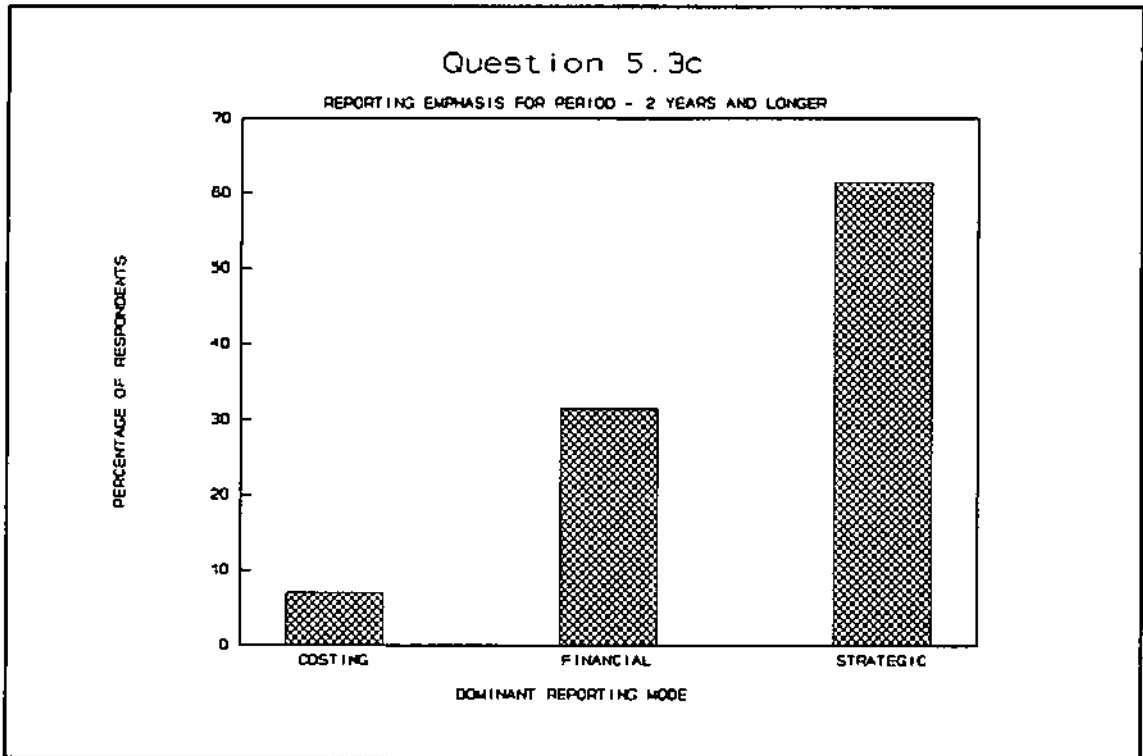
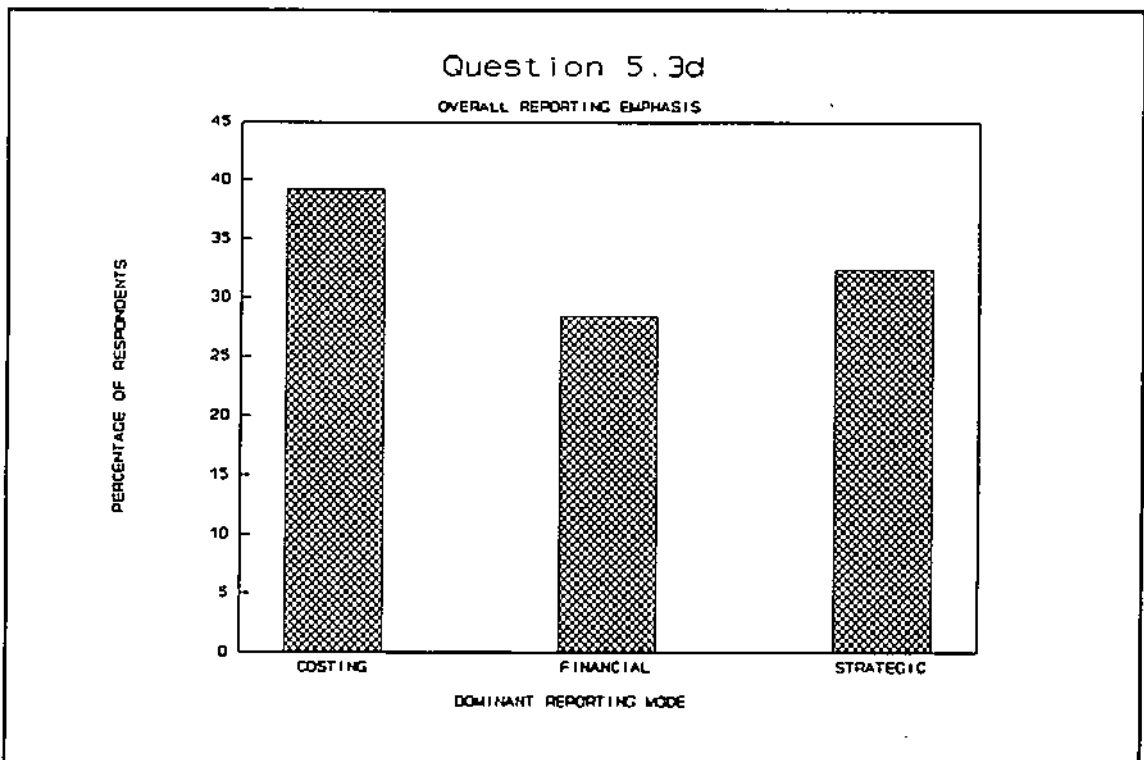
Figure 11.38



The rankings for this question can be seen in Figure 11.38. The ranking is what could be expected for the period.

- **Question 5.3c : Please rank the three reports in order of importance for the period 2 years and more.**

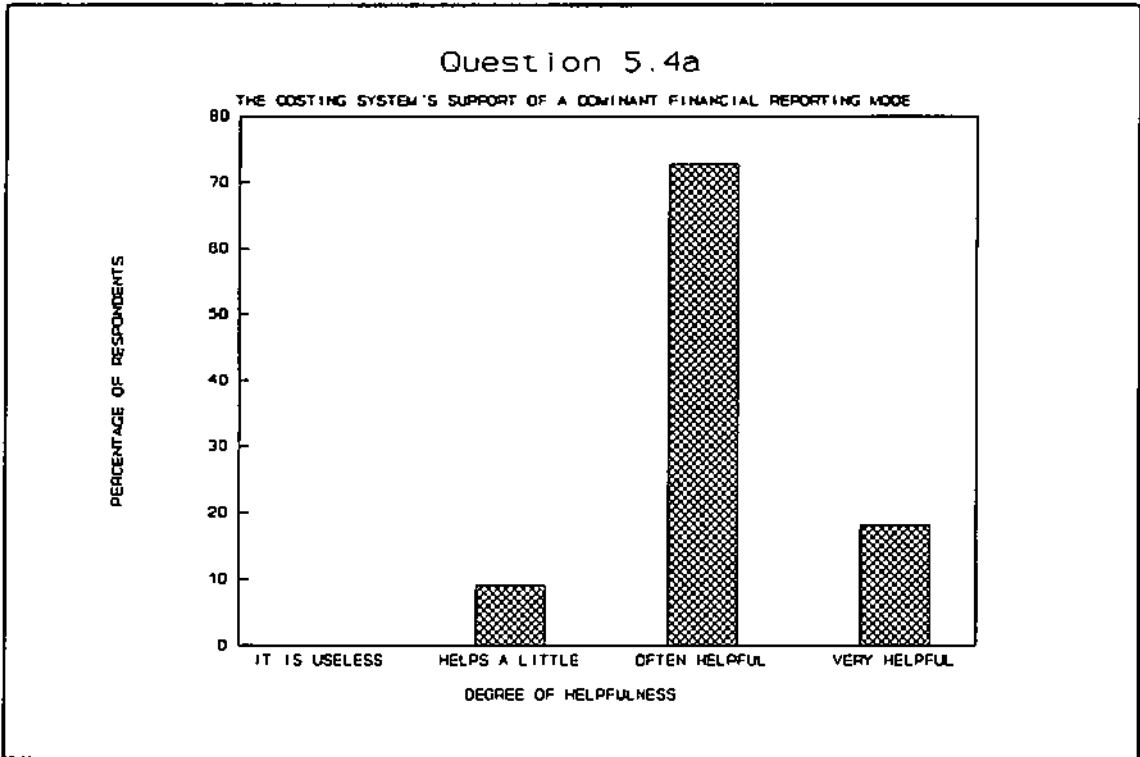
The ranking for Question 5.3c can be seen in Figure 11.39. This ranking fits the theoretical model in that strategic reports have pre-eminence over the longer period.

Figure 11.39**Figure 11.40**

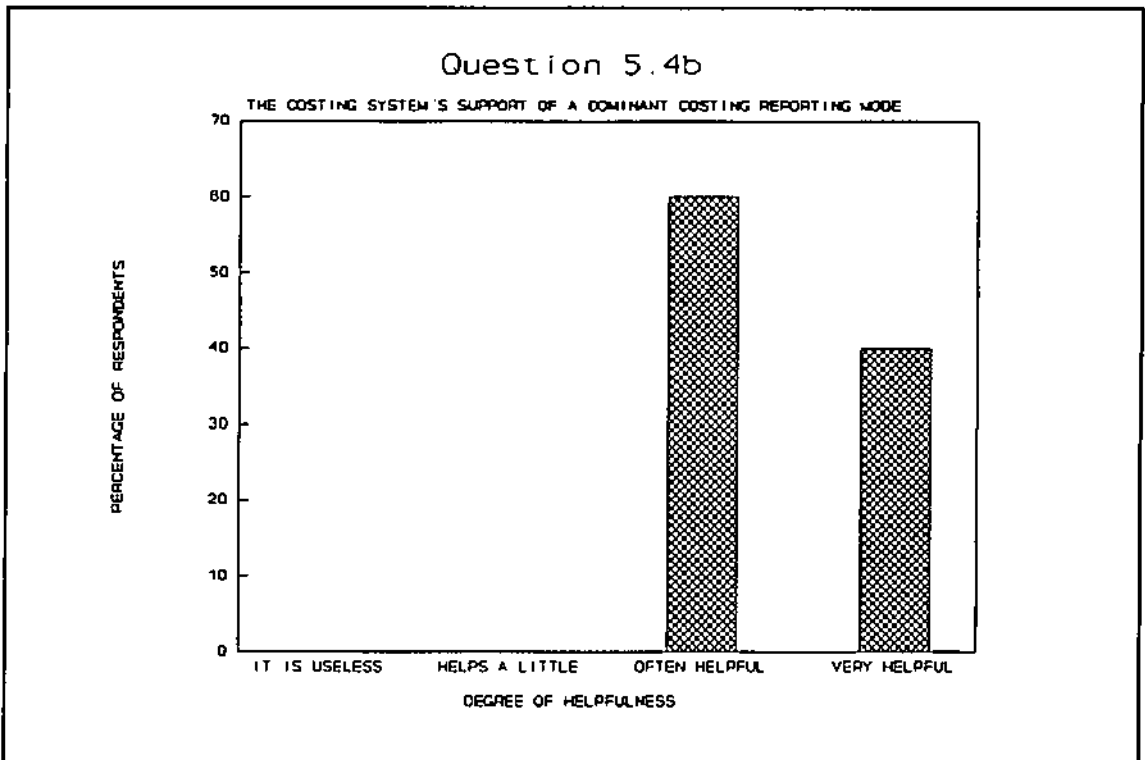
The ratings for the three periods were then combined to arrive at the overall dominant reporting mode. This is graphically represented in Figure 11.40. This figure

reveals a few noteworthy characteristics:

- Plaut users have broken out of the syndromes of short-term profit reporting, refer also Figure 11.37 above. For the management of profit, contribution margin management reports from the costing system are used, refer Figure 11.11 for the first reason given there for an increase in profitability.
 - Strategic reports are also ranked higher than financial reports. This is actually surprising, but could partly be explained by the importance of strategic reports in a multi-product environment.
 - Plaut users reveal a far more balanced reporting approach than that currently prevailing in international commerce. The shift is towards more control-oriented, and analytically susceptible reports with information of higher decision relevance from the management accounting system.
- **Question 5.4a : To what extent is your costing method instrumental in helping you manage your dominant reporting mode - financial.**
- Figure 11.41 indicates the helpfulness of the management accounting method in managing the dominant financial reporting mode. This is a relatively high rating, but it does make sense in a partially integrated environment. It is interesting to note that financial reporting rely heavily on the management accounting system.
- **Question 5.4b : To what extent is your costing method**

Figure 11.41

instrumental in helping you manage your dominant reporting mode - costing.

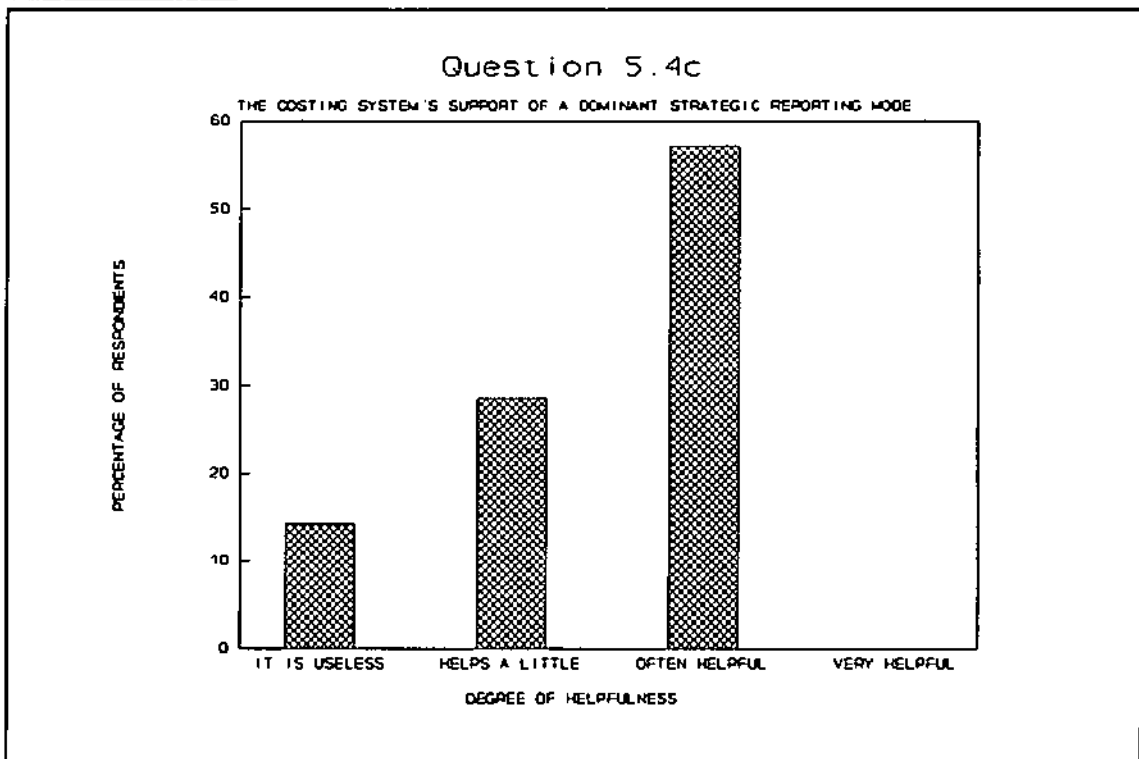
Figure 11.42

The rating for question 5.4b can be seen in Figure 11.42.

A rating this positive was expected for a management accounting system for management accounting.

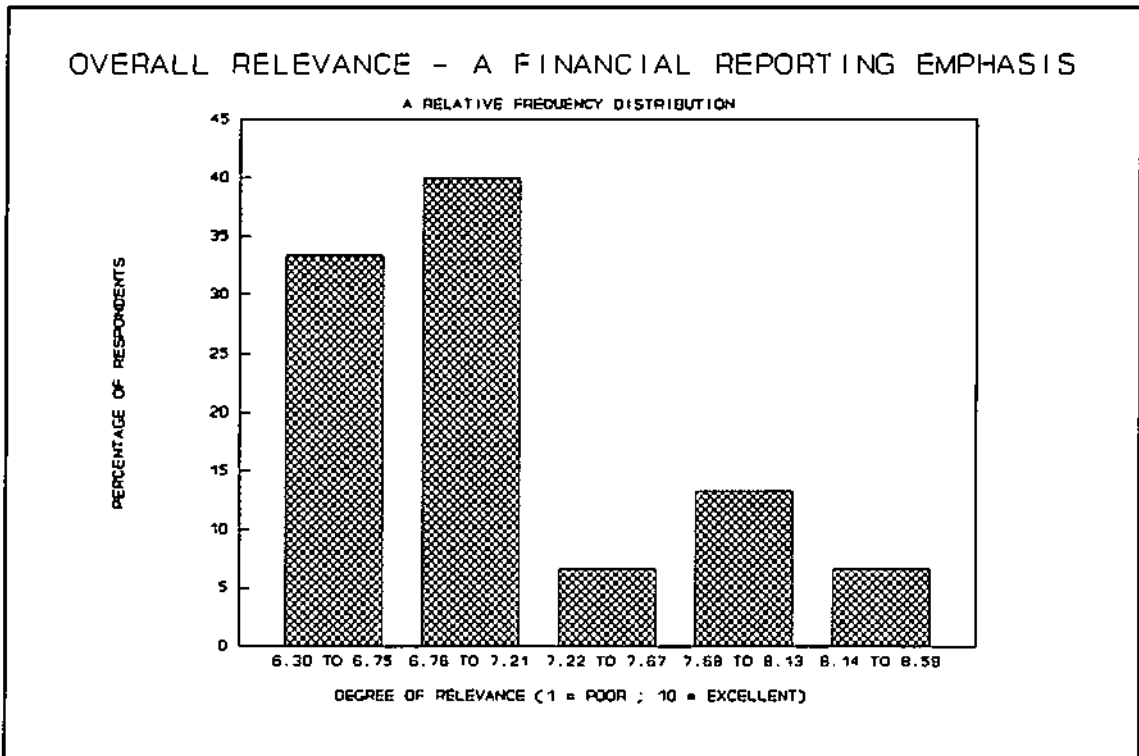
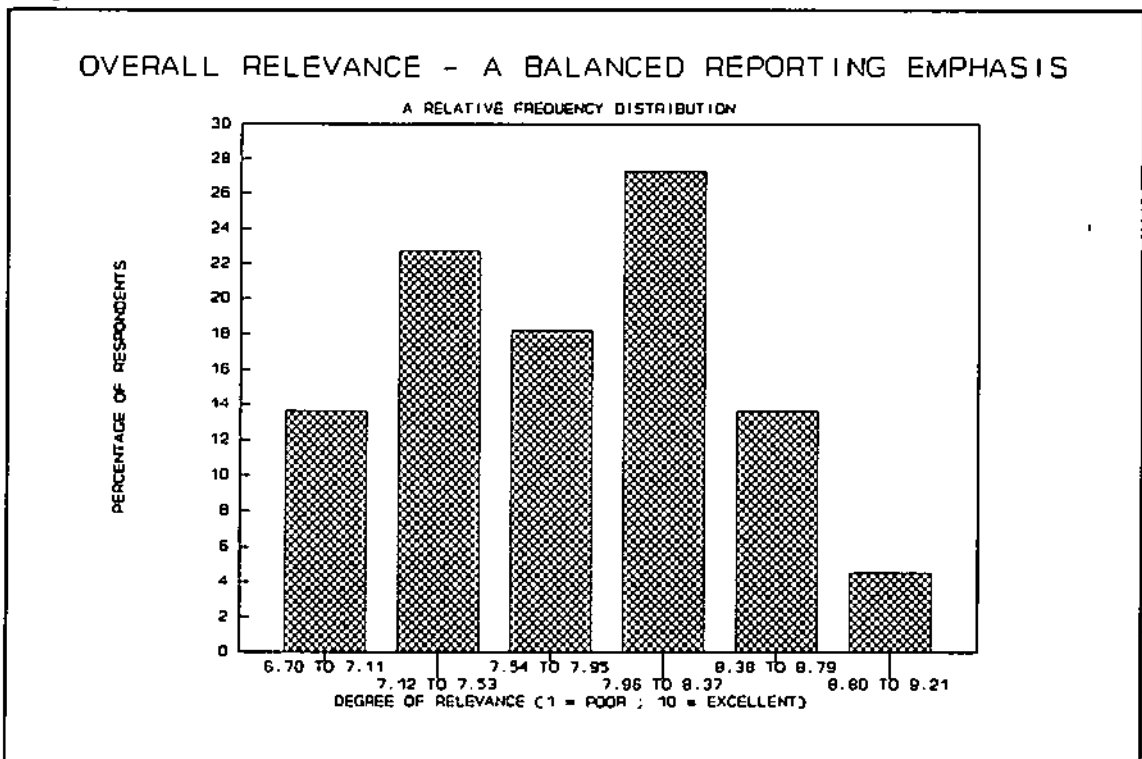
- Question 5.4c : To what extent is your costing method instrumental in helping you manage your dominant reporting mode - strategic.

Figure 11.43



If one considers the other ratings that strategic issues got, this rating is actually low - Figure 11.43. As stated earlier, it seems that the sample of Plaut users place quite a premium on strategic reports due to their multi-product nature.

In conclusion, on the parameter of reporting emphasis, Question 5.3 affords the opportunity of determining what effects a dominant financial reporting mode has on the relevance of the

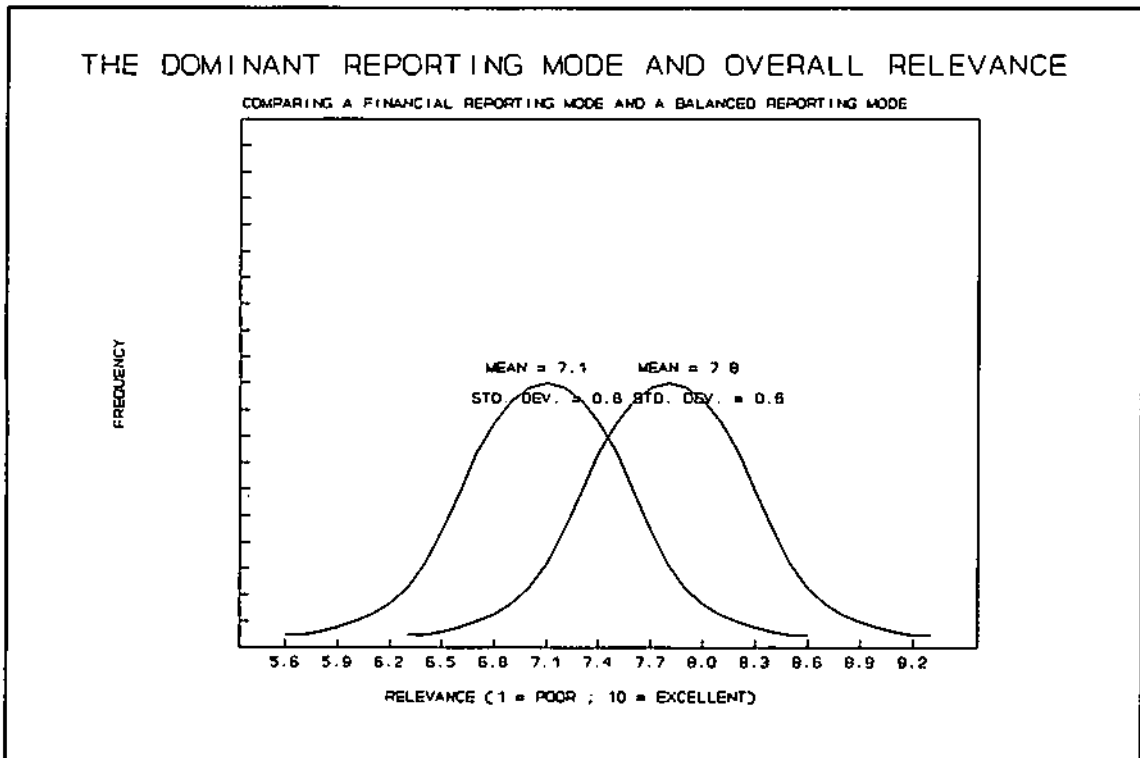
Figure 11.44**Figure 11.45**

management accounting method. The overall relevance of companies with a dominant financial reporting mode is graphically represented in Figure 11.44. The distribution has a mean of 7.1

and a standard deviation of 0.6. The overall relevance distribution for companies with a balanced reporting practice is given in Figure 11.45. The distribution here has a mean of 7.8 and a standard deviation of 0.6.

The standard normal distributions appear in Figure 11.46. The test for the difference between two means reveal the following:

Figure 11.46



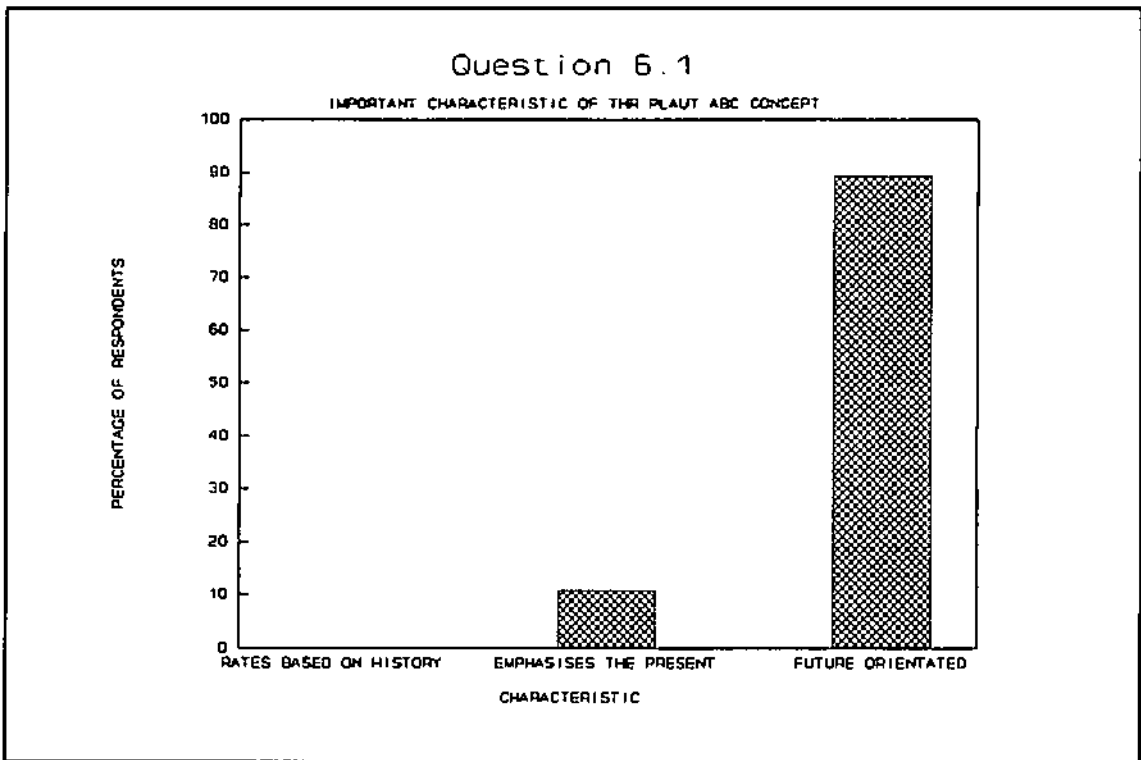
- It can be stated at the 98.8 % confidence level that the two means differ significantly.
- A dominant financial reporting emphasis in a company therefore has a negative influence on the degree of relevance of the management accounting system.

In conclusion on the parameter of reporting emphasis. On the

whole Plaut ABC has managed to recapture lost ground as far as reporting is concerned. To illustrate the positive effect of a balanced reporting approach, the role of contribution margin management reports, mentioned earlier, in increasing profitability should suffice.

7. Parameter 5 : Decision relevance.

Figure 11.47



- Question 6.1 : Which one of the following do you consider an important characteristic of your current costing method?

Question 6.1 were intended to determine the Plaut ABC users' views, of how they see the decision orientation and focus of the system. This must be seen against the background of one of the requirements for a management

accounting system, namely to engender a proactive and future-oriented focus in a company's decision making. The responses received for this question can be seen in Figure 11.47.

Of total Plaut ABC users, 90 % consider the approach as future oriented. This is sufficient to establish the advantage of the Plaut ABC concept in this regard.

- Question 6.2 : Rate your costing method in so far as it helps you identify problem areas in your organisation.

Figure 11.48

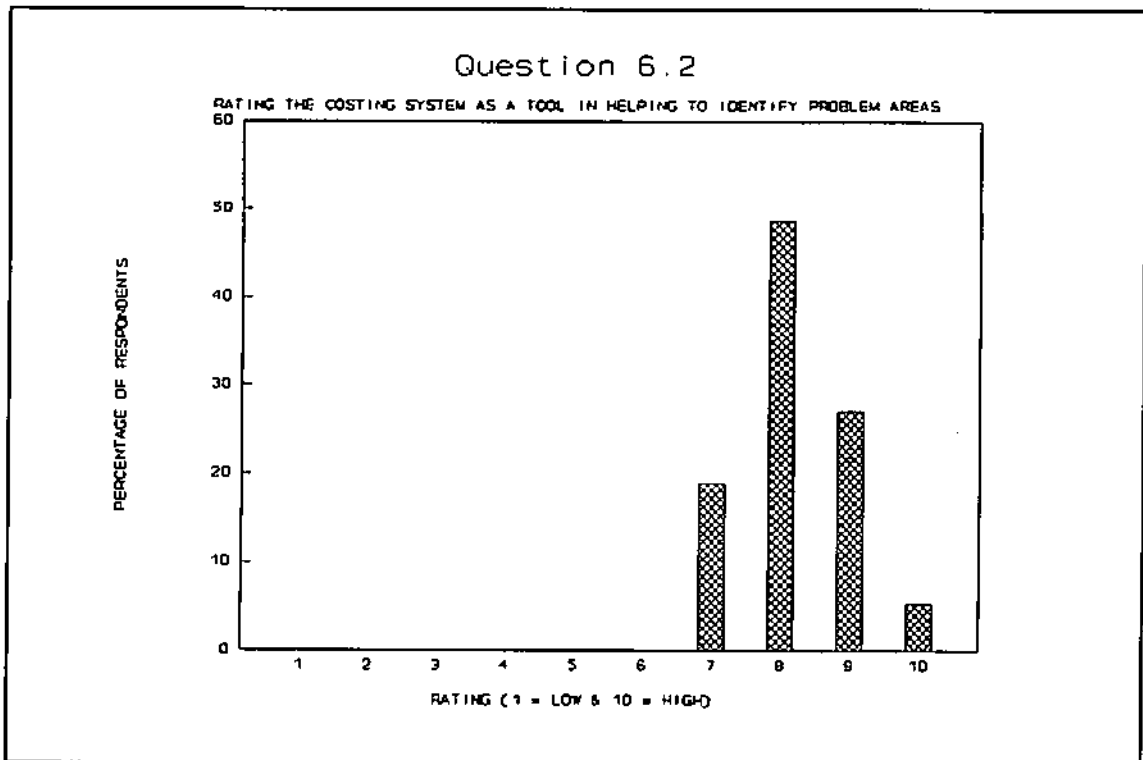


Figure 11.48 indicates the responses that were received on this question on a rating of 1 to 10. More than 80 % of respondents rated Plaut ABC with an 8 or higher, and all,

i.e. 100 % rated it with a rating of 7 or higher. This establishes the Plaut ABC concept as an excellent tool for problem identification in an organisation.

- Question 6.3 : How do you rate the information from your costing method that you must use to make decisions on products and customers?

Figure 11.49

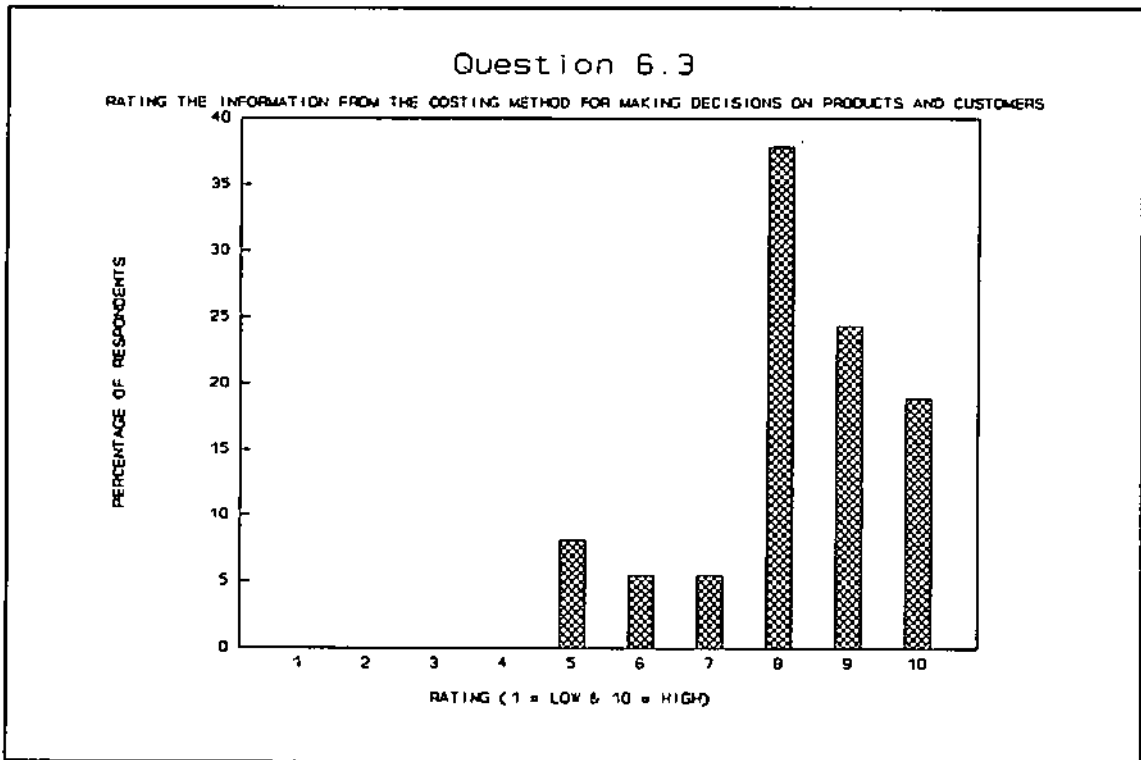
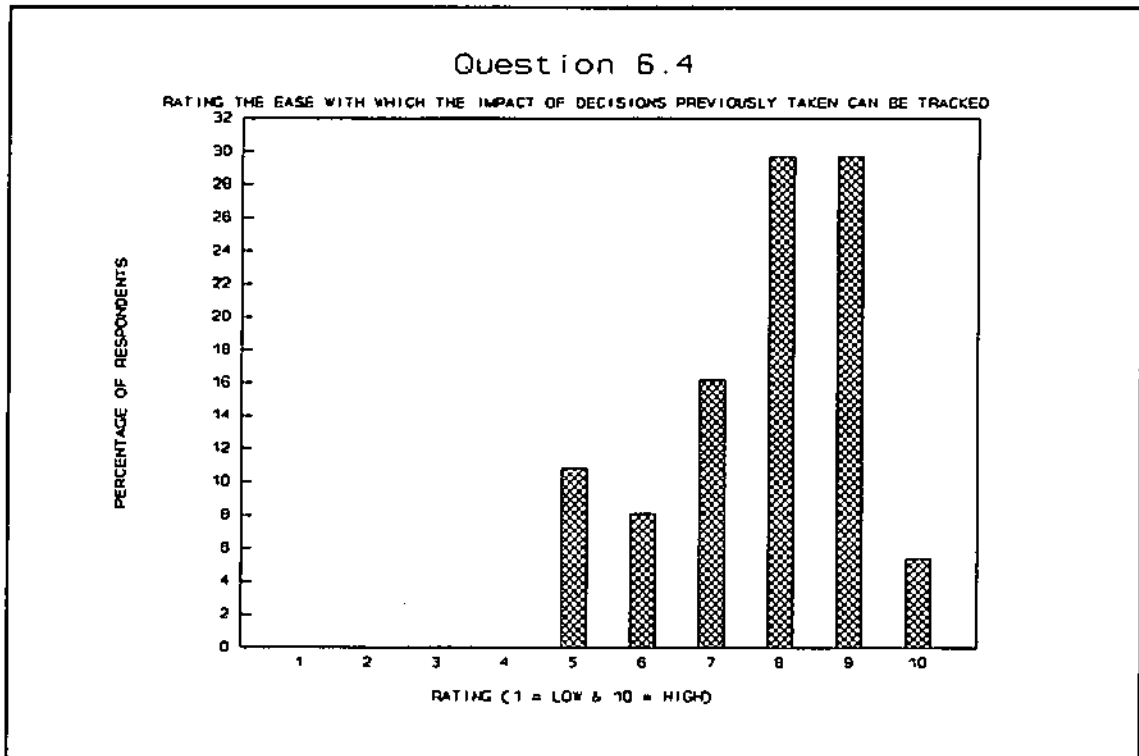


Figure 11.49 indicates that more than 80 % of Plaut ABC users rate the method as an 8 or higher for decision making on products and customers. This rating agrees with some of the major reasons given for increased profitability, namely product mix management and contribution margin management. This rating will be verified by that for Question 9.2 where the trust in product cost information is addressed.

Figure 11.50

- **Question 6.4 : How difficult is it to track the impact of decisions previously taken, through your costing method? For example, decisions such as: buying a new asset, changing a distribution channel, or more training of personnel.**

In the final question, for this parameter, a rating of 8 or higher was assigned by 65 % of respondents and a rating of 7 or higher by more than 80 % of respondents. Refer Figure 11.50. This rating highlight the following:

- Decisions can be tracked and corrective action taken if mistakes were made or if circumstance changes.
- Proactive management of current and past issues not yet resolved are facilitated.

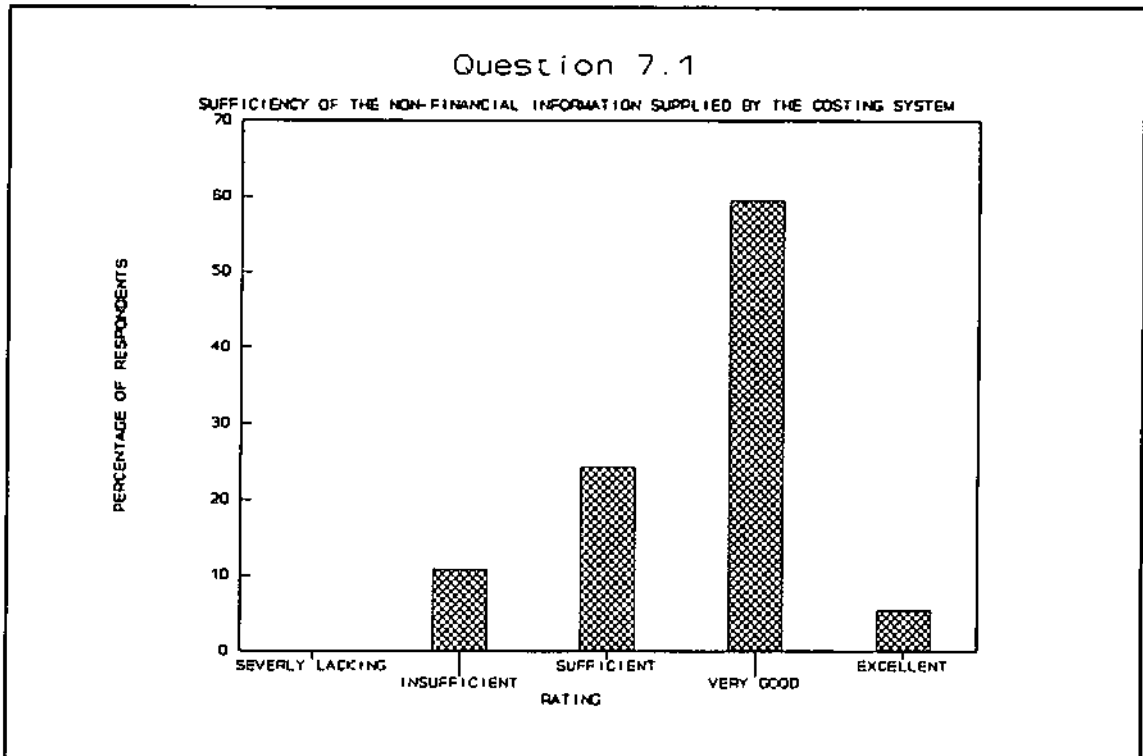
In conclusion, on the Parameter of decision relevance. This parameter received the highest rating of all the parameters, its

normal distribution had a mean of 8.4, out of a possible 10. A factor that is closely linked to decision relevance is, transparency of information, one of the reasons given for increased profitability. It can therefore be said that, apart from supplying decision relevant information, the consequences and possible effects of decisions, when using the information, are to a large extent clear from the outset. One must therefore conclude that the Plaut ABC concept gives an extraordinary degree of relevance and practical applicability.

8. Parameter 6 : Operational planning and control.

- Question 7.1 : Do you consider the non financial (unitary) information, such as activities, capacity utilisation, standard hours per product, etc, supplied by

Figure 11.51



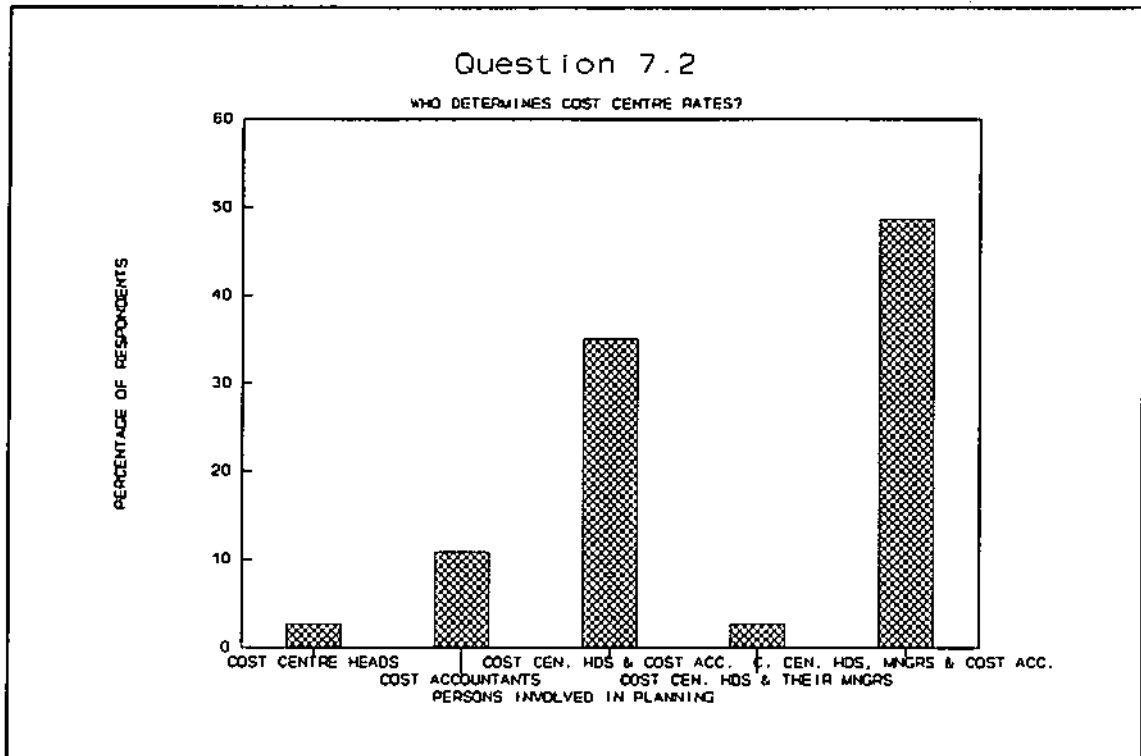
your costing system to be...

Figure 11.51 gives an indication of the responses that were received for Question 7.1.

Ratings of 'Very good' and 'Excellent' were given by 65 % of the Plaut ABC users and a rating of 'Sufficient' or higher was given by 90 % of respondents. Question 7.1 and Question 5.2 are closely linked since the level of detail measured in the latter question is determined by the amount of unitary information supplied by the system. A glance at the figure for Question 5.2 above, will confirm the relatively similar rating for that question compared to Question 7.1. A lack of detail has been a major criticism of CMA. Given this relatively high rating, one would expect an overall rating for operational planning and control that is also quite high.

- Question 7.2 : Who are responsible for determining standard cost rates in your company?

Question 7.2 was intended to determine whether cost centre managers could be held responsible for variations between the planned cost rates for their cost centres and the actual cost rates. The rationale being that only if a person does his own budget can he be held responsible for it. The responses to this question in Figure 11.52 highlight the following detail. In 90 % of companies cost centre managers are involved in determining the rates for their cost centres. In 85 % of instances are the cost centre managers and the cost accountants involved in

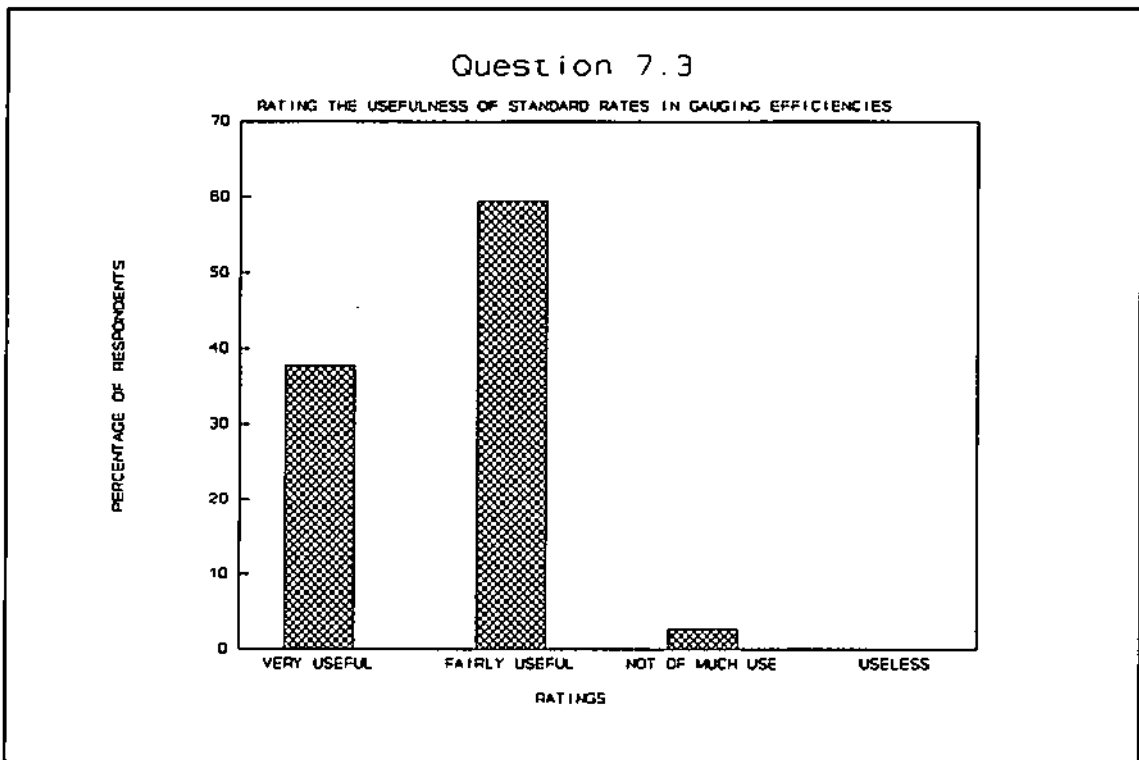
Figure 11.52

determining cost centre rates. In 95 % of companies the cost accountants are involved in determining or helping to determine cost rates. This last point highlight two interesting facts:

- A high degree of management accountants' involvement at lower levels of management during planning. The non involvement of accountants in CMA has been mentioned as a major drawback.
- The involvement of management accountants to such a large degree signifies the need for expertise due to the complexity of the concept.

The involvement of lower levels of management is however sufficiently high.

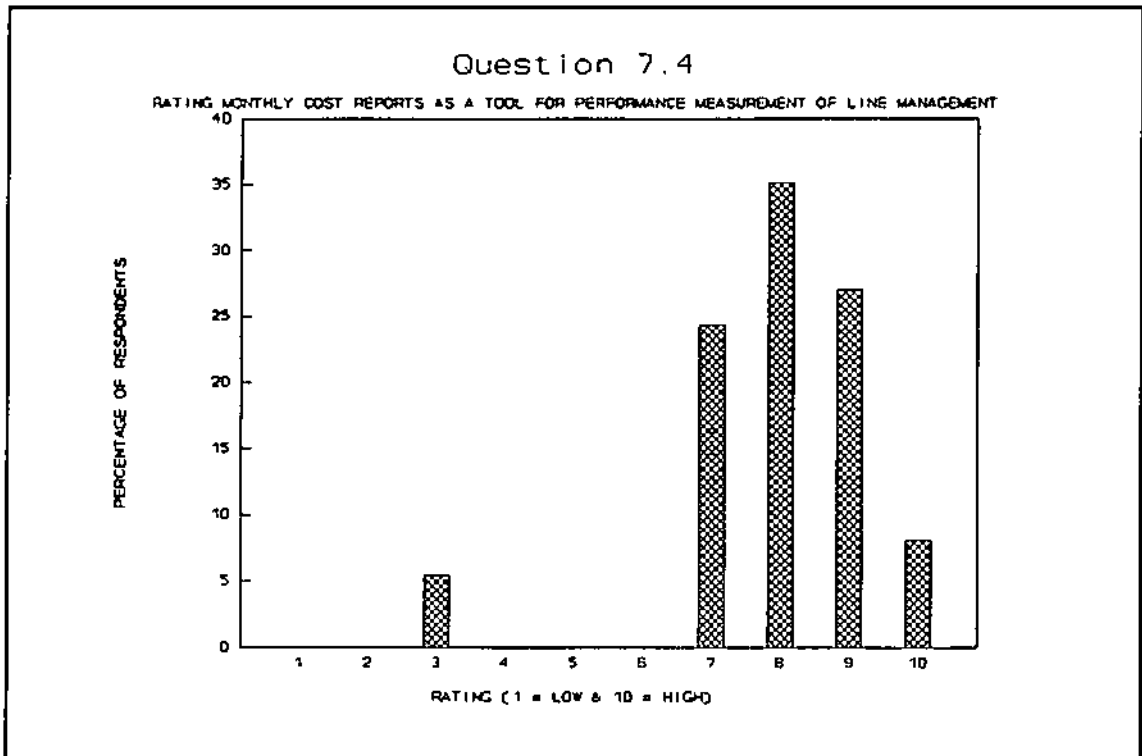
- **Question 7.3 : Are your cost rates of use in gauging efficiencies, i.e. 'are people doing their jobs right'?**

Figure 11.53

This implies the expression of efficiency parameters in monetary terms as well as using the unitary information that was measured in Question 7.1. Figure 11.53 shows the answers that were received for this question. Close on a 100 % of users, considers standard costs as 'Very useful' or 'Fairly useful' in gauging efficiencies i.e. are people doing their jobs right. This confirms the suggestion put forth under Question 7.1, that a high degree of relevance could be expected for operational planning and control.

- Question 7.4 : Please rate your monthly cost reports as a tool for performance measurement of line management.

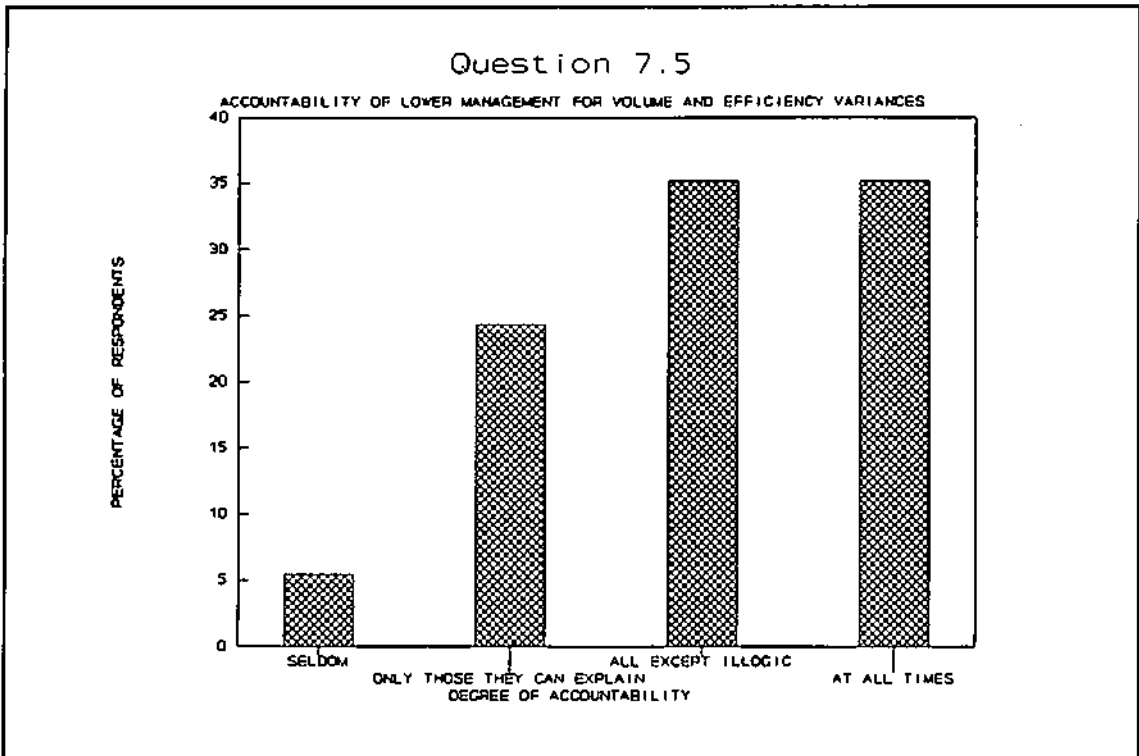
Figure 11.54 indicates the rating on a scale of 1 to 10 assigned, by respondents, to the Plaut ABC method as a performance-measurement tool. A rating of 8 or higher was

Figure 11.54

assigned by 70 % of respondents and a rating of 7 or higher by over 90 % of companies. This is again a very high rating and confirms the superiority of the Plaut ABC concept in operational planning and control. This rating agrees with the fact that cost centre cost management also rated high as a reason for improved profitability.

- Question 7.5 : To what extent are lower management held accountable for volume/efficiency variances in your organisation?

The last question in this section on operational planning and control, Question 7.5, measured the actual level of accountability of line management. This goes hand in hand with Question 7.2 above, where responsibility was tested for. A high degree of accountability is practised by 70 % of companies. It does, however, seem that the degree of

Figure 11.55

accountability is lower than the level of responsibility indicated by Question 7.2 above. Accountability is, however, still high (Figure 11.55) and confirms a high degree of decentralised operational responsibility, a characteristic that enhances decentralised decision making and quick reaction to changes in circumstances at the coal-face.

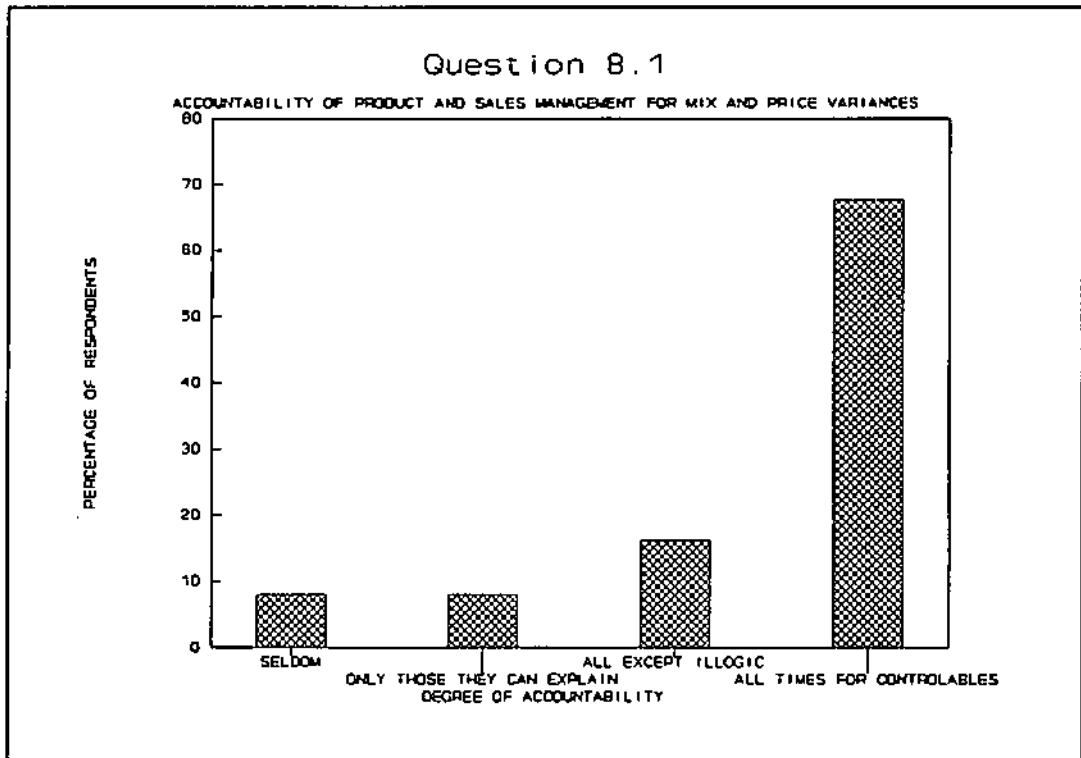
In conclusion, the level of operational planning and control supplied by the Plaut ABC concept is high, this stands in stark contrast to the current market standard in this field. Two reasons can be given for this:

- The high level of unitary information.
- The level of involvement of both line management and management accountants.

9. Parameter 7 : Management planning and control.

- Question 8.1 : To what extent are product and sales management held accountable for mix and price variances?

Figure 11.56

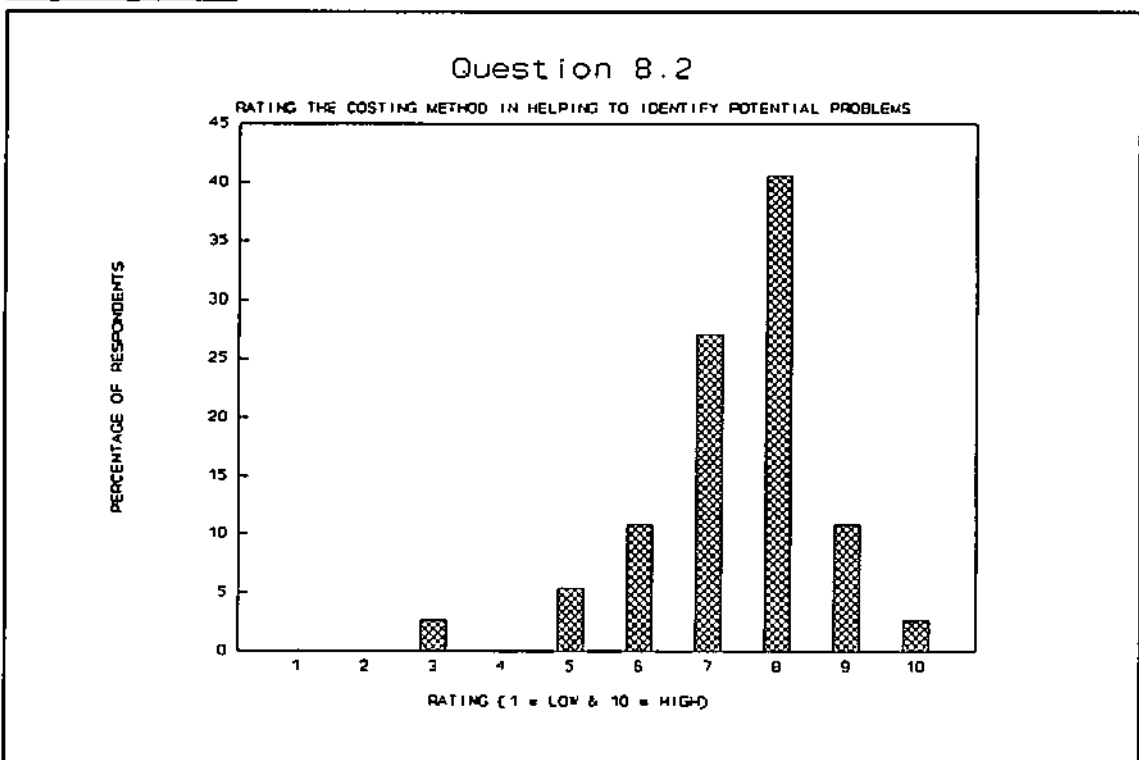


The first detail that was tested for was that of accountability. Figure 11.56 shows the distribution of responses between the four possible options. In about 68 % of companies managers are held accountable at all times for variances. About 85 % of companies had a high level of accountability. It is interesting to note that the accountability here is higher than the rating that were given for line management. The most likely explanation for this is probably the machine culture that prevails in so many capital- and capital-and-labour intensive manufacturing companies, resulting in a lot of emphasis being placed on production and through-put.

The level of control is still high. This question also brings into play the concept of product costing and control in this discipline. Product cost control is similarly on a very high level.

- Question 8.2 : How good is your costing method in helping managers identify potential problems?

Figure 11.57

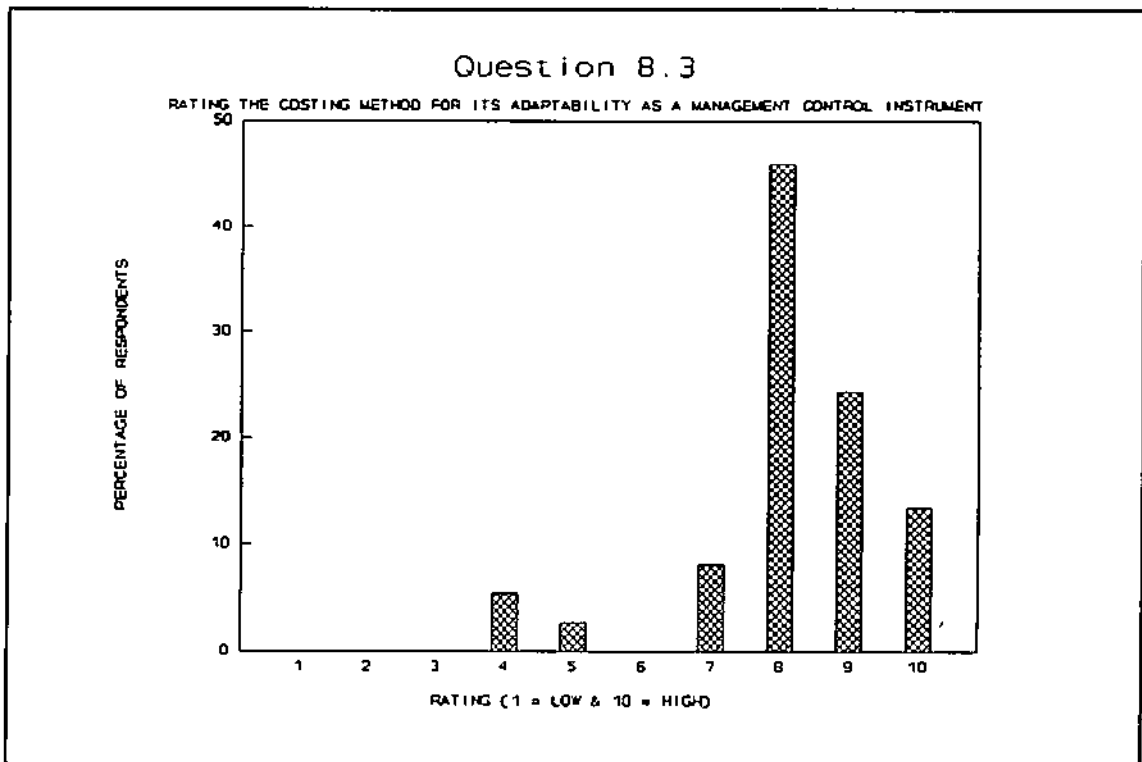


Question 8.2 has, apart from its application in management planning and control, also a place in parameter 5 : Decision relevance. Figure 11.57 gives the rating of Plaut users for the management accounting method in helping managers identifying potential problems. A rating of 8 or higher was given by 55 % of companies and a rating of 7 or higher was given by just over 80 % of companies. This rating re-iterates the findings for decision relevance

above, especially that of facilitating proactive management.

- Question 8.3 : As a management control instrument, how well does your costing system adapt to changes in the external environment? For example, changes such as: an economic upswing, causing a rise in sales volumes; or a drop in competitors' prices, causing a decrease in your sales volume; or an increase in inflation, causing rises in input costs.

Figure 11.58

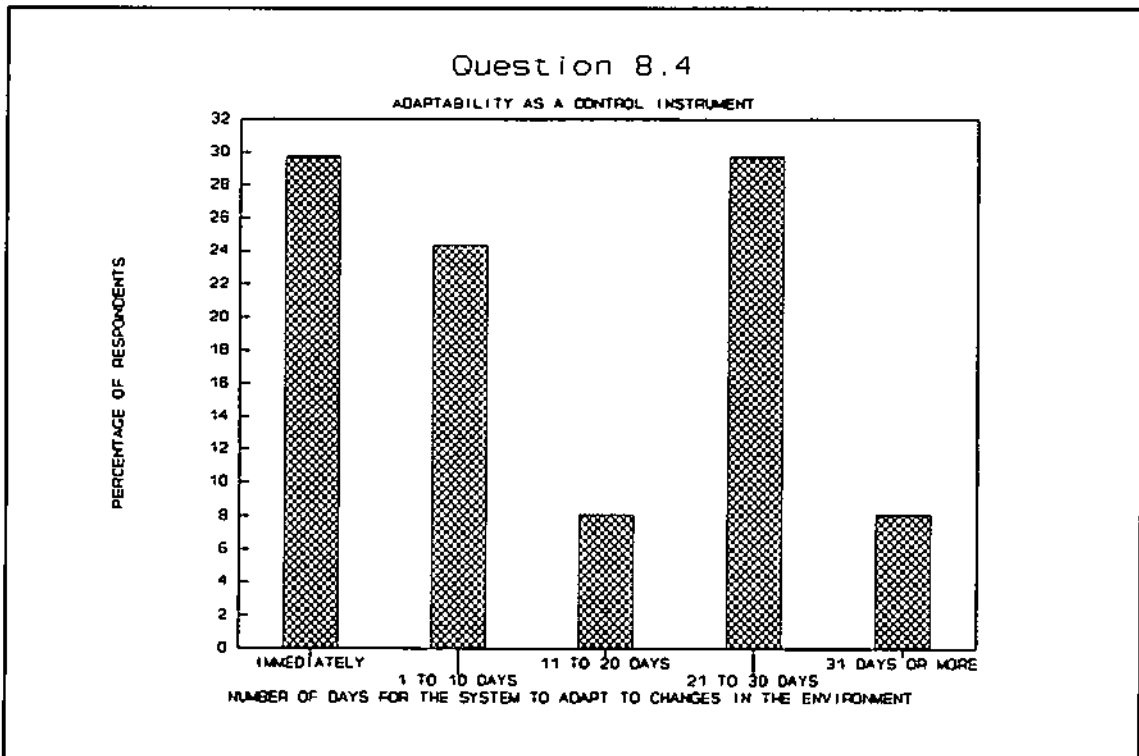


The next detail that was tested, was that of the Plaut ABC method as an instrument for management control within a dynamic environment, i.e. within an environment where uncontrollable external factors nullify basic assumptions

and planning parameters. A rating of 8 or higher was assigned by 82 % of companies. See Figure 11.58. This indicates that it is a very good management control instrument, note that the software has a major part to play here. Refer the next question in this regard.

- Question 8.4 : How long does it take for the adaption mentioned in Question 8.3 to take place?

Figure 11.59

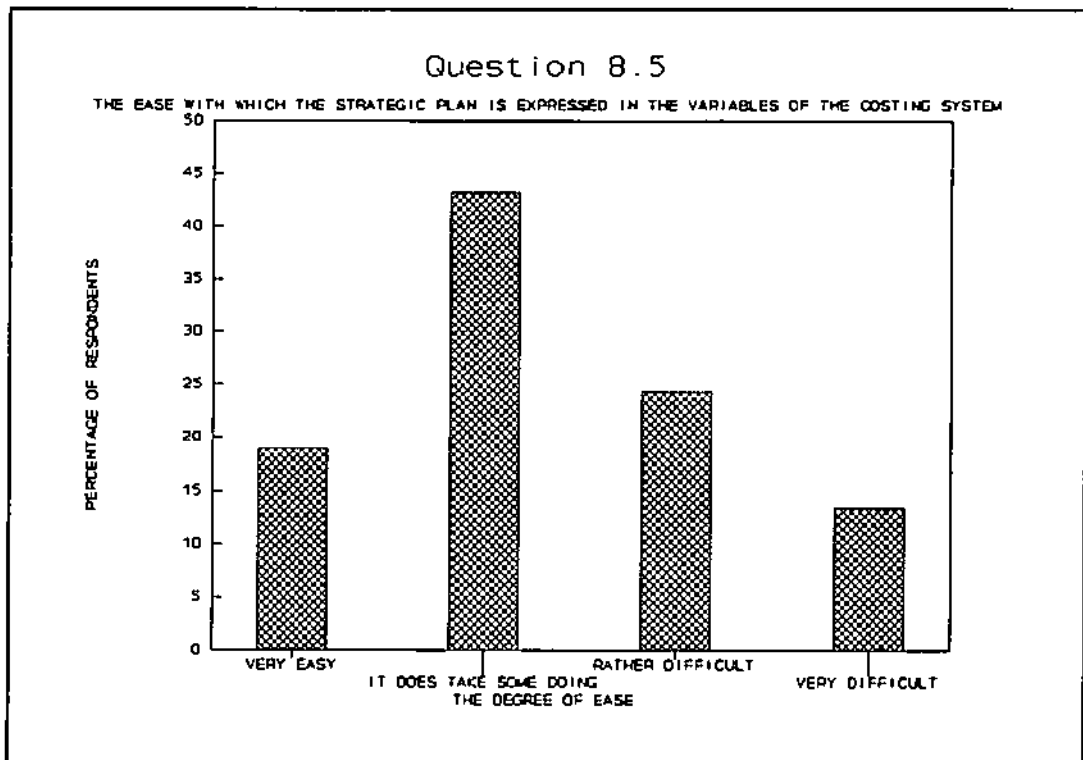


Question 8.4 was of a qualifying nature in that respondents had to indicate how long it took the system to adapt to changes in the external environment. About 54 % of respondents felt that the adaptation would have taken place within a matter of days. The information in Figure 11.59 seems erratic, but it must be kept in mind that the type of software package in use (on-line real-time or batch)

actually results in two classes of companies here. The two distributions can be seen Figure 11.59. The adaptability of an on-line real-time system obviously makes for a better control instrument.

- **Question 8.5 : How difficult is it to express your strategic plan in the financial and non-financial variables of your costing method, if you wanted to monitor the success with which your company's strategies are being implemented?**

Figure 11.60



In recent years, the ability of a management accounting system to accommodate an organisation's strategic plan in financial and non-financial variables, has been emphasised increasingly. This ability would enable top management to monitor the success of strategy implementation and the

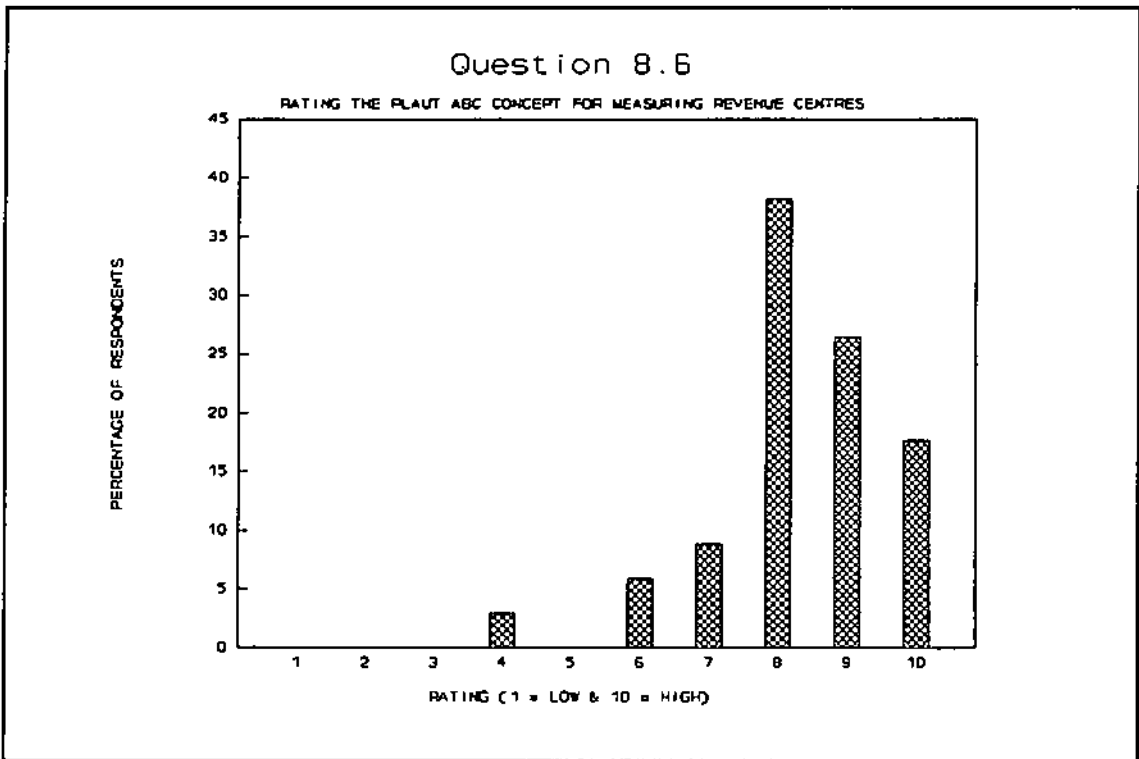
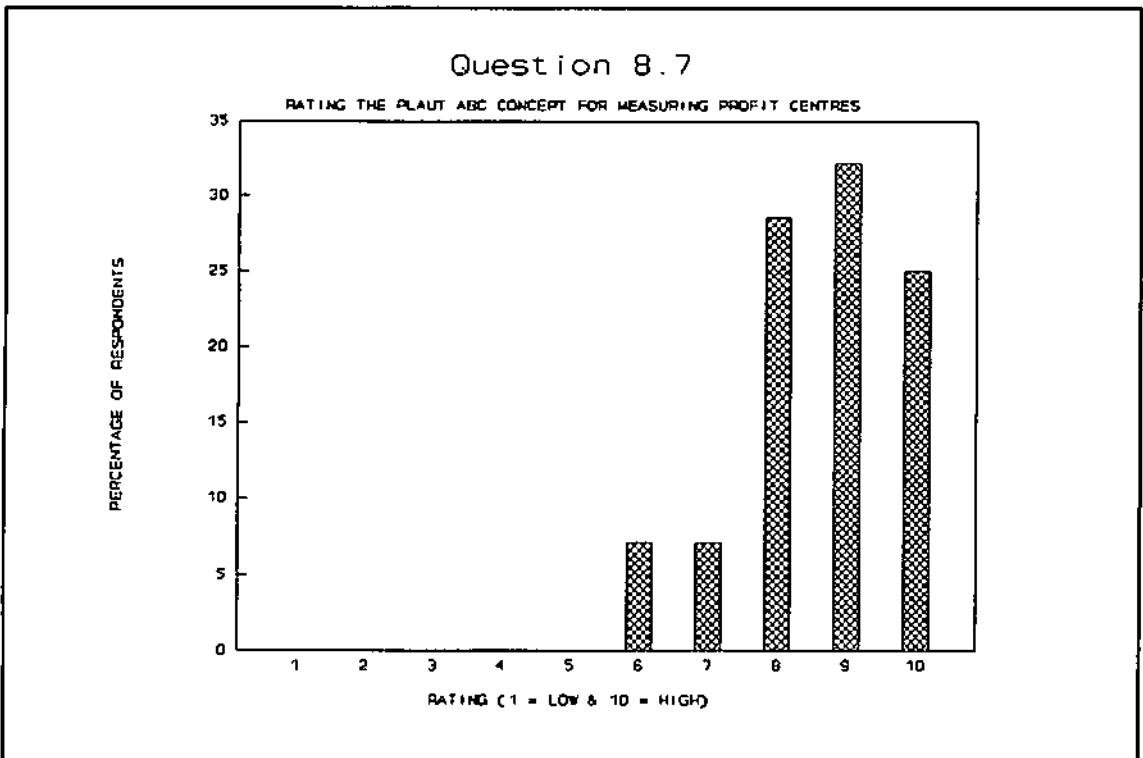
achievement of strategic goals. Companies rated the Plaut ABC method as follows: 63 % of companies felt that the strategic plan could be expressed in the management accounting system variables without much difficulty. An additional 25 % felt that it could be done, but only with a certain amount of difficulty - Figure 11.60. This rating, although high, is not of the same magnitude of relevance as the general rating of Plaut ABC. This fact is also evident in Figure 11.43. It seems that with regard to strategic issues the following apply:

- The Plaut ABC concept does not lend itself as well to the area of strategic management as it does to other areas of application in an organisation. This statement specifically implicates the software, and not so much the concept itself (Refer Figure 11.43).
- Users are not totally au fait with using the management accounting system for strategic purposes, or are not able to embody the variables that they want to manage in a concrete manner in the software.

Having said this, the rating for Plaut ABC is still far higher than that for CMA in this regard.

-Questions 8.6 and 8.7 : Please rate your costing method's effectiveness in measuring revenue centres / profit centres.

The last two points of detail that were tested for in regard to management planning and control is that of revenue centres and profit centres. This by nature implies

Figure 11.61**Figure 11.62**

the measuring of higher levels of management. Also note that this involves both planning and control, since contribution margin management (Chapter 5) requires the

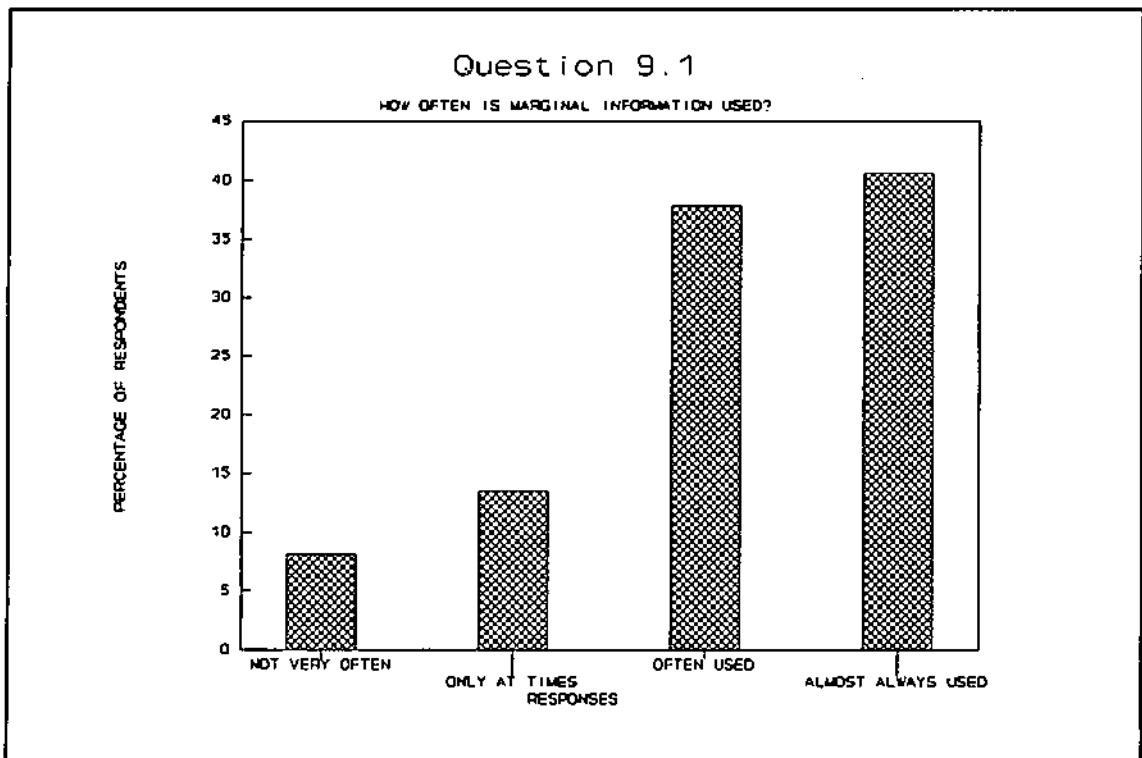
planning of both income and profits. The responses that were received from companies in rating Plaut ABC for measuring revenue and profit centres are given in Figure 11.61 and Figure 11.62 respectively. The effectiveness in measuring revenue centres was rated 8 or higher by just over 80 % of respondents and as 7 or higher by about 90 % of respondents. The effectiveness in measuring profit centres was rated 8 or higher by 85 % of companies and 7 or higher by over 90 % of companies. Plaut ABC there lends itself very well to the measuring of revenue and profit centres.

In conclusion it can be said, as for operational planning and control, Plaut ABC gets a similarly high rating for its relevance on management planning and control. Although the software plays a part here, those questions addressing the concept itself also got very high ratings (Questions 8.1, 8.2, 8.6 and 8.7).

10. Parameter 8 : Short run product management.

- Question 9.1 : Do you use marginal costing/contribution information for short run product decisions?

As motivated in Chapter 8, this has got some significance especially in the matter of product cost. As can be seen from Figure 11.63, almost 80 % of companies use marginal information 'Almost always' or 'Often'. If one had to bring this in line with the information on profitability it makes for very interesting facts. A large amount of caution is normally propagated with marginal information as

Figure 11.63

well as enough mistrust to raise some eye-brows whenever it is mentioned. Here it indicates the contrary, not that the assumption is now made that the increase in profitability is solely attributable to the use of marginal information. But keep in mind that some of the sample firms have had Plaut ABC for over a decade and although marginal information has a prominent place in these companies there has been no ill effects on profitability.

- Question 9.2 : Does your costing method produce product costs that are...

Question 9.2 ties in closely with Question 9.1. The rationale being that only if product costing information is trusted will marginal information be used with effectiveness. The degree of trust in product cost information is reflected by the frequency distribution in

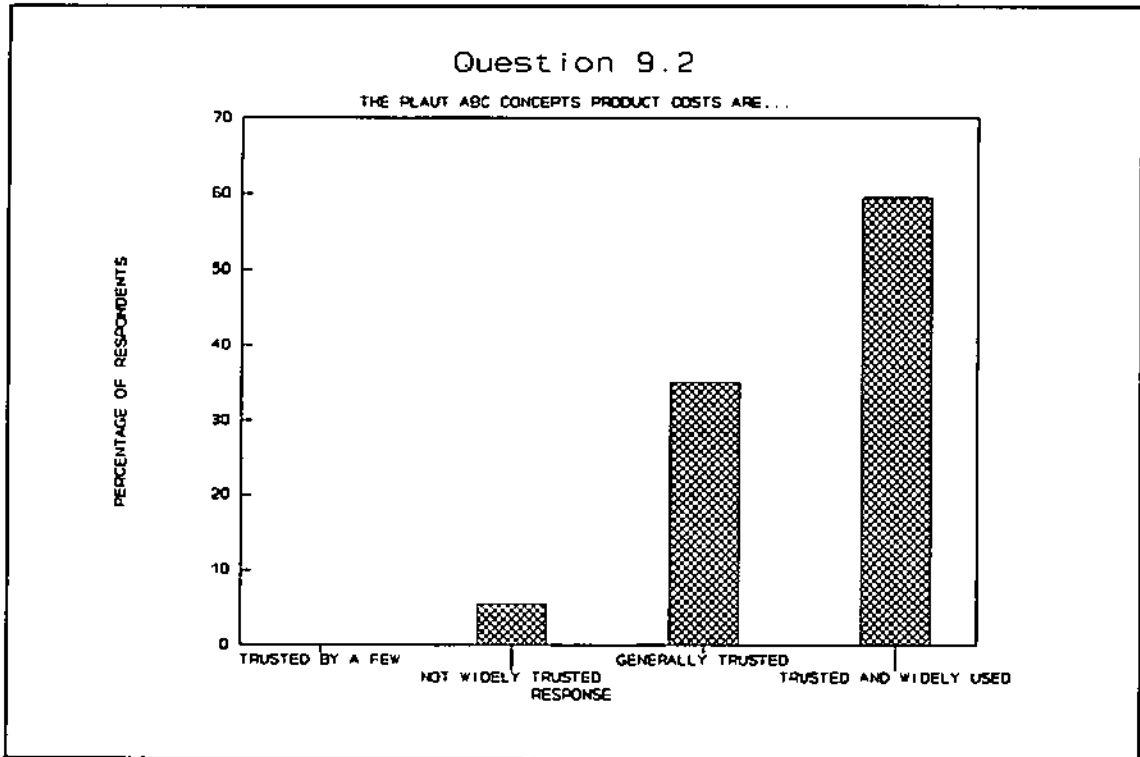
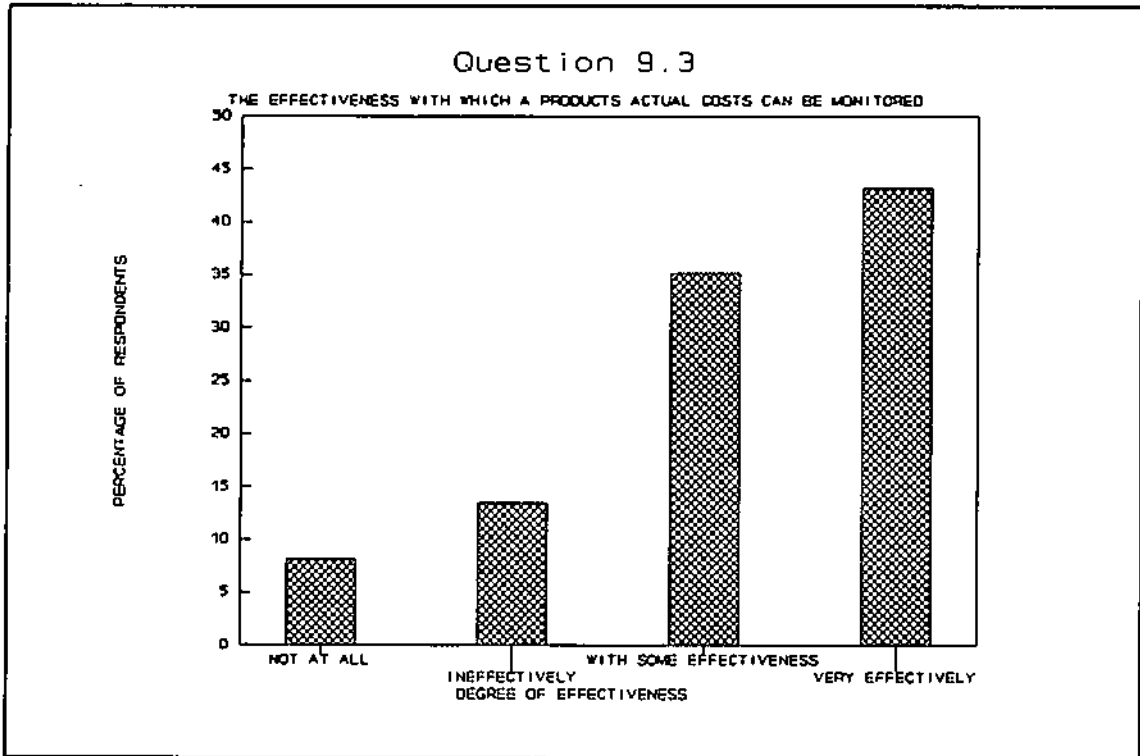
Figure 11.64

Figure 11.64. A rating of 'Generally trusted' or 'Trusted and widely used' was marked by 95 % of respondents. This indicates a very high level of trust in the information. In this regard the situation is just the opposite of what prevails in a CMA environment.

- Question 9.3 : How effectively are you able , with the use of costing information, to monitor a products actual cost through the year?

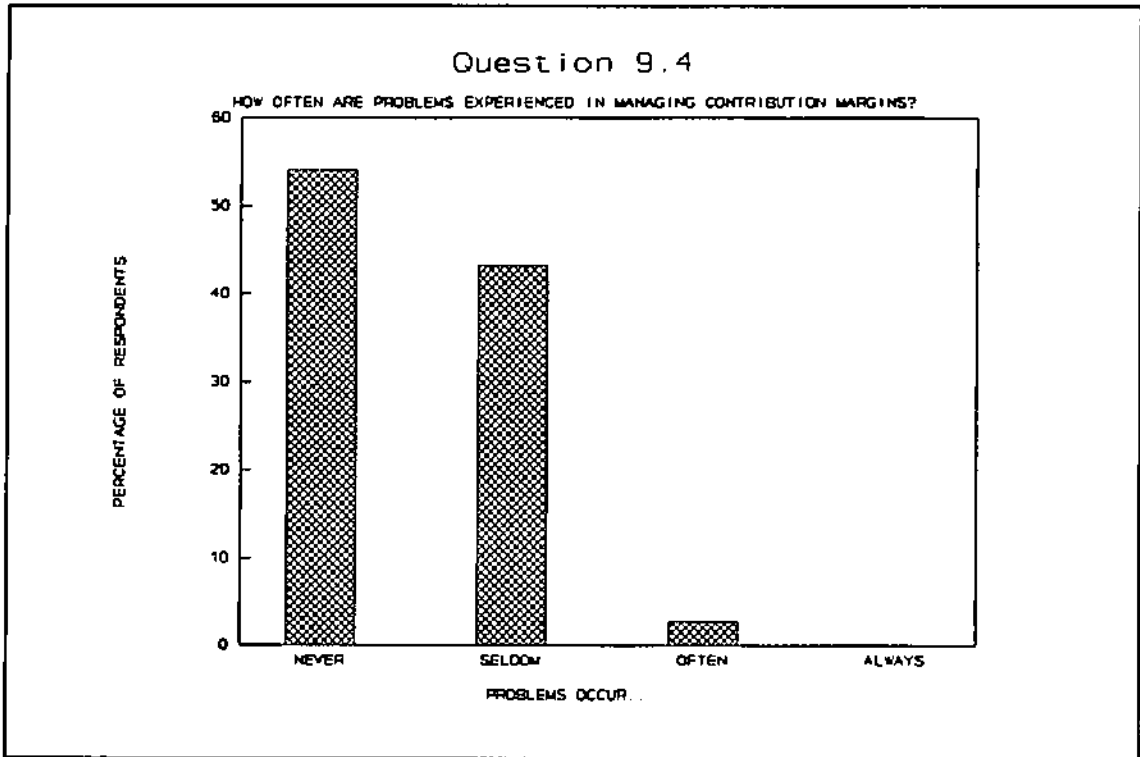
Figure 11.65 shows the distribution of the responses that were received for the four possibilities in this question. About 80 % of respondents felt that a product's actual cost could be monitored with some degree of effectiveness. This question is an indication of the advantage of treating product costing as a separate discipline

Figure 11.65

- **Question 9.4 : How often does it happen that changes in : your product's selling price and product mix sold, leave you with no idea as to what your actual total contribution margin should have been for a specific period?**

Figure 11.66 shows that 98 % of respondents felt that such changes 'Seldom' or 'Never' caused an uncertainty as to what the actual contribution margin should have been. This rating implies excellent product profit contribution management capabilities. This is confirmed by the fact that contribution margin management was listed as the main reason for profitability increasing. (Figure 11.11).

With regards to short run product management, this parameter has one of the higher ratings for relevance amongst the parameters. This is a major improvement over the current CMA practice where

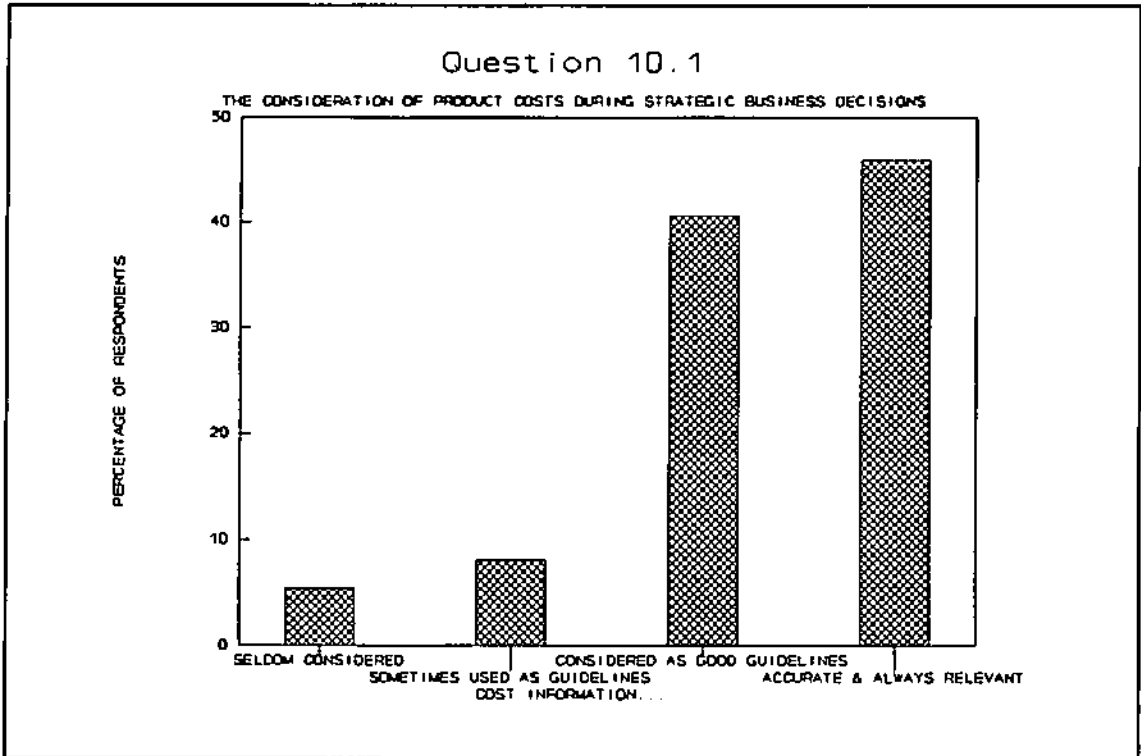
Figure 11.66

product costing comes in last. The superiority of Plaut ABC in this regard must surely be attributed to the treatment of this subject as a separate discipline.

11. Parameter 9 : Long run product management.

- **Question 10.1 : To what extent are product costs considered during strategic business decisions?**

Figure 11.67 shows how respondents marked the four options to Question 10.1. 85 % of companies consider the information on product cost 'Fairly accurate and good guidelines' or 'Accurate and relevant'. These responses confirm what has been said under Question 8.5 above. Namely, that the Plaut ABC concept itself, when the software is not in play, does get high ratings on strategic issues. This is specifically true of the information that

Figure 11.67

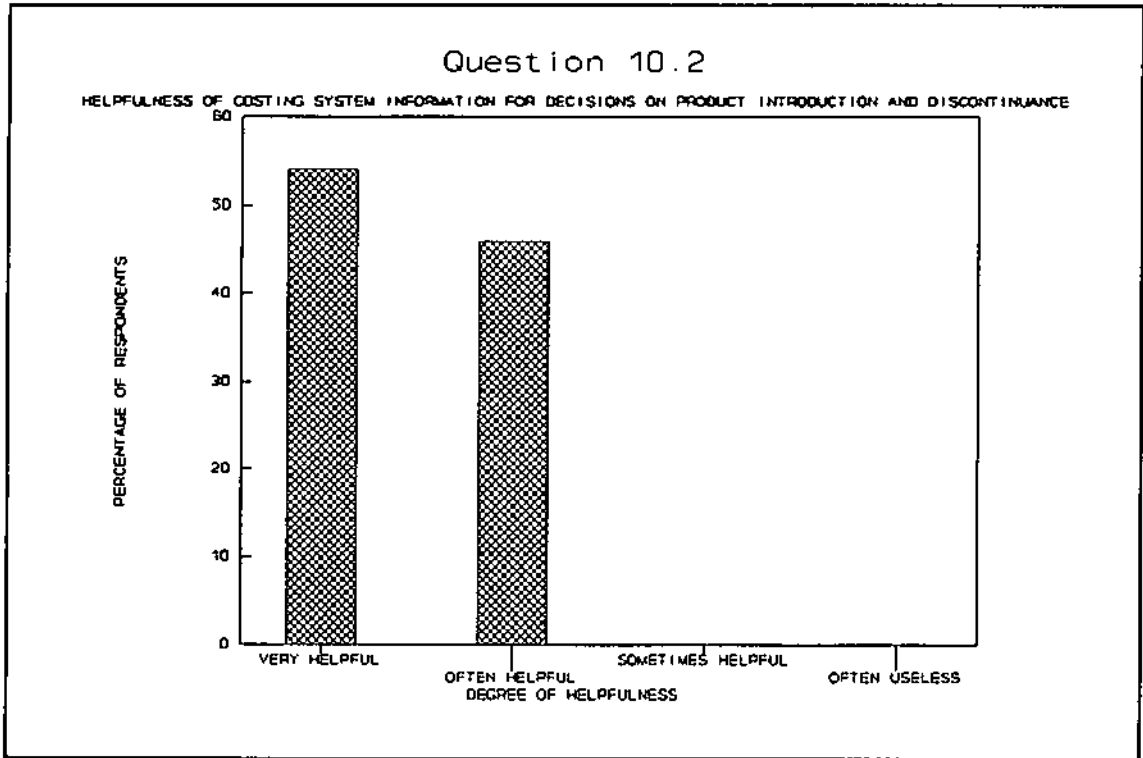
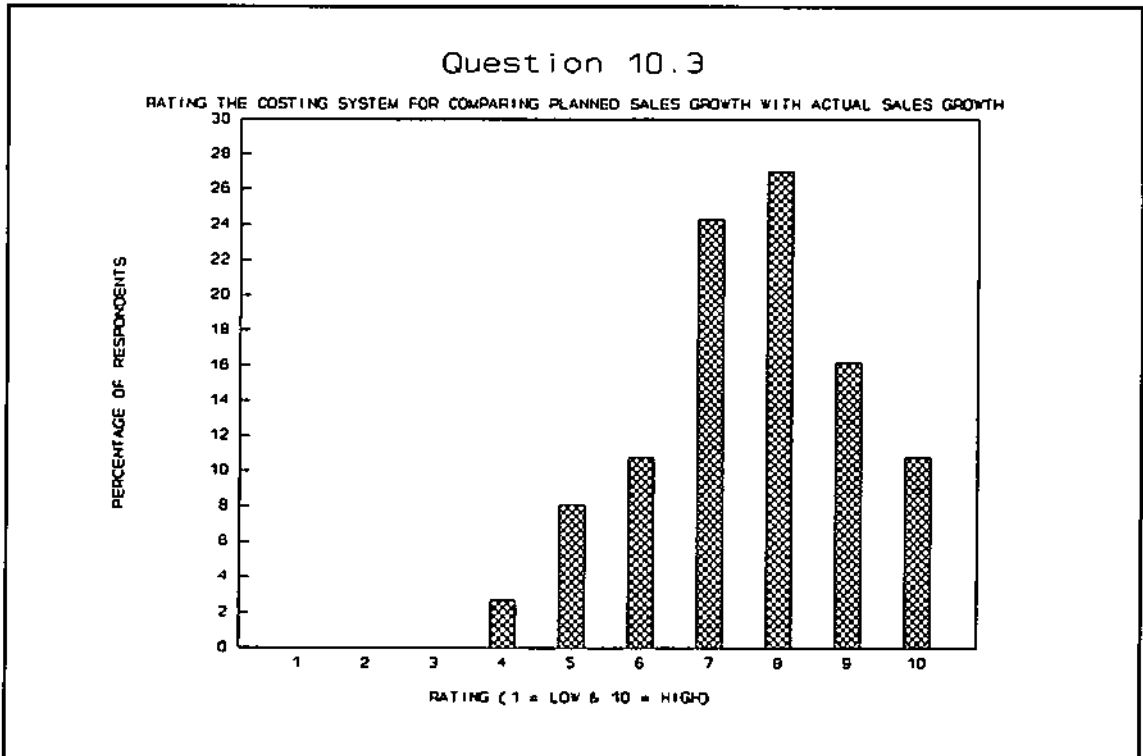
is available.

- **Question 10.2 : When you have to decide on the introduction of a new product or the discontinuance of an old product, do you find your costing method's information...**

Figure 11.68 reflects the responses received. 100 % of respondents found the information either 'Very helpful' or 'Often helpful'. This confirms the statement just made, above, on information for strategic use.

- **Question 10.3 : Rate your costing method as an instrument for helping you compare actual product sales growth with planned product sales growth.**

The monitoring of strategic goal achievement was the subject here, but in this instance specifically related to

Figure 11.68**Figure 11.69**

products. Note that it also has an element of management control. Figure 11.69 shows the rating of respondents on a scale of 1 to 10. A rating of 8 or higher was given by

53 % of respondents and a rating of 7 or higher by 78 % of respondents. This rating reveals similar trends to those given in Questions 8.5 and 5.4c. What was said there about information of a strategic nature also applies here.

- Question 10.4 : Please rate your costing method for its overall relevance to your company.

Figure 11.70

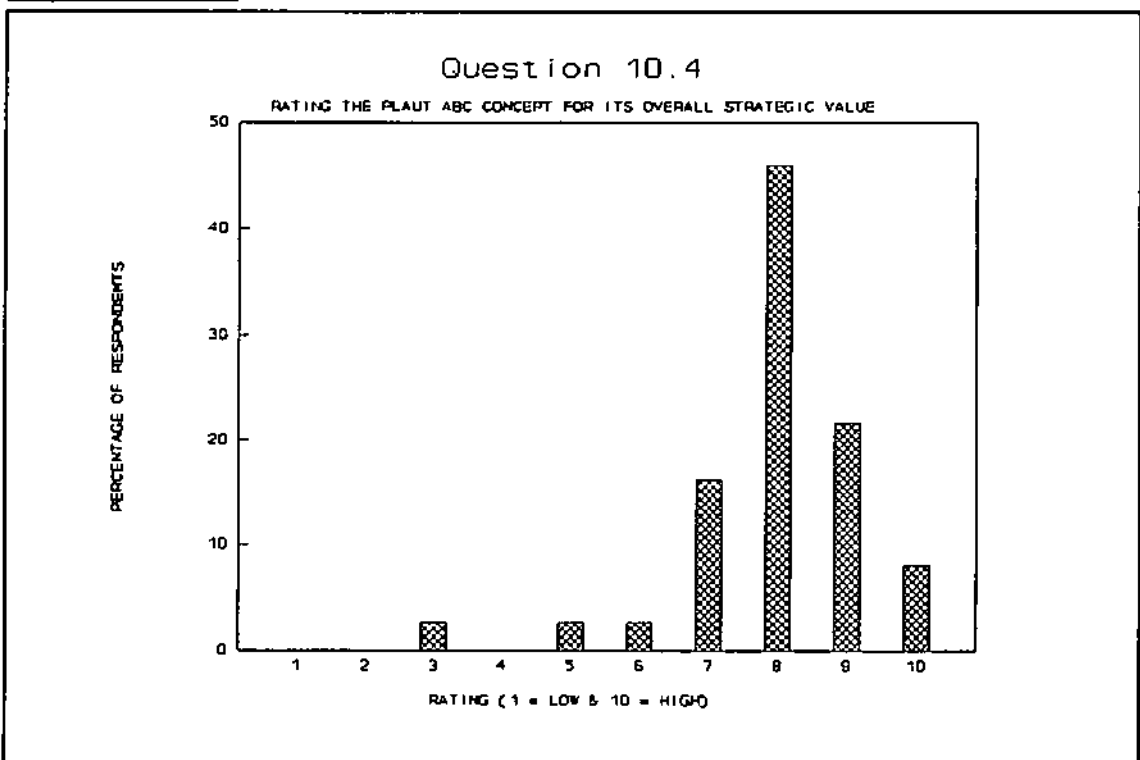
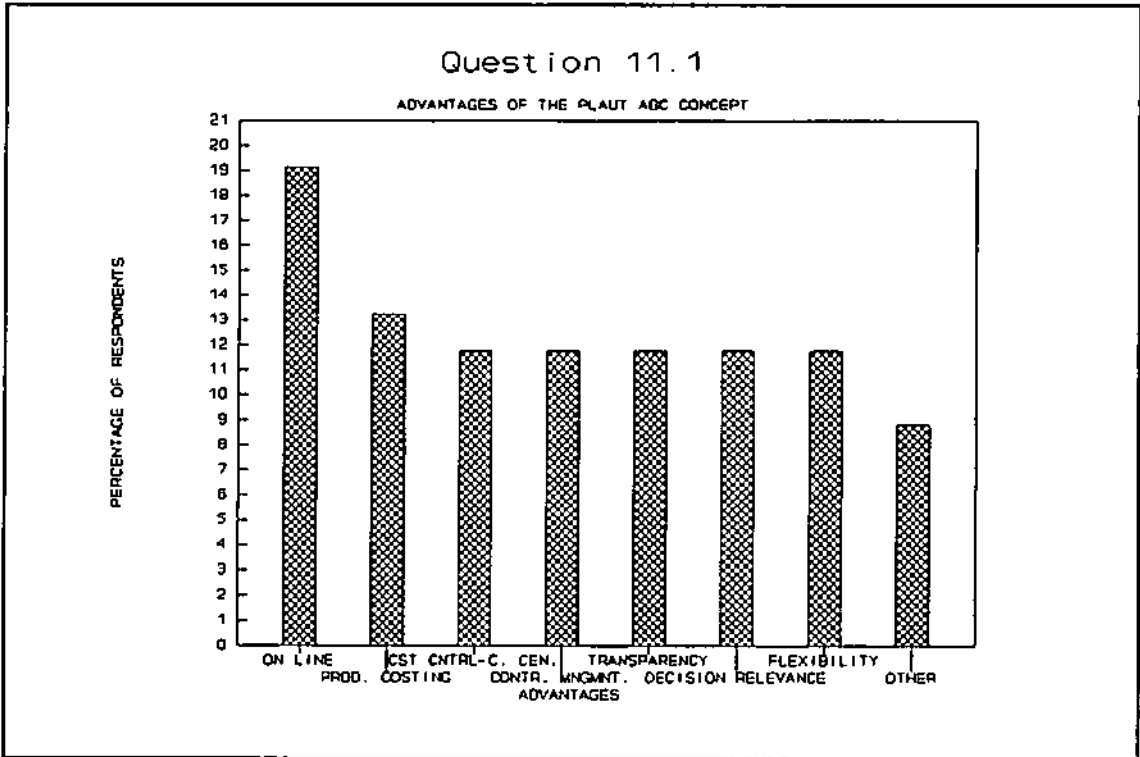


Figure 11.70 shows again the ratings on a scale of 1 to 10. About 75 % of companies rated the overall strategic value with an 8 or higher and 90 % of companies rated it with a 7 or higher. This is high rating and seems correct if one considered the fact that this question did not really imply the software.

12. Advantages and disadvantages of the Plaut ABC concept.

- Question 11.1 : Advantages of the Plaut ABC concept as experienced by its users.

Figure 11.71



The bar chart in Figure 11.71 is very much the same as the one for the reasons given for profitability increases. The only significant factor here is the number of users that consider the on-line integrated system an advantage. Transparency and flexibility are also two new factors. The category 'Other' included reasons like, latest theory, good MIS and simulation. It is interesting to note that there is not really an overtly dominant advantage, advantages are spread over a range of subjects. This is indicative of the comprehensive approach to management accounting taken by the Plaut organisation.

- Question 11.2 : Disadvantages of the Plaut ABC concept as experienced by its users.

Figure 11.72

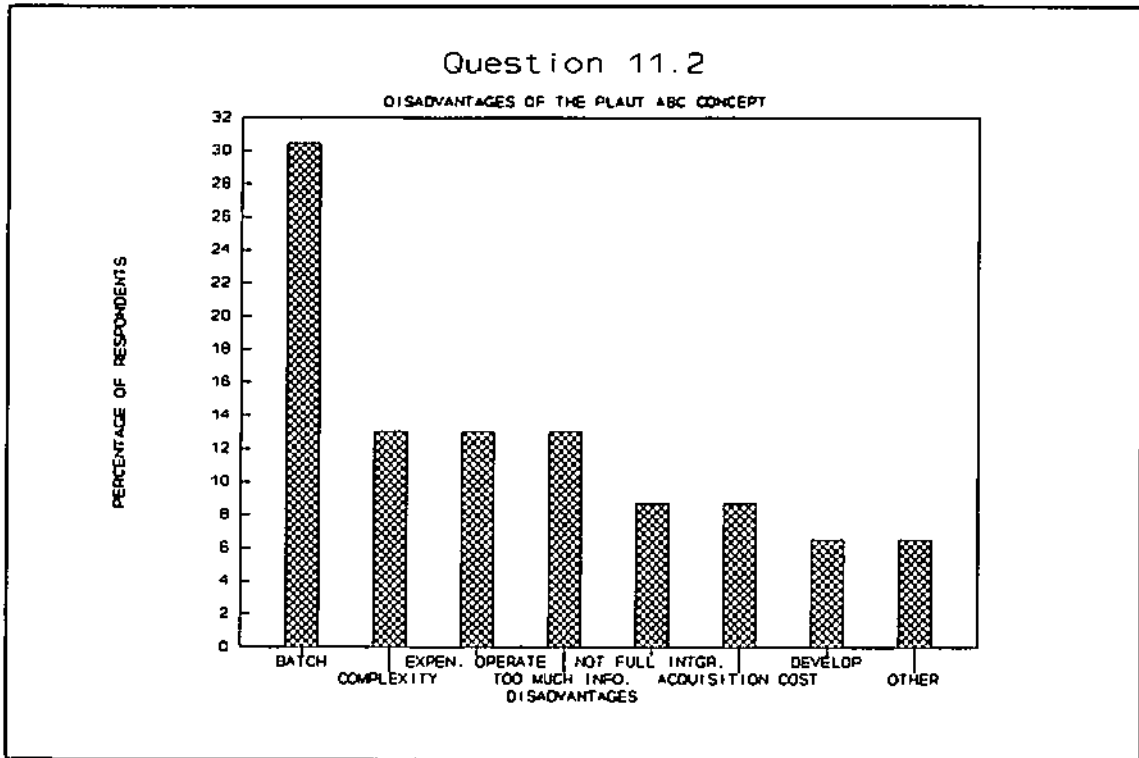


Figure 11.72 shows the major disadvantages. In agreement with the advantages, the biggest disadvantage is given as batch processing, by those users that utilise this type of system. About 60 % of the disadvantages can be grouped under the heading - 'Software'. These are: batch, not fully integrated, acquisition cost and other. Notably the first two will be less significant to new clients since batch systems have been discontinued. Two interesting disadvantages given is that of 'Too much detail' and 'Complexity'. The latter was already preempted during the analysis, at the time that the high degree of involvement of management accountants were discussed (Question 7.2). 'Too much detail' could not really be considered a

disadvantage, since it is really up to individual organisations as to the level of detail they implement and maintain. A company also determines the exposure of different levels of management to available detail. The category 'Other' included reasons like, not user friendly software, lacking of strategic-operational link, the ABC concept to be more developed in the company and simulation lacking (the older Plaut software users).

13. Conclusion.

To reiterate the finding of this research report : Plaut ABC gives an unequivocally high degree of relevance in today's management accounting domain.

Chapter 12

The aim of this report was to prove the superior relevance of Plaut ABC, this aim has been achieved. The findings can be summarised as follows:

- Plaut ABC gives a superior degree of overall relevance to its practitioner as a management accounting method.
- Plaut ABC have a profound and positive effect on a user's profitability.
- On all nine parameters for relevance the Plaut ABC concept were rated very high for its relevance.
- The parameter that was rated highest of all was - Decision relevance.
- There is a decided advantage in relevance if a company is using an on-line real-time integrated software package.

A question that could well be asked is, what are the essentials to ensure maximum relevance from the Plaut ABC concept? The research report has indicated the following:

- A proper Analytical Cost Planning must be performed during the budgetary process. This is needed for two reasons: the complexity of the concept and to achieve adequate exposure of all levels of management to the concept.
- Keep the theory pure. It is important to note that Plaut ABC, of necessity utilises certain approaches to enhance its usefulness as a management accounting method. This implies for example the treatment of depreciation, in a different manner to the financial system. This is done,

to supply decision relevant information, amongst other things, on the utilisation of assets and the introduction of new products. These novelties are essential to producing its high degree of relevance, if this was not true then classic management accounting, captivated by financial dictates, would have given an equally high degree of relevance. On this very point of decision relevance it is interesting to note that it got the highest rating for relevance of all parameters.

- Separate the financial accounting and management accounting concepts. Although the research indicated that physical separation increases relevance the latter was purely an expression of the separation of the two concepts. Financial dictates will inevitably effect relevance due to the importance of this function in today's capital hungry environment but this influence must be minimised. Financial accounting should not govern management accounting.

Finally, a relevant management accounting method does exist today. Is the PC approach to management accounting really a viable solution? Should large amounts of resources be dedicated to an intrinsically flawed approach, CMA, to management accounting. It is the conclusion of the this report that such options are unnecessary.

ARTICLE

Introduction.

A lot has been said in recent years about management accounting and its direction in the future. The debate was largely triggered by accusations that management accounting had lost its relevance (Kaplan, 1987. Relevance Lost. The Rise and Fall of Management Accounting). The battle field can be divided into two camps: Those proposing the evolution of Classic management accounting and those propagating the revolution of a new approach.

One of the mainstream options being proposed as the solution to the problems of management accounting is that of Activity Based Costing (ABC). The war of words has reached that stage where ammunition are being reused with regularity. The debate is now at the stage where empirical research has become indispensable.

Such a research project was recently undertaken, by the School for Business Leadership of the University of South Africa. This research project set out to achieve the following:

- measure the relevance of the Plaut ABC concept.
- prove that a management accounting method exists that ensures relevance today and for the future.
- indicate that the 'solutions' currently being proposed by enlightened academics are not new.
- prove that the ABC solutions being put forward are unnecessary re-inventions of the wheel and will not necessarily ensure a high degree of relevance.

The Plaut ABC concept.

The Plaut ABC concept was founded in 1946, when the Plaut consulting firm was started by Dr. H.G. Plaut. He worked closely with Prof.W. Kilger, the latter wrote the first exegesis on Plaut ABC theory in 1961. The concept has to date been implemented in over 2300 companies in 7 countries.

Plaut ABC theory covers three main areas of application:

- **Cost centre accounting**, here activity bases(cost drivers) are used for planning and control of cost centre costs. Standard activity rates are used to charge services between cost centres and to products. Overhead cost authorization and control is also addressed here.
- **Product costing**, is treated as a separate discipline, this requires the appointment of product managers to effect the management related responsibilities. Direct product costs and activity quantities from cost centres are planned and controlled here.
- **Contribution margin management**, entails the planning and control of contribution margins per product and product group for profit maximization. The accurate allocation of sales and administrative overheads per invoice line item also occurs here.

Research procedure.

A questionnaire was compiled that contained the following nine parameters for relevance:

- Profitability.

- Timeliness.
- Cost management
- Reporting emphasis.
- Decision relevance.
- Operational planning and control.
- Management planning and control.
- Short run product management.
- Long run product management.

The questionnaires were posted to a population of 180 multi-product Plaut ABC users that have implemented the concept since 1946. Of the responses received 37 were found to be usable. This was sufficiently large to ensure the use of the standard normal distribution for the statistical tests that had to be performed.

Findings.

The findings of the research report are the following:

- On overall relevance the Plaut ABC concept supplies a superior degree of relevance to Classic management accounting
- On all nine the parameters the concept were rated highly. Plaut ABC received a mean rating of 7.6 out of a possible 10. The rating for Classic management accounting on the other hand was a mean of 1.
- Of particular interest is the fact that all but one of the respondents experienced an increase in profitability,

which they attributed to their implementing Plaut ABC. The report also showed that the increase in profitability was due to the fact that Plaut ABC addresses a whole range of issues in an organisation.

- The parameter that rated highest for relevance was decision relevance.
- The personal computer approach to ABC is not a viable solution to the problems of Classic management accounting.

Conclusion.

ABC relevance proved - a management accounting method that ensures relevance does exist today.

Appendices.

DATE: _____	Questionnaire	COMPANY CODE: _____
<u>Instructions:</u> I) Please answer open questions only in the space provided. II) For closed questions mark only ONE answer, (the most appropriate answer) as follows: 'The most appropriate answer' X III) When you are asked to rate or compare your costing method in a question, use as a frame of reference your knowledge of what is generally available in today's business environment. <u>Do not use</u> as a frame of reference, when you have to compare or rate, the theoretical ideal of what a costing method is suppose to do.		<u>Return address:</u> Please note that the return address for this questionnaire is that indicated on the accompanying envelope: Mr. A. van der Merwe Private Bag X32 Springs South Africa 1560

1. General:

1.1 Which one of the following best describes your industry?

Capital and labour intensive manufacturing	Capital intensive manufacturing	Labour intensive manufacturing	Service Industry
--	---------------------------------	--------------------------------	------------------

If you answered 'Service Industry' skip the next question.

1.2 Which one of the following production processes do you have?

Individual projects	Medium to small jobbing	Assembly lines	Batch process	Continuous flow process
---------------------	-------------------------	----------------	---------------	-------------------------

1.3 How many baseline(custom) products do you offer in the market place?

1.4 What costing method does your company use? _____

1.5 In what year was this costing method implemented?

1.6 Did you receive special training on how to use this costing method? Yes No

1.7 How does the overall usability of your old and new costing methods compare?

The old method was much better	The old method was slightly better	The new method is slightly better	The new method is a lot better	The new method is far better
--------------------------------	------------------------------------	-----------------------------------	--------------------------------	------------------------------

2. Profitability:

2.1 What has been the effect of your current costing method's implementation on your company's profitability?

It increased drastically	It increased markedly	It increased slightly	It didn't change	It decreased	Unknown: too many factors involved
--------------------------	-----------------------	-----------------------	------------------	--------------	------------------------------------

If you answered 'Didn't change' or 'Unknown' skip the next question.

2.2 How long after implementation did profitability change?

Immediately	1 to 4 months	5 to 12 months	1 to 2 years	Longer
-------------	---------------	----------------	--------------	--------

2.3 A company that for the past ten years showed poor profitability and had return on investment below industry average, decides to implement your costing method for the first time. Their predicament is largely due to internal inefficiencies and inadequate control. Given that external factors do not cause inordinate rises in profits, what do you think would the result of such an implementation be on this company's profitability?

Uncertain: too many factors involved	Will decrease	Will not change	Will increase slightly	Will increase markedly	Will increase drastically
--------------------------------------	---------------	-----------------	------------------------	------------------------	---------------------------

2.4 Why did you mark the answer that you did in question 2.3 above.

3. Timeliness:

3.1 How many calendar days after the end of a month, are formal cost center and product reports available?

Cost Centers?		(Days)	Products?		(Days)
---------------	--	--------	-----------	--	--------

3.2 Which computer based costing system does your company use?

3.3 Is the software realtime on-line software? Yes ☐ No ☐

If you answered 'NO' skip the next two questions and go to Question 3.6.

3.4 What percentage of total monthly costs are not available online (is batch processed data at month end)

0%	0% to 10%	10% to 25%	25% to 50%	More than 50%
----	-----------	------------	------------	---------------

3.5 Does your company use the on-line facility for cost center and/or product reports and control?

Not used	Used only for cost centers	Used only for products	Used for both
----------	----------------------------	------------------------	---------------

3.6 At what intervals do you report on factors that are critical to the success of your company, i.e. items that need close monitoring?

Monthly	Every	week/s	Every	day/s	Online
---------	-------	--------	-------	-------	--------

4. Cost management:

4.1 You are approached by a company that has serious cost problems, high overheads, and managers alibi's that cannot be refuted. What would you recommend?

Highly recommend your current costing method	Recommend your current costing method	Maybe, recommend your current costing method	Recommend another costing method
--	---------------------------------------	--	----------------------------------

If you recommended your current costing method then skip the next question.

4.2 What other costing method would you recommend?

4.3 How often do you find that when the product mix produced changes and/or resource input prices change, that your costing method fails to provide you with accurate information for product cost control?

Never	Very seldom	Occasionally	Often	Very often
-------	-------------	--------------	-------	------------

4.4 How usable are your standard cost center rates for 'make-buy' decisions?

Very Usable	Occasionally usable	Seldom usable	Not usable at all
-------------	---------------------	---------------	-------------------

4.5 Please rate your costing method as a tool to control overhead costs.

Inadequate tool
1
2
3
4
5
6
7
8
9
10
 Very effective tool

5. Reporting emphasis:

5.1 How are your company's cost accounting and financial accounting functions accommodated in your organisational structure?

Both functions are being done by one department	They are separated into two departments reporting to one superior.	They are separated into two departments, each reporting to their own superior.
---	--	--

5.2 Which of the following best describes the information available from your costing system?

Large amounts of detail that effectively facilitates operational control	Adequate detail that supports most aspects of operational control	Information that is not too detailed and supports management decision making	Aggregate information, ideal for compiling monthly financial statements
--	---	--	---

5.3 Please rank the 3 items below from 1 to 3 for each of the periods indicated, so that your ranking will best reflect your company's emphasis for each of the three periods. The item ranked 1 must be the one considered most important for that particular period:

	P E R I O D S :				R A N K I N G
	0 to 6 months	6 months to 2 years	2 years and more	Total	
Item a: Financial statements to monitor profitability.....	[]	[]	[]	[]	↑
Item b: Cost reports to manage costs.....	[]	[]	[]	[]	
Item c: Reports reflecting strategic progress.....	[]	[]	[]	[]	

5.4 Horizontally total up your rankings in Question 5.3 above and write these values into the total column provided there. To what extent is your costing method instrumental in helping you manage the item you ranked lowest by total in Question 5.3 above. If more than one item ranks equally low, skip this question.

It is useless	It helps a little	It is often helpful	It is very helpful
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6. Decision relevance:

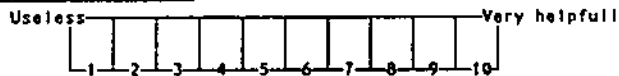
6.1 Which one of the following do you consider an important characteristic of your current costing method?

Rates are based on sound historic information ☐

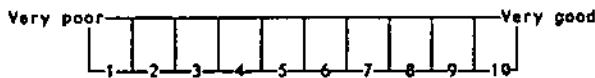
It emphasises the present situation ☐

It is future orientated through planned rates and product contribution plans ☐

6.2 Rate your costing method in so far as it helps you identify problem areas in your organisation.



6.3 How do you rate the information from your costing method that you must use to make decisions on products and customers.



6.4 How difficult is it to track the impact of previous decisions, through your costing method? For example decisions such as: buying a new asset, changing a distribution channel or more training of personnel.



7. Operational planning and control:

7.1 Do you consider non financial(unitary) information, such as activities, capacity utilisation, standard hours per product etc., supplied by your costing system to be...

Severely lacking ☐

Insufficient ☐

Sufficient ☐

Very good ☐

Excellent ☐

7.2 Who are responsible for determining standard cost rates in your company?

Cost center heads only ☐

Cost accountants only ☐

Cost center heads together with cost accountants ☐

Cost center heads together with their managers ☐

Cost center heads together with their managers and cost accountants ☐

7.3 Are your standard costs of use in gauging efficiencies i.e. 'are people doing their jobs right'?

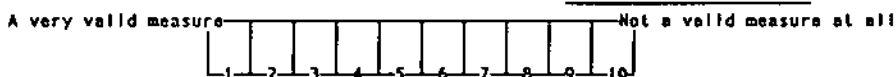
Very useful ☐

Fairly Useful ☐

Not of much use ☐

Useless ☐

7.4 Please rate your monthly cost reports as a tool for performance measurement of supervisors.



7.5 To what extend are lower management held accountable for volume/efficiency variances in your organisation?

They are seldom held accountable since the environment plays havoc with the plan. ☐

They are only held accountable for the variances that they can explain. ☐

They are mostly accountable, except for variances that seems illogic. ☐

They are at all times accountable for these variances ☐

8. Management planning and control:

8.1 To what extent are product and sales management held accountable for mix and price variances?

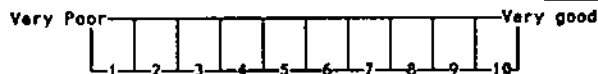
They are seldom held accountable since the environment plays havoc with the plan.	
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They are only held accountable for the variances that they can explain.	
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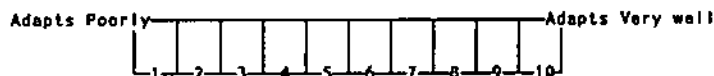
They are mostly accountable, except for variances that seems illogic.	
---	--

They are at all times accountable for controllable variances	
--	--

8.2 How good is your costing method in helping managers identify potential problems?



8.3 As a management control instrument, how well does your costing system adapt to changes in the external environment? For example, changes such as: an economic upswing, causing a rise in sales volumes; or a drop in competitors' prices, causing a decrease in your sales volume; or an increase in inflation, causing rises in input costs.



8.4 How long does it take for the adaption mentioned in Question 8.3 to take place?

(Please enter values if you answer days/weeks or months)

Immediately	
-------------	--

Days	
------	--

Weeks	
-------	--

Months	
--------	--

8.5 How difficult is it to express your strategic plan in the financial and non-financial information variables of your costing method, if you wanted to monitor the success with which your company's strategies are being implemented.

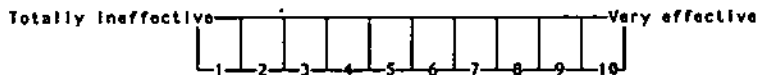
Very easy	
-----------	--

It does take some doing	
-------------------------	--

Rather difficult	
------------------	--

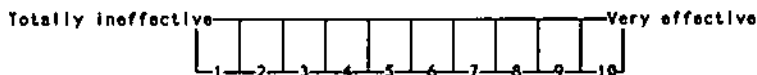
Very difficult	
----------------	--

8.6 Please rate your costing method's effectiveness in measuring revenue centers?



We do not have revenue centers.	
---------------------------------	--

8.7 Please rate your costing method's effectiveness in measuring profit centers?



We do not have profit centers.	
--------------------------------	--

9. Short run product management:

9.1 Do you use marginal costing/contribution information for short run product decisions?

Not very often	
----------------	--

Used, but only at times	
-------------------------	--

Often used	
------------	--

Almost always used	
--------------------	--

9.2 Does your costing method produce product costs that are...

Trusted by only a few people and not really used for decision making	
--	--

Not widely trusted but generally used due to a lack of alternate information	
--	--

Generally trusted and used by the larger majority for decision making	
---	--

Trusted and widely used	
-------------------------	--

9.3 How effectively are you able, with the use of costing information, to monitor a product's actual costs through the year?

Not at all	
------------	--

Rather ineffectively	
----------------------	--

With some degree of effectiveness	
-----------------------------------	--

Very effectively	
------------------	--

9.4 How often does it happen that changes in: input costs, your product's selling price and product mix sold, leave you with no idea what your company's actual total contribution should have been for a specific period?

Never	
-------	--

Seldom	
--------	--

Often	
-------	--

Always	
--------	--

10. Long run product management:

10.1 To what extent are product costs considered during strategic business decisions?

They are seldom considered since costs need not really be taken into account	
--	--

We consider the costs to be rather inaccurate and use it sometimes as guidelines	
--	--

We consider the costs fairly accurate and therefore as good guidelines	
--	--

We consider the costs accurate and therefore always relevant	
--	--

10.2 When you have to decide on the introduction of a new product or the discontinuance of an old product, do you find your costing method's information...

Very helpful	
--------------	--

Often helpful	
---------------	--

Sometimes helpful	
-------------------	--

Often useless	
---------------	--

10.3 Rate your costing method as an instrument for helping you compare actual product sales growth with planned product sales growth.

Poor instrument	1	2	3	4	5	6	7	8	9	10	Very good instrument
-----------------	---	---	---	---	---	---	---	---	---	----	----------------------

10.4 Please rate your costing method for its overall strategic value to your company.

Of little value	1	2	3	4	5	6	7	8	9	10	Of great value
-----------------	---	---	---	---	---	---	---	---	---	----	----------------

11. Finally:

11.1 What were the two biggest advantages, if any, of implementing your current costing method?

a)

b)

11.2 What were the two biggest disadvantages, if any, of implementing your current costing method?

a)

b)

12. Conclusion:

12.1 You may remain anonymous, by scratching out the company code that appears in the top right hand corner of page 1 of this questionnaire.

12.2 If you include a self-addressed envelope, with stamps for your home country on it, the results of the research will be posted to you during the last quarter of this year.

Thank you very much.

DATUM: _____

Fragebogen

FIRMENNUMMER: _____

Erläuterung:

- i) Bitte beantworten Sie Textfragen nur in dem vorgegebenen Feld.
- ii) Bei Auswahlfragen bitte nur eine Möglichkeit ankreuzen:

Die zutreffende Antwort	☒
-------------------------	-------------------------------------
- iii) Bitte benutzen Sie bei dem Vergleich der Kostenrechnungsverfahren nur Ihre eigene Geschäftserfahrung und nicht Ihre theoretischen Kenntnisse der Kostenrechnung.
- iv) Falls Sie eine Frage in der deutschen Übersetzung nicht verstehen können, bitte benutzen Sie die englische Originalfassung auf der Rückseite.

Rücksendeadresse:

Die Rücksendeadresse dieses Fragebogens ist übereinstimmend mit dem auf dem beiliegendem Rückumschlag:

Mr. A. van der Werwe
Private Bag X32
Springs
South Africa
1560

1. Allgemein:

1.1 Welche Beschreibung kommt Ihrer Industrie am nächsten?

Kapital- u. Arbeitsintensive Fertigungsindustrie	☐
--	--------------------------

Kapitalintensive Fertigungsindustrie	☐
--------------------------------------	--------------------------

Arbeitsintensive Fertigungsindustrie	☐
--------------------------------------	--------------------------

Dienstleistungen	☐
------------------	--------------------------

Wenn Sie Dienstleistungen gewählt haben, bitte beantworten Sie nicht Frage 1.2.

1.2 Welche Fertigungsprozesse führen Sie durch?

Einzelfertigung	☐
-----------------	--------------------------

Kleine bis mittlere Werkstattfertigung	☐
--	--------------------------

Fließbandfertigung	☐
--------------------	--------------------------

Stückfertigung	☐
----------------	--------------------------

Serienfertigung	☐
-----------------	--------------------------

1.3 Wie viele Endprodukte werden hergestellt?

----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

1.4 Welches Kalkulationsverfahren setzen Sie ein?

1.5 Seit wann wird dieses Verfahren eingesetzt?

----------------------	----------------------	----------------------	----------------------

(Jahr)

1.6 Haben Sie eine Schulung für dieses Verfahren erhalten?

Ja ☐Nein ☐

1.7 Wenn Sie die allgemeine Anwendbarkeit Ihres alten Kostenrechnungsverfahrens mit dem neuen vergleichen, welche Aussage trifft am besten zu:

Altes Verfahren war viel besser	☐
---------------------------------	--------------------------

Altes Verfahren war geringfügig besser	☐
--	--------------------------

Neues Verfahren ist eine leichte Verbesserung	☐
---	--------------------------

Neues Verfahren ist wesentlich besser	☐
---------------------------------------	--------------------------

Neues Verfahren ist viel besser, als das alte Verfahren	☐
---	--------------------------

2. Ergebniswirksamkeit:

2.1 Welche Auswirkung auf die Rentabilität Ihres Unternehmens konnten Sie seit der Einführung des neuen Verfahrens feststellen?

Drastisch zugenommen	☐
----------------------	--------------------------

Wesentlich zugenommen	☐
-----------------------	--------------------------

Gering zugenommen	☐
-------------------	--------------------------

Keine Veränderung	☐
-------------------	--------------------------

Zurückgegangen	☐
----------------	--------------------------

Unbekannt : Wegen vieler Faktoren	☐
-----------------------------------	--------------------------

Wenn Sie 'Unbekannt' oder 'Keine Veränderung' gewählt haben, überspringen Sie bitte Frage 2.2.

2.2 Wann nach der Einführung des Kostenrechnungsverfahrens hat eine Änderung stattgefunden?

Sofort	☐
--------	--------------------------

Nach 1 bis 4 Monaten	☐
----------------------	--------------------------

Nach 5 bis 12 Monaten	☐
-----------------------	--------------------------

Nach 1 bis 2 Jahren	☐
---------------------	--------------------------

Länger	☐
--------	--------------------------

2.3 Für die letzten 10 Jahre hat eine Firma schwachen Gewinnzuwachs gezeigt und hatte ein ROI(Return on Investment) unter dem Industriedurchschnitt. Ihre Lage ist auf schlechte interne Leistungs- und unzureichende Kontrolle zurückzuführen. Diese Firma hat sich nun entschieden ihr Kostenrechnungsverfahren einzuführen. Angenommen, dass externe Faktoren keine Rolle spielen, welche Ergebnisse -bezogen auf die Rentabilität des Unternehmens- würden Sie bei der Einführung Ihres Kostenrechnungsverfahrens erwarten?

Unbekannt : Wegen vieler Faktoren	Wird abnehmen	Keine Veränderung	Wird gering zunehmen	Wird stark zunehmen	Wird drastisch zunehmen
-----------------------------------	---------------	-------------------	----------------------	---------------------	-------------------------

2.4 Begründen Sie bitte Ihre Antwort aus Frage 2.3.

3. Fristigkeit:

3.1 Wieviele Kalendertage nach dem Monatsabschluss sind die Kostenstellen- und Produktberichte verfügbar?

Kostenstellen?		(Tage)	Produkte?		(Tage)
----------------	--	--------	-----------	--	--------

3.2 Welche EDV-unterstützten Kostenrechnungsverfahren benutzen Sie?

(Namen der Software)

3.3 Ist die Software Realtime/Online verfügbar? Ja ☐ Nein ☐

Wenn Sie 'Nein' gewählt haben, bitte beantworten Sie nicht 3.4 und 3.5.

3.4 Welcher Prozentsatz Ihrer monatlichen Kosten können nicht online, und müssen "batch" verarbeitet werden?

0%	0% bis 10%	10% bis 25%	25% bis 50%	mehr als 50%
----	------------	-------------	-------------	--------------

3.5 Benutzt Ihr Unternehmen die online-Möglichkeit für Kostenstellen- und Produktberichte und -Kontrolle?

Nein	Nur für Kostenstellen	Nur für Produkte	Für Beide
------	-----------------------	------------------	-----------

3.6 Wie regelmäßig werden kritische Erfolgsfaktoren des Unternehmens gezeigt?

Monatlich	Jede	Woche/n	Jeden	Arbeitstag	Online verfügbar
-----------	------	---------	-------	------------	------------------

4. Kosten Controlling:

4.1 Sie werden von einer Firma angesprochen, die Probleme mit zu hohen Gemeinkosten hat und unwiderlegbare Ausreden der Kosten-Verantwortlichen. Was würden Sie raten?

Eigenes Verfahren höchst empfehlen	Eigenes Verfahren empfehlen	Vielleicht eigenes Verfahren empfehlen	Ein anderes Verfahren empfehlen
------------------------------------	-----------------------------	--	---------------------------------

Wenn Sie Ihr Kostenrechnungsverfahren empfehlen, beantworten Sie Frage 4.2 nicht.

4.2 Welches andere Kostenrechnungsverfahren würden Sie empfehlen?

4.3 Wie oft kommt es vor, dass, wenn sich das Produkt-Mix und/oder Ressourcen-/Rohstoffpreise ändern, Ihr Kostenrechnungsverfahren nicht in der Lage ist, genaue Informationen zur Produktkostenkontrolle zu geben?

☐ Nie ☐ ☐ Selten ☐ ☐ Gelegentlich ☐ ☐ Oefter ☐ ☐ Haeufig ☐

4.4 Wie brauchbar sind Ihre Kostensätze fuer eine 'make or buy'-Entscheidung?

☐ Sehr brauchbar ☐ ☐ Gelegentlich brauchbar ☐ ☐ Selten brauchbar ☐ ☐ Überhaupt nicht brauchbar ☐

4.5 Bitte ordnen Sie Ihr Kostenrechnungsverfahren als Instrument zur Gemeinkosten-Steuerung ein.

Unzureichendes Instrument
1
2
3
4
5
6
7
8
9
10
 Effektives Instrument

5. Berichtserstattung:

5.1 Wie sind die Kostenrechnung und die Finanzbuchhaltung in Ihrem Unternehmen eingegliedert?

☐ Beide in einer Abteilung. ☐ ☐ In getrennten Abteilungen mit einem Vorgesetzten ☐ ☐ In getrennten Abteilungen mit eigenen Vorgesetzten. ☐

5.2 Zu welcher Beschreibung passt die Information Ihres Kostenrechnungsverfahrens am besten?

☐ Viel Detail, welches am besten die betriebliche Kontrolle ermöglicht ☐ ☐ Genuegend Detail, dass einen grossen Anteil betriebliche Kontrolle ermöglicht ☐ ☐ Grobe Informationen, ohne Detail die Leistungsentscheidungen ermöglichen ☐ ☐ Gesamt-Informationen, die monatlich das finanzielle Berichtswesen ermöglichen ☐

5.3 Bitte bewerten Sie die 3 Berichtarten unten (A bis C), mit 1 bis 3 fuer die genannten Zeiträume so, dass Ihre Einstufung die Berichtserstattung Ihres Unternehmens fuer die 3 Zeiträume am besten wiedergibt. Dabei soll die Einstufung '1' als Wichtigste gelten.

	Z E I T R A E U M E :				
	0 bis 6 Monaten	6 Monaten bis 2 Jahren	Mehr als 2 Jahre	Total	
A) Berichtswesen der Finanzbuchhaltung zur Ergebnisdarstellung.....	↓ []	↓ []	↓ []	↓ []	↑ E I N S T U F U N G ↓
B) Kostenberichte fuer Kosten-Controlling.....	[]	[]	[]	[]	
C) Berichte, die strategischen Fortschritt widerspiegeln.	[]	[]	[]	[]	

5.4 Addieren Sie bitte Ihre Einstufungen Je Berichtart (A bis C) horizontal, und tragen die Gesamtsumme in das vorgesehene Gesamtfeld (Total) ein. Inwiefern hilft Ihr Kostenrechnungsverfahren im Management die von Ihnen am niedrigsten bewertete Berichtart? (Sollte mehr als eine die 3 Berichtarten die gleiche niedrigsten Einstufung zeigen, koennen Sie diese Frage auslassen.)

☐ Nicht brauchbar ☐ ☐ Selten brauchbar ☐ ☐ Haeufig brauchbar ☐ ☐ Sehr brauchbar ☐

6. Bedeutung fuer Management-Entscheidungen:

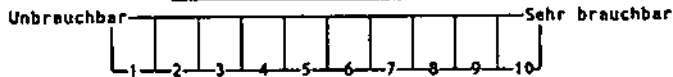
6.1 Welche von den drei gegebenen Beschreibungen ist charakteristisch fuer Ihr Kostenrechnungsverfahren?

Kostensätze basieren auf historischer Information

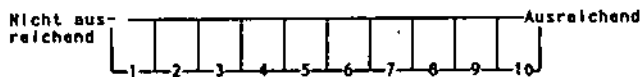
Die momentane Situation wird widerspiegelt

Zukunftsgerichtet mit Plankostensätzen und Deckungsbeiträgen

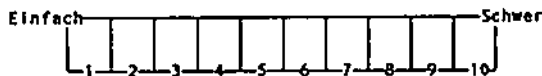
6.2 Bewerten Sie bitte Ihr Kostenrechnungsverfahren als Problemidentifizierungssystem:



6.3 Wie bewerten Sie die Informationen Ihres Kostenrechnungssystems um Entscheidungen fuer Produkte und Kunden zu treffen.



6.4 Wie schwer ist es, die Auswirkungen einer Entscheidung mit Ihrem Kostenrechnungssystem, nachzuvollziehens? Zum Beispiel Entscheidungen wie: Anlagevermögen vergrößern, Verbreiterung Ihrer Vertriebsorganisation oder zusätzliche Personalausbildung.



7. Betriebsplanung und -kontrolle:

7.1 Stufen Sie die nicht wertmaessigen Informationen, wie Leistungen, Kapazitätsauslastung, Standardfertigungsstunden etc. Ihres Kostenrechnungsverfahrens ein...

Mangelhaft

Unzureichend

Ausreichend

Sehr gut

Ausgezeichnet

7.2 Wer ist fuer die Entwicklung der Standardkostensätze in Ihrem Unternehmen zuständig?

Die Kostenstellenleiter

Die Kostenrechnungsabteilung

Die Kostenstellenleitung und Kostenrechnungsabteilung

Die Kostenstellenleitung mit Ihren Vorgesetzten

Die Kostenstellenleitung mit Ihren Vorgesetzten und Kostenrechnungsabteilung

7.3 Sind Ihre Standardkosten brauchbar als Massstab der Leistung.

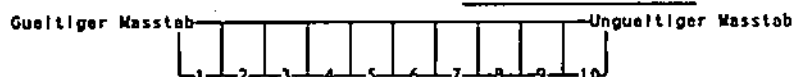
Sehr brauchbar

Brauchbar

Kaum brauchbar

Nicht brauchbar

7.4 Bewerten Sie Ihre monatlichen Kostenberichte als Erfolgsbeurteilung Ihrer Produktionsverantwortlichen.



7.5 In welchem Masse ist in Ihrer Organisation die untere Leitungsebene fuer Mengen/Leistungsabweichungen verantwortlich?

Selten, wegen externer Faktoren

Nur fuer Abweichungen die erklart werden koennen

Meistens, nur fuer unlogische Abweichungen nicht

Verantwortlich fuer alle Abweichungen

8. Unternehmensplanung und -kontrolle:

8.1 In welcher Masse sind Produkt- und Vertriebs-Management verantwortlich fuer Mix- und Preisabweichungen

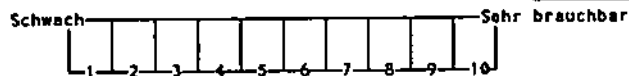
Selten, wegen
externer Faktoren

Nur fuer Abweichungen
die erklart werden
koennen

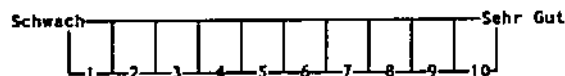
Meistens, nur fuer
unlogische Abwei-
chungen nicht

Verantwortlich
fuer kontrollier-
bare Abweichungen

8.2 Wie gut ist Ihr Kostenrechnungsverfahren bei der Feststellung moeglicherweise vorkommender Probleme?



8.3 Wie gut passt sich Ihr Kostenrechnungsverfahren als Management-Steuerungsinstrument an Aenderungen im wirtschaftlichen Umfeld an? Z.B.: Ein wirtschaftlicher Aufschwung mit einer Umsatzvolumensteigerung ; oder ein Preisverfall mit der Folge eines Absatz-Einbruchs ; oder eine Steigerung der Inflationsrate bewirkt Kosten-erhoehtungen.



8.4 Wie lange dauert es, bis die in 8.3 beschriebene Anpassung wirksam wird?

(Bitte tragen Sie eine Anzahl ein, wenn Sie mit Tagen, Wochen, Monaten antworten)

Sofort

Tage

Wochen

Monate

8.5 Wie schwer ist es, Ihre strategische Planung in den verschiedenen wertmaessigen und nicht wertmaessigen Informationen Ihres Kostenrechnungsverfahrens darzustellen, wenn Sie den Erfolg, mit dem Ihr Unternehmen die Strategien implementiert hat, sichtbar machen wollen?

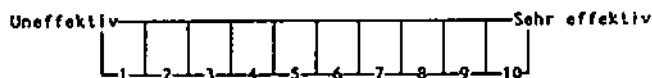
Sehr
einfach

Nicht so
einfach

Ziemlich
schwierig

Sehr
schwierig

8.6 Wie schaezen Sie Ihr Kostenrechnungsverfahren zur Beurteilung von Umsatzbereichen ein?



Wir haben keine
Umsatzbereiche

8.7 Wie schaezen Sie Ihr Kostenrechnungsverfahren zur Beurteilung von Profit-Centern ein?



Wir haben keine
Profit-Center

9. Kurzfristige Produkt-Steuerung:

9.1 Verwenden Sie Deckungsbeitrags-Informationen fuer kurzfristige Produktentscheidungen?

Nicht haeufig

Manchmal

Haeufig

Immer

9.2 Ergibt Ihr Kostenrechnungsverfahren Produktkosten, die...

Nur von wenigen Leu-
ten geglaubt und
nicht benutzt werden

Nicht immer von allen
ernst genommen, aber
allgemein verwendet
werden

Allgemein ernst genom-
men und von der Mehr-
heit fuer Entscheidun-
gen genutzt werden

Ernst genommen
und allgemein
verwendet werden

9.3 Wie effektiv koennen Sie mit Ihren Kosten-Informationen die Istkosten eines Produktes ueber das Jahr darstellen?

☐ Gar nicht

☐ Nicht sehr effektiv

☐ Ziemlich effektiv

☐ Effektiv

9.4 Wie oft kommt es vor, dass Sie bei Aenderungen in Einstandspreisen, Verkaufspreisen und bei Veraenderungen im Verkaufsprogramm keine Idee haben, wie gross der gesamte Deckungsbeitrag Ihres Unternehmens in einer bestimmten Periode sein sollte?

☐ Niemals

☐ Selten

☐ Haeufig

☐ Immer

10. Langfristige Produkt-Steuerung:

10.1 In welchem Masse werden Produktkosten fuer strategische Geschaeftsentscheidungen herangezogen?

☐ Selten. Kosten-Information nicht wichtig

☐ Genauigkeit der Kosteninformation nicht ausreichend, daher nur manchmal als Anhalt

☐ Kosteninformation ziemlich genau und brauchbar

☐ Kosteninformation relevant und voll brauchbar

10.2 Wenn Sie ueber die Neu-Einfuehrung eines Produktes oder die Aufgabe eines alten Produkts zu entscheiden haben, finden Sie dann Ihre Kosten-Informationen...?

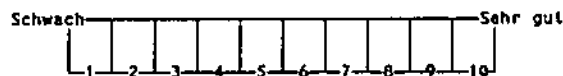
☐ Sehr brauchbar

☐ Oft brauchbar

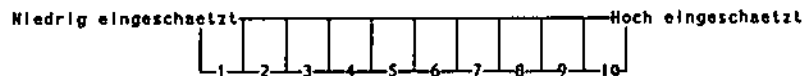
☐ Manchmal brauchbar

☐ Oft unbrauchbar

10.3 Wie schaeetzen Sie Ihr Kostenrechnungsverfahren als Instrument fuer den Vergleich von geplantem Produkt-Wachstum mit dem Ist-Produkt-Wachstum ein?



10.4 Bitte schaeetzen Sie Ihr Kostenrechnungsverfahren von seiner allgemeinen strategischen Bedeutung fuer Ihr Unternehmen ein.



11. Abschluss:

11.1 Was glauben Sie, sind die zwei wichtigsten Vorteile Ihres heutigen Kostenrechnungsverfahrens?

a) _____

b) _____

11.2 Was glauben Sie, sind die zwei wichtigsten Nachteile Ihres heutigen Kostenrechnungsverfahrens?

a)

b)

12. Schliesslich:

12.1 Wenn Sie moechten, koennen Sie die Firmennummer auf Seite 1 streichen und anonym bleiben.

12.2 Sie koennen einen adressierten und frankierten Briefumschlag mitschicken, wenn Sie das Resultat der Forschung haben moechten. Die Forschung wird waehrend des letzten Quartals dieses Jahres fertig sein, und Ihnen dann zugesandt.

Mit freundlichen Gruessen _____

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