The impact of the changing practitioner requirements on management accounting education at South African universities

by

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Declaration

I, the undersigned, declare that the work contained in this dissertation is my own original work, unless otherwise stated, and has not previously, in its entirety or in part, been submitted at any university for a degree.

Liza Jacobs 1 September 2004

Synopsis

One of the most important change drivers to influence the working environment of management accountants during recent years has been the phenomenal development of information technology. This and other change drivers have influenced the workplace to such an extent that questions have arisen as to whether there is a gap between management accounting education and expectations in practice. Various research articles on this topic, as well as the problem of how such a gap, if there is one, should be addressed, prompted this specific research problem. The core of the study comprised a literature study and an investigation by means of a questionnaire to ascertain whether the education of management accountants equipped them adequately for the tasks they are expected to fulfill in practice and, if a gap between education and practice should be identified, what the reasons for this gap could be. Given the reasons, recommendations were made relating to various stakeholders.

The most important recommendations are that professional bodies, educators and practitioners should form a closer alliance so that education and practice can be kept in line with each other; that case studies should be incorporated into the syllabi in order to help bridge the gap between theory and practice, and that certain skills and techniques should get either more or less exposure in the syllabi.

Samevatting

Die werksomgewing van die bestuursrekeningkundige is gedurende die afgelope jare geweldig beinvloed deur verskillende faktore, waarvan die ontwikkelinge op die gebied van inligtingstegnologie die belangrikste is. Dit het aanleiding gegee tot die vraag of bestuursrekeningkunde opleiding nog voldoen aan die verwagtinge wat in die praktyk bestaan. Verskillende navorsingartikels om te bepaal of daar tekortkominge is of nie, en indien daar tekortkominge is, hoe dit aangespreek kan word, het aanleiding gegee tot die spesifieke studie. ‘n Literatuurstudie en ‘n ondersoek deur middel van ‘n vraelys om vas te stel of daar tekortkominge in die mondering van bestuursrekeningkundiges is as gevolg van tekortkominge in die opleidingstelsel, en indien wel, wat die redes vir die tekortkominge is, het die kern van die studie uitgemaak. Na aanleiding van die redes uitgewys deur die studie is aanbevelings gemaak ten opsigte van die belangrikste rolspelers in die verband.

Die belangrikste aanbeveling is dat ‘n goeie samewerkingsooreenkoms tussen die professionele liggame, opvoeders en die praktyk bewerkstellig word om te verseker dat opleiding en praktyk in noue voeling met mekaar bly; dat gevallestudies gedurende die opleiding baie aandag kry om die gaping tussen praktyk en opleiding te oorbrug en dat sekere spesifieke vaardighede en tegnieke meer of minder blootstelling in die leerplanne moet kry.

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Chapter 1

Statement of problem

1.1 Background

To maintain relevancy, retain its position within the profession, and add value to students and business, management accounting education should be in line with practices and expectations in industry (Russell and Kulesza, 2000: 1-12; Carnell, 1999: 46-47). However, the global market-place is changing. Businesses rely more and more on changing technology. At the same time, those companies, services and industries that fuel economic growth are likewise evolving. In this changing market-place, traditional management accountants are a dying breed (Gabbin, 2002: 37-39). Yet many management accounting educators have failed to restructure management accounting curricula to equip graduates with the tools and expertise they need in today's business world (Gabbin, 2002, Parker; 2002: 32-33).

The reason for investigating this topic is that the South African business environment is changing very rapidly and some of the management accounting techniques that had their origin in the customised behaviour of earlier days are no longer applicable in practice. This has caused an expectations gap between what industry wants and what management accounting education offers (Bromwich and Bhimani, 1992; Burns, 2001; Pierce and O'Dea, 2003: 257-290). New quantitive methods for solving accounting problems in the changing market-place have been developed, but the behavioural sciences have suggested that the impact of accounting goes well beyond

the systems and reports which are the most visible product of the accountant's work (Belkaoui, 1980; Ashton, Hopper and Scapens, 1995:21; Emmanuel, Otley and Merchant, 1992). The student in management accounting should be aware not only of the new multidisciplinary scope of the field but also of the conceptual foundations which justify this extended scope (Belkaoui, 1980; Howieson, 2003: 69-103). The role of management accountants in practice are also changing from that of a cost accountant, with an internal business approach, to a broader role which requires different skills and tools to cope with the more open and international environment (Burns and Yazdifar, 2001: 33; Parker, 2002; Howieson, 2003). The emerging and more open South African business environment can possibly create a niche in the market for management accountants to add value (Bromwich and Bhimani, 1992). Therefore, it is not only appropriate but necessary that we understand the sources of today's practices, reflect on the new demands for planning and control information, and develop a strategy to meet these new demands (Emmanuel, Otley and Merchant, 1992: 587; Kaplan, 1983: 390-418; Fowler and Hawkes, 2004: 20-24).

Given the new demands in the business environment, questions are being raised worldwide about the relevance of management accounting and whether the new advanced techniques engendered by advanced technology will be able to restore the lost relevance of the discipline (Bromwich and Bhimani, 1992; Emmanuel, Otley and Merchant, 1992: 607; Ashton, Hopper and Scapens, 1995; Boyce, 2004: 565-586).

In this study the aim is to find out whether management accounting education in South Africa is in line with the expectations of the managers in practice and how to address the expectations gap between education and practice, if applicable

(Howieson, 2003). The management accounting topics and techniques addressed at South African academic institutions are largely determined by the topics and issues addressed in the syllabus of the South African Institute for Chartered Accountants (SAICA) and in the syllabus of the Chartered Institute for Management Accountants (CIMA) in London. This is because all the major universities (Bloemfontein, Cape Town, Natal, Port Elizabeth, Pretoria, Stellenbosch, Unisa, Western Cape, Rand Afrikaans University and Wits) are affiliated to one or both of these bodies, which gives the postgraduates of the various affiliated universities the opportunity to sit for the different external board examinations. On passing these external board examinations and after completing a period of practical work in various applicable areas, the student gets professional status, which gives him/her a certain distinction in the accounting and management accounting environment. An expectations gap can therefore easily develop between management accounting education and management in practice, because of the close relationship between the affiliated academic institutions and the professional bodies (SAICA and CIMA), and not necessarily between the academic institutions and the business environment (Boyce, 2004).

There are various reasons for the changes and varying expectations in business practices in the emerging environment (Bromwich and Bhimani, 1992; Emmanuel, Otley and Merchant, 1992; Ashton, Hopper and Scapens, 1995; Coates and Longden, 1989: 47-51; Innes and Mitchell, 1989; Burns and Yazdifar, 2001; Parker, 2001: 421-453), namely:

1. Technology has introduced sophisticated information systems into companies and has given rise to better management information systems at relatively low costs. New accounting software and electronic business (e-commerce) are widely used and are influencing decision-making and management accounting information in a fundamental way.

2. The economy of South Africa has become more open, which means that competition is international and more fierce and companies must be able to make the correct decisions in a relatively short time period to remain competitive. This has a huge impact on the content and the availability of management reports.

3. Due to greater investment in capital assets, which is a direct consequence of improved quality in business processes, overheads have tended to become more fixed and indirect. The bigger pools of indirect and fixed costs make the allocation of these costs to various products more complex. Traditional ways of allocating overhead costs, adopted when the pool was smaller, are no longer applicable and can lead to incorrect investment and pricing decisions.

4. There has been a shift from purely financial performance measurements to a more balanced way of measuring performance, which is called the “Balanced Scorecard”. This implies that those non-financial factors, such as client satisfaction, innovation, employee

satisfaction and ecological issues have become more important in evaluating the performance of businesses, departments and managers.

5. The focus of management accounting has always been almost entirely on internal activities and relatively little attention was given to the external environment in which the business operated. This phenomenon is changing in accordance with the above-mentioned shift described in subsection four.

Traditional management accounting techniques and tools which are important in assisting managers to implement the changes and expectations in business practices, described in points one to five, could possibly include the following (Burns and Yazdifar, 2001; Russel and Kulesza, 2000; Sharma, 2000: 1-14):

* Activity-based costing (ABC)
* Rolling forecasts
* Employee-based measures
* Benchmarking
* Strategic management accounting
* Value-added accounting
* Variance analysis
* Total quality management

1.2 Statement of the research problem and sub-problems

The tools, techniques and skills practitioners regard as important may not be the ones emphasised by management accounting education. This study aims to explore any discrepancies that may exist between education and practice, and may make recommendations for changes to management accounting education.

Sub-problem 1: Identifying tools and techniques important to practitioners

Academics focus on the theory of management accounting which are set in the syllabi and do not necessarily know what the most important management accounting tools and techniques required by practitioners are. These tools and techniques required in practice have changed rapidly over the last decade, yet the management accounting syllabi at the academic institutions have not necessarily taken these changes into account, because of the close link between the academic institutions and SAICA and CIMA.

Sub-problem 2: Identifying management accounting skills required by practitioners

Academics are normally focused on theoretical and academic issues of various disciplines and are not always in touch with what practitioners regard as the most important management accounting skills required from a management accountant. Because the tools and techniques are changing, the skills required of a management

accountant are also changing. A typical example is the area of Information Technology, which used to be an area for information technology specialists only and has now become an area which management accountants should have good knowledge of, otherwise they will not be able to understand the working of the accounting systems in a company.

Sub-problem 3: Comparing the findings above with the CIMA and CA syllabi

Comparing the findings of the research outlined as sub-problems 1 and 2 above with the CIMA and CA syllabi, the study will try and find the differences between what business practice expects from management accountants on the one hand, and what the academic institutions teach the students on the other hand. The differences found between practice and teaching will help the researcher to make recommendations in terms of SAICA and CIMA's syllabi and also to make recommendations as to how the teaching at the academic institutions could be changed to add more value to the education of management accountants.

Sub-problem 4: Finding reasons for the gap (if any)

Many researchers, like Scapens (1991) and Fowler and Hawkes (2004), have indicated that there is a significant gap between the theory of management accounting, as portrayed in textbooks, and management accounting practice. Possible reasons for

this gap, if the questionnaire indicates a gap, will be investigated so that relevant recommendations can be made. The reasons could be any of the following:

* Too many theoretical models of what ought to be, which means that textbook techniques are rejected in practice.
* Very simple techniques are often used in practice and the reasons could be:
  - availability of information in practice,
  - swiftness with which decisions have to be made, leaving no time to work with complicated models,
  - lack of theoretical understanding by practitioners and
  - failure of theory to address the reality faced by practitioners.

Sub-problem 5: Making recommendations for changes to education

Should the study indicate that there is a gap, and reveals the reason or reasons for this, it will be important to determine the possible impact on management accounting education. A description of this impact will take the form of recommendations to improve the applicability of management accounting education in South Africa. These recommendations will also support Bromwich and Bhimani (1992) that management accounting is in an evolution and not in a revolution and that there are a number of opportunities for the management accounting function to play its proper and principal role in financial management in the twenty-first century (Howieson, 2003).

1.3 Research strategy

1.3.1 Collection of data to address the sub-problems

Data will be collected by sending a questionnaire requesting respondents inter alia to rate a list of tools, techniques and skills according to importance on a 4-point scale. The questionnaire will be sent to financial directors of large (in terms of market capitalisation) companies listed on the Johannesburg Stock Exchange. The development of the questionnaire will be discussed in chapter 4 and the evaluation of the data in chapter 5.

1.3.2 Solving the problems

Evaluating the data which will have been gathered by means of the questionnaires, will afford an indication of the relative importance of the different tools, techniques and skills applicable in the field of Management Accounting. The questions will be designed in such a way that the data can be analysed to produce the required information to solve sub-problems 1 and 2 outlined in section 1.2. There will also be room for the correspondents to give their opinion on other issues which they want the researcher to address or keep in mind. These responses to questions 10 to 15, relating to sub-problems 1 and 2, are analysed in sections 5.8, 5.9 and 5.10 and the sub-problems are solved in sections 6.1 and 6.2.

Comparison between the most important tools, techniques and skills required in practice and the tools, techniques and skills taught at academic institutions (sub-problem 3) will give an indication of the possible gap that exists between relevant techniques and tools required in practice and those taught. The tools, techniques and skills which are taught have a direct link with the syllabi of SAICA and CIMA, which will provide the opportunity to investigate whether the syllabi are in line with the requirements in practice. This comparison, to solve sub-problem 3, will be addressed in section 6.3.

Sub-problem 4, finding reasons for the gap, if any, will be solved in section 6.4 and the solving of sub-problem 5, making recommendations, will be discussed in section 6.5. A conclusion to the research problem, taking into account the findings given in the above-mentioned sections and subsections and the researcher's personal view, will be reached in section 6.6.

1.3.3 Limitations that affected the study

Three limitations affected the study, the first one being the scope of the questionnaire. It would be preferable to ask more questions which would enable the researcher to do detailed analyses on the various answers given. This is impossible, though, because respondents do not have the time, nor the interest, to answer lots of questions. A balance between enough information for solving the research problem and the time which the respondents are able to spend on answering the questionnaire is a crucial factor.

A second limitation lay in achieving a satisfactory response rate. The more questionnaires sent out, the lower the response rate, because follow-up work to ensure a high response rate is difficult. Given a low response rate, detailed statistical tests would have to be carried out to eliminate non-response bias. For the scope of this study, therefore, a relatively small sample size was used and follow-up questionnaires were sent out to ensure a satisfactory response rate (see section 4.5). A relatively high response rate of 70% was thus achieved.

Thirdly, not much research has been done in South Africa on the relevance of Management Accounting education at universities. This implies that the discussions and recommendations made in this study were limited to the outcome of the questionnaires and a few relevant South African articles. These discussions and recommendations, however, were supported by international research done on this topic and it could be assumed to be relevant in a South African context because of the globalisation of South African industries.

1.4 The importance of the problem statement

Accounting educators have been warned many times that management accounting education must change to maintain relevancy, retain its position within the profession, and add value to students and business (Russell and Kulesza, 2000; Carnell, 1999; Boyce, 2004). The time to change just for the sake of improving certain areas is past. In fact, we must transform our educational programmes merely to survive. Failure to embrace market-based changes will continue to decrease the relevance of management accounting education (Carnell, 1999; Gabbin, 2002; Howieson, 2003).

Accounting education is plagued with many serious problems that, if not resolutely addressed and resolved, will lead to its demise. One example (Russell and Kulesza, 2000) is that accounting and business leaders, as well as practising accountants and management accountants, state that management accounting education, as currently structured, is outdated, broken, and must be modified significantly to meet ever-changing expectations.

If action is not taken quickly, accounting education will see decreasing budgets and, possibly, elimination of accounting programmes with majors. In fact, accounting education may become a service function of business schools (Russell and Kulesza, 2000; Gabbin, 2002).

Accounting education continues to be delivered the way it has been for the past 20 to 30 years. Yet accounting practice has changed dramatically to meet the new market-based demands brought on by changes in business, that is, e-commerce, global competition and interaction, and "Web-speed" decision-making (Parker, 2001). Business changes and technology have outpaced accounting education, which has led to an increasing gap between what business needs from accounting education and what it receives. This gap must be closed (Russell and Kulesza, 2000).

Chapter 2

Management accounting as a discipline

Before the study can assess how the education of management accountants compare with the expectations in practice, the basic foundational concepts behind management accounting must be clearly understood. This chapter will, therefore, take an in-depth look at the way management accounting was designed to function and the way in which it is developing and changing at present.

2.1 Conceptual foundations

Management Accounting is designed, firstly, to supply information to internal decision-makers of a given organisation; secondly, to facilitate their decision-making; thirdly, to motivate their actions and behaviour in a desirable direction and, finally, to promote the efficiency of the organisation (Belkaoui, 1980; Allen, 2002: 12).

Management Accounting is accounting-based and individual-, organisation- and decision-centered (Belkaoui, 1980; Drury, 1988: 831-857). Thus management requires an accounting, behavioural, organisational, and decisional grounding. An understanding of each of these foundations will allow the management accountant to design and understand a management accounting system responsive to the diverse needs and demands emanating from within and from without the organisation. (Belkaoui, 1980; Parker, 2001). Such an understanding will also allow students in management accounting to get the bigger picture of the subject and of the required

skills to be successful (Howieson, 2003). It is important that all four groundings should be included in the applicable syllabi so that none will be lost to a rule-based, memorisation or test-for-content teaching approach which is inefficient (Russel and Kulesza, 2000).

Belkaoui (1980) gives the following overviews on each of the conceptual foundations of management accounting:

2.1.1 Accounting foundations

The accounting characteristic or problem of management accounting is one of determining the ways in which accounting information may be accumulated, classified, analysed, and adapted to specific problems, decision-making, and day-to-day conduct of an organisation. These management accounting techniques are derived from and supported by a management accounting conceptual framework.

2.1.2 Organisational foundations

The organisational characteristic or problem of management accounting is one of tailoring the internal reporting systems to the organisational structure and to the significant elements which approximate the patterning and order inherent in organisations (Roslender, 1996: 545; Parker, 2001). This objective requires a good understanding of the elements of organisational structure and the theories of organisation (Bromwich and Bhimani, 1994).

2.1.3 Behavioural foundations

The behavioural characteristic or problem of management accounting is one of adapting the internal reporting system to the different factors that shape the "cognitive make-up" of individuals within the organisation and affect their performance (Boer, 2000: 313-335). These factors include the perception by the individual of what should be the objective function or goals of the firm, the various elements likely to motivate the individual to performance, and the decision-making model most relevant to particular contexts and most preferred by the individual (Drury, 2000). The individual may adopt as a decision-making model the rational view, the process-oriented view, the organisational procedures view, the political view, or the individual differences view. Each of these behavioural concepts identifies factors and situations that influence individual behaviour, and indicate avenues for management accounting to adapt its services.

2.1.4 Decisional foundations

The decisional characteristic or problem of management accounting is one of determining the types of decision and decision systems, plus the type of information and information system needs. In the literature on management accounting, several frameworks have been proposed for viewing these decisional foundations, e.g. the Anthony framework etc. Each of these frameworks provides the basis for making resource allocation decisions about information systems in general and management accounting in particular.

Given that the decisional characteristic is one of determining the types of decision, plus the type of information needs, it is important to note that the difference between cost accounting and management accounting has not been explicitly clarified. It is usually believed that it is one of point emphasis. Cost accounting deals mainly with cost accumulation, inventory valuation, and product costing. It emphasises cost aspects. The objective function is implicitly perceived to be cost minimisation. Similarly, management accounting deals with the efficient allocation of resources. The objective function may be perceived to be profit maximisation. It is also believed that the cost accountant and the management accountant are performing different activities: cost control is in the domain of the cost accountant, while cost reduction is in the domain of the management accountant (Siegel and Sorenson, 1999: 1-19).

2.2 The changing role of the management accountant

Management accountants must be aware of the influence of new technologies and changes in production management on the usefulness of various accounting techniques. Most of the issues are not new, but their significance changes under different sets of conditions (Ashton, Hopper and Scapens, 1995; Howieson, 2003; Parker, 2001).

Until very recently only one well-understood philosophy of manufacturing existed. A relatively narrow set of techniques was sufficient to meet management's needs. Many of the underlying assumptions about inventories, quality and labour management were simply taken for granted and not considered issues important enough to be discussed in accounting textbooks, since the underlying philosophy of traditional manufacturing

was relatively consistent from plant to plant. But now these assumptions are changing, some for the first time in almost one hundred years. Consequently, the role of the management accountant is also changing and becoming more management-orientated (Ashton, Hopper and Scapens, 1995; Pierce and O'Dea, 2003; Howieson, 2003; Parker, 2001).

For example, management accountants must:

* carefully analyse their environments,
* be aware of production technology changes influencing the current costing system,
* work with other professionals, like the production engineers, to ensure the implementation of appropriate changes to the cost systems to maintain its relevance as environmental uncertainties and management information needs evolve, and
* develop the facility to deal with soft measures while still maintaining their objectivity and credibility.

According to Litter and Sweeting (1989), a group of companies surveyed indicated the prevalence of a management philosophy which espouses flexibility, a lesser degree of confidence in the value of quantitive information as an input for decision-making activities and greater emphasis on informal processes. This has important consequences for the role of the management accountant as an *interpreter* of these often speculative and qualitative data, drawing out what it could mean for the performance of products and the business as a whole, as a *counselor*, in articulating

the rationale for advisable and non-advisable courses and as the *guardian* of the business' financial integrity with external parties.

Surely it is a break away from the familiar normative approach to management control, which describes a feedback process of planning, objective setting, monitoring, feedback and corrective action to ensure that outcomes are in accordance with plans (Parker, 2001).

These results, according to Litter and Sweeting (1989), have important implications for the role of management accounting because they suggest that unless management accounting mechanisms are devised for enhancing the efficiency of the managing functions of organisations in an environment which is fast-changing and turbulent, the significance and value of management accounting as a management function is likely to diminish (Bromwich and Bhimani, 1992; Emmanuel, Otley and Merchant, 1992; Ashton, Hopper and Scapens, 1995; Gabbin, 2002).

Moreover, it appears that novel forms of management accounting practices need to focus on the uniqueness of the firm's specific organisational processes. Further, account needs to be taken of the changing nature of corporate life from a socio-technical perspective rather than relying on a needs-based financial framework without which it is assumed that the organisation cannot properly function. This assumption is often implicit in the application of conventional management accounting tools (Drury, 1996).

There has been a reduction in the need for accountants to spend a large proportion of their time preparing accounts due to the development of computerised accounting systems. The accountant's role in some companies has changed from one of recording and preparing accounts to one close to that of an all round business manager (Burns and Yazdifar, 2001; Parker, 2001).

According to May (2001: 37) the modern finance function must be able to:

* deliver analytical, strategic and value-added services,
* act as a consultative business partner and as an adviser,
* become a participant and leader in the decision-making process and
* foster company-wide continual performance enhancement.

Finance professionals in the new order will typically fall into three categories: business consultants, business analysts and technical specialists. Where possible, existing staff will be redeployed according to their strengths.

Business consultants are usually a core of shared-service corporate staff who specialise in specific processes, models or initiatives, providing advice and support to the business units. Business analysts operate from within the business units as the financial specialists on the management team. In addition to traditional roles of scorekeeping and budgetary control, analysts are at the sharp end of making the new decision-support and value-adding roles work. Their job involves as much non-financial as financial information (Howieson, 2003).

Technical specialists are experts in finance and accounting, who use technology to provide transaction processing, financing and stewardship. They are often located centrally and there are far fewer of them than in the traditional finance function.

These new, dynamic finance professionals will be leaders of multi-disciplined teams engaged in strategic and tactical planning, taking equal responsibility for the future success of the company and should have an in-depth understanding of how the whole business operates (May, 2001).

With increased automation the role of the accountant will change from a processor of data to that of an interpreter of information. It is essential that the management accountant actually gets involved in the design and implementation of the new technology. A passive attitude on these issues will create opportunities for other groups who will know how to exploit the potential. Participation in, and understanding of the use, design and implementation of computer technology must be a highly prioritised area if the management accountant wishes to maintain his/her position in the future (Bromwich and Bhimani, 1992; Ashton Hopper and Scapens, 1995; Gabbin, 2002).

Due to increased automation, the emphasis is shifting from book-keeping to flexible reporting and strategic planning. The management accountant's role is evolving strongly into one of systems audit and "oiling the wheels" of the system to keep it running. The need is for accountants who understand the total systems of the company and who can act in a co-ordinating role. They must ensure that the

developments undertaken by other departments cater for accounting requirements (Sharma, 2000; Siegel and Sorenson, 1999).

The accountant must be ready to take on the role as "change agent," becoming proactive rather than reactive. The development of the system must anticipate requirements rather than react to events (Burns, 2000).

Cost accounting needs to become proactive by highlighting problems and bringing them to the attention of management rather than reacting to the requests for information by management. With the widening span of control experienced by some companies, the management accountant needs to be the "watchdog" of the first line managers, providing better control information and highlighting where action is necessary.

The dialogue between accountants and line management has improved with the introduction of information technology. Management accountants are able to respond to requests from management in a positive way and to present the results of their analysis in much more understandable format. This has enabled the management accountant to become much more part of the management team (Burns, Scapens and Turley, 1998: 9-10).

In addition, the developments in information technology have allowed operational accounting to become dispersed throughout the company (Boer, 2000: 329). As a result there is a greater interplay between accounting and other data in operational management. Management accountants should recognise the challenges posed by the

springing up of "pseudo"- accountants and the decentralisation of accounting knowledge and expertise. Managers may become less reliant on financial information systems as they increasingly make use of operational data, leaving the financial information systems to provide the necessary external reports when they are needed (Burns, Scapens and Turley, 1998). This decentralisation of knowledge means that management accountants should increase their commercial awareness (Mayer, 2000: 335-347).

Apart from its role in the decentralisation of accounting knowledge and expertise, information technology has helped change the role of the management accountant to a more proactive and strategic one (Siegel and Sorenson, 1999). It can be argued that too often budgets represent the past carried forward, and the emphasis on monitoring performance by the feedback of actual against budget leads to an overconcern with internal rather than external matters and past rather than future events. However, accounting practice should be integrated with strategy formulation and marketing. Accounting systems tend to be directed at the operational level, whereas studies of strategy suggest that key success factors lie in strategic choices and monitoring business performance relative to competitors. Strategic management accounting systems need to look at the organisation holistically and to examine its competitive position (Roslender, 1996; Sharma, 2000). Such systems should look outwards and forwards, examine the relative market share of existing products, their position in the product life cycle, marketing prospects and the portfolio of products produced, and incorporate costing based on experience curves. The analysis should not be based solely on the individual organisation but on its competitive advantages relative to competitors (Roslender, 1996). In addition, it should analyse competitors' past and

future costs and their market performance and strategic options (Drury, 1996; Howieson, 2003).

If, over time, emerging routines become widely accepted in the organisation such that they become the unquestionable form of management control, then they can be said to be institutionalised. As such, they are more than a set of routine procedures required by senior management and implemented by accountants; they are an inherent feature of the management process, representing the expected form of behaviour and defining relations between the various groups within the organisation. As such they will influence organisational activity and are likely to become quite resistant to challenge (Burns and Scapens, 2000: 12-13; Howieson, 2003).

Such a process of management accounting change can be characterised as evolutionary (Nelson, 1995: 561) in the sense that it involves:

1. change over time, and comprises
2. both random elements (e.g. working out of mutually acceptable methods of working) and systematic mechanisms (e.g. the selection of the new "efficient" system); and
3. inertial forces, i.e. forces hostile to change through lack of energy, which provide continuity over time.

The term *revolutionary* simply recognises that processes of change are shaped by a combination of random, systematic and inertial forces, which together create the context out of which new practices emerge. It is in this sense that an evolutionary

perspective is required to understand an organisation's management accounting practices, and in particular the process of management accounting change. In other words, the process of management accounting change is much more complex than the rational selection of so-called "optimal procedures and techniques", and it is inherently path-dependent (Burns and Scapens, 2000).

Specific changes in management accounting could be quite revolutionary, involving radical change to existing routines and fundamentally challenging the prevailing institutions. Nevertheless, the change process will be influenced to some extent, by the existing routines and institutions, and as such the process is still path-dependent. Such revolutionary change is likely to be possible only as a result of major external change, e.g. take-over, economic recessions, market collapse, and so on. However, the response to such major events is likely to be determined largely by the current context of the organisation; including its routines and institutions – going down one road inevitably closes off the possibility of certain others (North, 1990; Parker, 2002).

Thus, managing change in general, and management accounting change in particular, require a thorough understanding of the current context of the organisation, especially its routines and institutions (Howieson, 2003). This involves much more than knowledge of the formal systems; it requires an understanding of the habits of organisational members and the underpinning assumptions which are taken for granted in day-to-day activity. It requires a questioning of the "unquestionable" and as such can be difficult for insiders – although outsiders will have to acquire detailed knowledge of the complex processes which are involved (Burns and Scapens, 2000).

Different management accounting changes are discussed in sections 2.2.1 to 2.2.3 below.

2.2.1 Formal and informal management accounting change

Formal change occurs by conscious design, usually through the introduction of new rules and/or through the actions of a powerful individual or group (Rutherford, 1994). Informal change, however, occurs at a more tacit level; for example, as new routines adapt over time to changing operating conditions. It would probably be reasonable to expect that formal management accounting change will be more straightforward than attempting to change the ways of thinking which are embedded in existing management accounting routines. However, the successful implementation of a formal change may require new ways of thinking (Burns and Scapens, 2000). Formal change may be problematic in the absence of an accompanying change in ways of thinking – the latter being the essence of informal change. If the processes of informal change lag behind the formal change processes, tensions may be introduced in the form of anxiety and resistance, possibly leading to the failure of its implementation.

The distinction between formal and informal change is similar to the distinction between intentional and unintentional management accounting change. The term unintentional was used to imply that change is not specifically directed, although it may evolve out of the intended actions of the individuals who are enacting and reproducing organisational routines. The intentional/unintentional distinction focuses attention on:

1. change which flows from the introduction of new rules; and
2. change which evolves at a more tacit, subconscious level.

The former is normally easier to observe, although the latter is equally important for understanding management accounting change. However, most processes of management accounting change are likely to incorporate a mixture of both intended and unintended elements (Burns and Scapens, 2000).

It seems reasonable to expect that top-down (e.g. imposed) management accounting change will have its initial and most direct impact on the formal rules (e.g. the technical aspects) of management accounting systems, but only an indirect impact on the informal processes which underpin management accounting routines. On the other hand, bottom-up change (initiated by organisational members who use management accounting from one day to the next) is more likely to have an impact at a tacit level and to shape informal as well as formal management accounting processes (Burns and Scapens, 2000).

2.2.2 Revolutionary and evolutionary management accounting change

Also important for any study of management accounting change is the dichotomy between revolutionary and evolutionary change (Nelson and Winter, 1982). While revolutionary and evolutionary change involves a fundamental disruption to existing routines and institutions, evolutionary change is incremental, with only minor disruption to existing routines and institutions. Again there is some overlap with the

distinction between intentional and unintentional change, but there are also important differences. For example, intentional changes in management accounting systems may remain firmly grounded in existing routines and institutions, and as such would not be revolutionary. Also, unintentional change in informal processes could, in practice at least, be revolutionary, in that they could challenge existing institutions (Birkett and Poullaos, 2001: 1-205).

2.2.3 Regressive and progressive management accounting change

Tool's (1993) dichotomy of regressive and progressive institutional change offers further insight into processes of management accounting change (Bush, 1987). He began by distinguishing between what he called "ceremonial" behaviour and "instrumental" behaviour. Ceremonial behaviour emerges from a value system which discriminates between human beings and preserves existing power structures, whereas instrumental behaviour emerges from a value system which applies the best available knowledge and technology to problems and seeks to enhance relationships. He then adopted the term regressive change to describe behaviour which reinforces ceremonial dominance, thereby restricting institutional change; and adopted the term progressive change to describe the displacement of ceremonial behaviour by instrumental behaviour. Such progressive change can take place even where there is ceremonial dominance, because new technology can incite questioning of previously dominant, ceremonial values.

2.3 Management accounting and the rest of the organisation

One strain of argument, which arises in most of the observations cited in the research about the relationship of the management accountants to the rest of the organisation, is that their expertise cannot be applied independently of knowledge about the operational activities specific to their organisation. A link must exist between the particular processes considered to be required for organisational success and the technicalities of the management accounting task (Parker, 2002; Burns, 2000).

Management accounting, on the basis of the results of the research described in section 2.2, needs to become embedded within operational activities to enhance its effectiveness. The value of communicating management accounting information through informal channels must not be underestimated either (Howieson, 2003). Moreover, most of the empirical studies reviewed reveal the growing importance of qualitative information, which arises because of the changing product environment (Francis and Minchington, 1999: 301-319). Greater stress is being put on quality, delivery performance, customer satisfaction etc., and the development of such factors appears to be desirable. These empirical studies point to the need for management accounting to cultivate an understanding of marketing problems and processes, as well as to become increasingly integrated with the strategic components of organisational activities (Parker, 2001; Boer, 2000).

2.4 Changing accounting practices - surveys in different countries

2.4.1 United States of America

Bromwich and Bhimani (1992) has explained the argument made by certain prominent management accounting researchers in the US that the poor state of management accounting practice today stems from distortions imposed by external financial requirements. They suggest that demands made by management decision-makers may be partially satisfied by adopting management accounting techniques which encompass new methods of recording costs, appraising investments and recognising longer term strategic factors to facilitate the more effective pursuit of organisational goals.

The empirical findings on trends in US manufacturing firms suggest that some of the advocated techniques for improving cost management in organisations are moving, broadly speaking, in the right direction (Chen, Romocki and Zuckerman, 1997: 28-30). There are, however, many challenges which are seen as continuing to face the management accounting profession (Boer, 2000). There is a need to look at wider issues of evaluating enterprise performance, analysing investments and dealing with ingrained business management practices, rather than simply advocating innovative modes of tackling alleged management accounting failures judged in isolation from other organisational processes and which may not be crucial to many firms. There is also the problem that the publicity attracted by the suggested innovations may lead to ignoring other problems with fixed costs of equal or greater importance. Certain costs are often fixed once the decision is made to incur them. There is, therefore, a need to

change overhead accounting methods so that such costs are traced back to the original decision-maker (Holzer and Norreklit, 1991).

2.4.2 United Kingdom

The reactions to fast changing products, markets and manufacturing environments have the following implications for management accounting practitioners in the United Kingdom (Bromwich and Bhimani, 1992; Birkett and Poullaos, 2001):

* Management accountants need to alter what some managers perceive as their often self-assumed role as watchdogs rather than as suppliers of information and as parties to decision-making, which is the role that managers and many management accountants expect management accountants to fulfil.

* The overwhelming influence of financial control and the emphasis on short-term monetary returns by United Kingdom managers are seen as inhibiting the implementation of advanced manufacturing technology.

* Management accountants need to adopt a more outward-looking and strategic perspective both for investment justifications and for broader decision-making, following those sectors of British manufacturing industry where some firms have already adopted such a stance.

* Responsibility accounting systems, information flows and organisational control measures may be affected by the new production methods. Management accountants can hinder or can enhance new attitudes to manufacture.

* Non-financial accounting information has been found to have become increasingly important in many different manufacturing environments, even where the use of advanced manufacturing technology varies substantially in various industrialised countries. Qualitative and non-financial quantitive information will have a high and growing level of significance in enterprise management, and its incorporation into management accounting systems will provide important challenges for management accountants.

* Apparently, both strategic investment appraisal techniques and strategic management accounting are becoming increasingly important as a means of processing relevant management accounting information, and need to become more important. Enterprise accounting systems would need to be geared more to the market where demand has to be retained and competition overcome.

* The cost of achieving the value added to the firm's products relative to competitors needs to be determined and continually monitored.

* There is urgent need for management accountants to experiment, to seek out new ways of using their existing expertise, and to enlarge their competence by seeing management accounting as a much broader function.

* It is recommended that techniques such as activity-based costing (ABC) and target pricing, as used by some Japanese firms, where price is determined by the price required to win a desired market share rather than to cover full cost, should be used and further developed.

Indeed, one study of five leading American manufacturers responding to global competition by implementing various components of advanced manufacturing technology (AMT) concluded that:

"The management accounting profession is following, not leading, the process of change, and is often inhibiting rather than instigating productive manufacturing change (McNair, 1988:xviii)."

A comparison with German theory and practice in engineering suggests that British management accounting overemphasises the single-minded pursuit of profit. This may have contributed to Britain's relative industrial decline. German management accounting was found to be more modest in its goals, more restricted in its use and more accurate in content (Strange, 1991).

2.4.3 Japan

Much literature has appeared in this vein attempting to describe the complexity and richness of Japanese management attributes, but with differing degrees of success. There is, however, a consensus that the aspects which are central to Japanese style management in their large companies include: enterprise unions, seniority based payment/promotion systems, lifetime employment, consensus-oriented "bottom-up" decision-making, lifetime in-company training, recruitment of workers directly from school/university for lifetime employment, and various company incentives and perks, such as low interest loans, company housing and special welfare schemes (Chen, Romocki and Zuckerman, 1997).

In a study by Currie and Seddon (1992) it was found that Japanese firms, unlike their Western counterparts, are uninterested in the "new" management accounting techniques such as ABC. The managers felt that knowledge that some products were more expensive to produce than others was not in itself sufficiently important to determine product strategy decisions. On the contrary, expensive products were likely to be of real strategic importance to the company and their elimination on the basis of simple product costing information could prove disastrous.

Various studies (Chen, Romocki and Zuckerman, 1997; Hiromoto, 1988) have demonstrated that Japanese companies differ from their Western counterparts in the areas of cost management, investment appraisal, market orientation and strategic awareness of AMT. In the area of cost management, Japanese managers perceive target costing as important. They feel it is important to calculate the right price for a

product at the pre-manufacturing stage. Financial planning for the entire product life cycle is therefore carried out prior to manufacturing. Product pricing has to relate to "what the market could bear". Japanese companies show more attention to product costing at the pre-manufacturing stages, with earlier and more sustained attempts at target costing and reduction. They also make positive use of quality control feedback. Cost control is also everyone's job in Japan and not necessarily the job of the accounting department. They also develop the cost of a design and then establish the market price. Prices are fixed according to market tolerance. Thus the Japanese work backwards to the basic cost of the product and then design it to an acceptable quality at the right cost (Hiromoto, 1988).

Investment appraisal is also practised differently by Japanese and Western managers. In recent years, the problems of traditional investment appraisal techniques have been well documented. The fixation on labour costs by perceiving the range of new technologies as labour saving has arguably distorted the real strategic advantages of this form of capital investment. The continuing decline in direct labour costs as a proportion of total manufacturing costs suggests that this predominance indication is less relevant (Kaplan, 1989). It has also eliminated one of the key justifications for introducing AMT.

Hiromoto (1988) has further highlighted the difference between Japanese management and their Western counterparts. Whilst Western managers appear over-concerned with the quantitive advantages of AMT, Japanese managers instead include a wider array of performance indicators when assessing the benefits from production technologies. Some claim to quantify the qualitative benefits of AMT, with particular

attention focused on quality control costs, scrap, rework, warranty, service costs, wastage, space saving and machine performance.

A notable difference between Japanese and Western management accounting is the managerial level of responsibility for investment appraisal. The "technical champion" (referring to individual effort by technical personnel) is not recognised by Japanese managers. On the contrary, Japanese managers are keen to explain that individual performance is assessed along with group performance. In most of the cases expenditure on e.g. AMT is decided at management meetings comprising the president, board-level directors and associated expert teams from the organisation.

The significant reason for the scant attention paid to Japanese management accounting, particularly in the USA and UK, is because the methods and techniques used are "traditional" and do not, in isolation, explain the Japanese "miracle" or Japan's position as a "world-class manufacturer". Indeed, Japanese management accounting has arguably played little part in Japan's post-war pursuit of economic success. In fact, some Japanese managers desire management accounting activities simply as "good housekeeping". Even the focus on cost reduction through the redeployment of direct labour suggests that while traditional accounting may influence rather than simply inform decision-makers (Hiromoto, 1988), manufacturing goals are nevertheless achieved by an all-embracing corporate strategy and not by cost cutting and performance measurement alone. Japanese companies focus upon a wide array of multi-disciplinary financial and non-financial performance indicators and a strong "engineering voice" is present at board level. Explanations for these differences cannot be attributed to one or two simple factors alone but to a wider

socio-economic and cultural explanation which looks at government support for manufacturing, the banking and education systems, human resource practices and Japan's post-war "backwardness" and keen desire to catch up with the West, particularly the United States, Britain and West Germany.

2.4.4 South Africa

Powerful and invasive developments are taking place in the world's business community, and we in South Africa are not excluded from the impact. As was to be expected, the accountancy and management accounting profession has been and will continue to be profoundly affected (Sulcas, 2000: 17-18; Parker, 2002; Howieson, 2003).

According to Sulcas (2000) the major shifts that are taking place are the following:

* Information technology

  "Internal usage of computers, inter-organisational linkages and the Internet are combining to create powerful processing and communication mechanisms, which are rapidly transforming planning, control and operational methods in the majority of medium to large organisations."

* Marketing

  "Major companies are actively pursuing niche marketing, building brand loyalties and undertaking focused market research to retain and build their customer base."

* Environmentalism

"Many initiatives are in progress to protect planet earth from environmental abuse. These range from anti-pollutant laws through to the anti-smoking and -drinking lobby groups."

* "No jobs for life"

"Lifetime job security is a thing of the past. An employee's future depends on the level of contribution he/she is making relative to the demands of management."

* The Receiver of Revenue

"Without doubt there have been major developments regarding the assessment of taxes and revenue collection. In addition, many tax avoidance schemes are now being thoroughly scrutinised."

* Affirmative action

"There are "carrot-and-stick" approaches being followed here, some of which more successful than others. However, a major move is happening that can be expected to escalate in the future."

* Black empowerment

  "The need for providing opportunity and wealth creation is widely acknowledged. Progress is being made via powerful local groups into businesses which traditionally were white owned, controlled and managed. In some instances, especially regarding businesses dealing with government or quasi-government, being a member of a previously disadvantaged group is a prerequisite for being awarded a tender."

* Labour laws

  "Major revisions to the law have placed an increasing burden on organisations relative to managing and remunerating employees."

* Government

  "The emergence of national, regional and metropolitan government has, in many instances, altered the balance of power from the past. In turn, organisations have to learn to cope with the increasing levels of bureaucracy."

In summary, what can be clearly understood from the above is that on a local, national and global basis, organisational management is having to be highly astute in recognising the potential impact of all the above-mentioned factors on established operation norms. In addition, proactive or reactive strategies will have to be formulated and implemented to ensure not only future growth but, in many instances, actual survival of the organisation (Sharma, 2000; Burns, 2000).

Important challenges which logically flow from the above are the following (Sulcas, 2000; Parker, 2002; Howieson, 2003):

* Companies should attract and retain highly competitive staff, which will have an impact on remuneration policies.
* In-house or external educational and personal development programmes will become increasingly important in order to equip staff to manage their professional responsibilities relative to the needs and expectations of the customer base.
* It will be important for firms to profile themselves, from the perspective of their customers, as professionals in the "business of business".
* "Adding value" is becoming a prerequisite for continuous employment.
* The management accounting profession should position itself to supply the national corporations with national expertise as South Africa moves into the global market place.

Management accountants should be aware of these challenges and should also be able to handle these challenges. This brings a huge responsibility to educators as to the way in which they should help the profession not only to survive, but also to add value to organisations (Boer, 2000; Maher, 2000).

2.5 Problems in the management accounting environment

Some of the problems perceived as not yet satisfactorily dealt with in management accounting include (Burns, Scapens and Turley, 1998; Boyce, 2004; Russell and Kulesza, 2000; Roslender, 1996; Ward, 1992: 283-304):

* Management accounting is alleged to be subservient to external financial accounting requirements.

* Its failure to capture a company's progress towards world-class manufacturing, which will allow a company to manufacture a high-quality product reaching the customer quickly with high performance and customer satisfaction.

* It lacks strategic considerations in management accounting and project appraisal. The internal orientation of accounting information is too narrow for strategic decision-making. **"**Today's management accounting information, driven by the procedures and cycle of the organisation's financial reporting system, is too late, too aggregated, and too distorted to be relevant for managers' planning and control decisions. With increased emphasis on meeting quarterly or annual earnings targets, internal accounting systems focus narrowly on producing a monthly earnings report" (Johnson and Kaplan, 1987:1).

* Incorrect product costs in multi-product companies due to overhead absorption methods. It seems desirable for management accountants to assess the causes which lie behind the growth in overhead costs and to gain an appreciation of the factors which cause fluctuations in overhead costs, in a manner similar to their understanding of how labour and material costs arise in manufacturing operations.

* The maintenance of traditional assumptions in performance evaluation and the continued short-term orientation of this process.

* The reliance of management accounting on redundant assumptions concerning manufacturing processes. This is reflected in an overconcern with direct labour and components produced within the firm, rather than overheads and brought-in components.

Changes in the business environment which are seen as being likely to affect those redundant assumptions upon which existing management accounting practices rely, and which will be discussed in sections 2.5.1 to 2.5.5.4, are founded on:

* Direct labour
* Direct material
* Overhead costs
* Accounting variances
* Accounting records
    - Back flush accounting

- Qualitative and non-monetary measures
- Investment appraisal of Advanced Manufacturing Technology
- Activity-based Costing

2.5.1 Direct labour

Direct labour becomes a smaller proportion of manufacturing activity as an organisation moves from traditional production techniques towards advanced manufacturing capabilities. This is because labour is replaced with machinery and the remaining payroll becomes fixed with regard to operating activity. The repercussions on traditional costing practices are of great significance, because direct labour has until now been a major cost factor and the principal allocation base for indirect cost assignment (Miller and Volman, 1985).

2.5.2 Direct material

Direct material might be expected to constitute the same proportion of manufacturing costs under a system using Advanced Manufacturing Technology (AMT) as with a traditional manufacturing facility, except for the material and brought-in parts (BIP) obtained from subcontractors for further processing and assembly in larger firms. Such costs can be expected to diminish as subcontracting firms also adopt increasingly advanced production techniques and benefit from any resulting cost advantages (Solomons, 1968).

However, one result of adopting a modern manufacturing process is the expansion of BIP, and factories increasingly becoming a facility for assembling material and BIP as they are in Japan in some industries. According to Solomons (1968) this trend is likely to result in an increase in the input cost of raw material compared with the traditional production process and necessitates enhanced material control and monitoring systems. Firms where these costs represent well over 50 per cent of all costs are increasingly common. Proportions up to 95 per cent have been observed in some industries. This change may require the use of methods which cost the activities required for material and BIP. In a more conventional accounting system it may require the switching of the overhead allocation basis from direct labour hours to material and BIP.

Another important implication of AMT is that the material cost pool would be expected to disappear in a purchasing department using Just In Time (JIT) techniques, because the warehouse would be eliminated and material handling costs would be reduced. An organisation which traditionally allocated purchasing, material handling, quality inspection and warehouse costs separately would have to discard the warehouse cost pool and to combine other cost pools because of their diminishing importance (Horngren and Foster, 1988).

2.5.3 Overhead costs

Overhead costs can be expected to increase as capital-intensive AMT investments are made. This trend may be offset to some extent by the adoption of novel accounting techniques, which seek to reduce the costs that are treated as overhead. This is

achieved by trying to increase the direct traceability of costs to individual production lines, thereby limiting the size of the overhead "globe" (Vangermeersch, 1986). Material handling will move from an indirect cost in the traditional environment to a direct cost in the JIT environment.

Overhead allocation bases, which correspond to number of employees and floor space among other factors become less suitable in this setting. Both these categories decrease in size with the implementation of AMT. For instance, one of the goals of computer-integrated manufacturing is to achieve a "peopleless" factory structure. Moreover, in a pure JIT environment, there are no warehouses. This suggests that allocation bases tied to number of employees or floor space will suffer significant shortcomings in the "factory of the future".

High ratios of fixed costs to variable costs limit a company's ability to respond to changes in the economy. Labour-intensive industries can to some extent cut costs during a recession by laying off workers. Capital-intensive sectors of industry relying on robotised production methods and flexible manufacturing systems, will by contrast find it more difficult to reduce operating expenses. It is consequently regarded as doubly important for such industries to seek ways of tracing costs that are conventionally viewed as unavoidable overhead expenses and attempt to address these through new forms of manufacturing accounting methods so as to enhance their controllability and bring them within the locus of costs that can be monitored by the manager (Banker, Potter and Schroeder, 1995: 115-138).

2.5.4 Accounting variances

The significance of variances are regarded as playing a diminished role in manufacturing environments using AMT because of the changed infrastructure within which manufacturing takes place (Drury, 2000; Fowler and Hawkes, 2004). For instance, purchase price variances lose their relevance when prices are determined by contract and when total cost of operation, quality, availability and long-term reliability arising from vendor contracts take precedence over low material prices resulting from large quantity purchases but which contradict the AMT philosophy of near zero inventory levels of raw material or sub-components (Howell and Soucy, 1987b).

Likewise, efficiency variances relating to plant production performance such as scrap and reward variances can be tracked on an operating rather than a financial basis in the new manufacturing environment and on a real-time rather than on a delayed basis. (Allot, Weymouth and Claret, 2000: 127-136). Thus accounting efficiency variances which focus on financial numbers and which are produced with a time lag may be rendered virtually useless. It is actual material, labour, manufacturing and non-manufacturing expenses which are important in a new production context where, as Howell and Soucy (1987b) state: "we will see a de-emphasis on standard costs and particularly variance analysis in the new factory and much greater emphasis on actual costs and how they are changing."

2.5.5 Accounting records

The scope and detail of accounting information is likely to change when moving from a traditional to an advanced manufacturing environment (Boer, 2000). Deliveries of raw material and sub-components, as an example, increase substantially in JIT environments. The consequent additional and large resources required for information processing can lead to intense cost-cutting measures such as batching individual purchase deliveries, utilising electronic transfer systems in which a purchase automatically establishes data and funds transfer at the delivery and payment dates, and using a back flush internal accounting system which considerably lowers record-keeping costs.

2.5.5.1 Back flush accounting

A key aspect of the JIT philosophy is that it simplifies production activities. JIT can also allow back flush accounting to be used whereby the level of detail with which product information is recorded is greatly reduced. A back flush costing system focuses first on the output of the organisation and then applies costs to units sold and to stock afterwards. The point at which a sale occurs, or when the product is finished, can be taken to be the point at which accounting entries are made. This point is often referred to as the trigger point. In contrast, conventional product costing systems track costs through work in progress, beginning with the introduction of raw material into production (Horngren and Foster, 1988).

2.5.5.2 Qualitative and non-monetary measures

Within the new manufacturing environment, monitors of quality, delivery time, inventory reduction and machine performance are seen as replacing measures of labour productivity, machine and capacity utilisation and standard cost variances. Accordingly, information systems need to shift their focus from traditional quantitive financial data to operating quality and other measures.

Operating measures in the new manufacturing environment can be grouped into the following five categories: quality, inventory turnover, material/scrap, equipment/maintenance and delivery/throughput (Howell and Soucy, 1987b).

2.5.5.3 Investment appraisal of Advanced Manufacturing Technology

Capital investment in AMT requires the application of financial appraisal and budgeting techniques which emphasise factors different from those usual for conventional investment decisions. Automating and computerising production processes result in economically identifiable cost reductions, such as reduced labour utilisation, diminished scrap and rejects and working capital savings from lower inventory levels. Certain benefits from AMT, however, are not subject to ready quantification but may contribute in substantial ways to satisfying desired corporate objectives. Such benefits can include enhanced quality, faster delivery, less frequent production breakdowns, lower after-sale service requirements, increased production flexibility and diversity, faster throughput and, more generally, attaining a valuable competitive advantage (Vangermeersh, 1986; Howieson, 2003).

Certain investments entail the decision to change the manufacturing design and layout of the production plant completely, resulting in a new factory being built from scratch. Such strategic investment decisions need to be handled differently from more tactical short-term decisions so as to encompass not only cash flow forecasts but also the longer-term strategic aspects of intended projects within the overall perspective of the firm (Howieson, 2003).

There are ways of examining AMT investments in a broader perspective to encompass both quantifiable and qualitative factors. One possibility is to combine formal and informal analysis within a strategic investment appraisal framework by linking corporate strategy to benefits perceived to accrue from AMT adoption (Bromwich and Bhimani, 1994). The method involves separating the strategic benefits internal to the enterprise including increased control of production systems through raw material, labour usage and reduced inventory and extra managerial information.

Market-orientated strategies yield benefits traditionally seen as unquantifiable, such as quality improvements, increased production flexibility and customer satisfaction, enhanced company image and reduced risk through greater product mix possibilities and broader skills range. Internal strategic benefits largely comprise those traditionally expressed in monetary terms, but also include qualitative benefits arising from synergies across plants and divisions and new information exchange possibilities between different advanced manufacturing systems within the organisation.

Both market-oriented and internal strategies need to be assigned to different categories of costs and benefits, according to whether these are already in financial terms or expressible with effort in monetary terms or are inexpressible in monetary terms. The three categories can then be ranked within a strategic planning matrix giving three scores for every investment project proposal as a basis for ultimate decision making. This way of analysing investment projects offers firms a starting point for assessing the decision to automate through individually tailored techniques encompassing costs and benefits specific to the firms and without limitations as to the nature of these costs and benefits. This complements AMT implementation, which must be customised to fit the enterprise seeking to automate (Kaplan and Atkinson, 1998).

The view that traditional practices need to be adapted to provide information that is strategic, outward-looking and which allows the anticipation of events, was particularly strongly felt. For instance, efforts were being made by firms in the study to make absorption costing data more accurate through improved cost analysis with a view to allowing more efficacious studies of product profitability.

It is believed that further evidence on how the continuing implementation of AMT by manufacturing organisations is affecting the information needs of managers, and how the management accounting function can accommodate those changing needs, is desirable. The implementation of the approaches to management accounting systems outlined in this report within individual organisations is to be encouraged. Indeed, experimentation and innovation within accounting functions and systems by individual firms will cast much needed light on how management accounting tools

and concepts can be redesigned to enhance the functioning of organisations. Organisations should be encouraged to react to challenges to management accounting arising from the installation of modern production systems. Advances in technology have meant that many of the companies are pushing accounting "into the field". Non-accountants are performing the duties traditionally performed by accountants (Burns, 2000).

Management accounting professionals should keenly monitor the results of such changes but should be cautioned against totally revising the assumptions upon which their existing activities are founded on the basis of what is presently known about the implications of AMT for management accounting.

2.5.5.4 Activity-based Costing

During the 1980's the limitations of traditional product costing systems began to be widely publicised. These systems were designed decades ago when most companies manufactured a narrow range of products, and direct labour and materials were the dominant factory costs. Overhead costs were relatively small, and the distortions arising from inappropriate overhead allocations were not significant. Information processing costs were high, and it was therefore difficult to justify more sophisticated overhead allocation methods (Sharma, 2000).

Today companies produce a wide range of products, direct labour represents only a small fraction of total costs, and overhead costs are of considerable importance. Simplistic overhead allocations using a declining direct labour base cannot be

justified, particularly when information-processing costs are no longer a barrier to introducing more sophisticated cost systems. Furthermore, the current intense global competition has made the decision errors due to poor cost information more probable and more costly. Over the years the increased opportunity cost of having poor cost information, and the decreased cost of operating more sophisticated cost systems, increased the demand for more accurate product costs (Holzer and Norrelklit, 1991). It is against this background that activity-based costing (ABC) has emerged. ABC, however, is not a recent innovation. Fifty years ago Goetz (1949) advocated ABC principles when he wrote:

"Each primary (overhead) class should be homogeneous with respect to every significant dimension of management problems of planning and control. Some of the major dimensions along which (overhead) may vary are number of units of output, number of orders, number of operations, capacity of plant and number of catalogue items offered."

Decreasing information-processing costs resulted in a few firms in the USA and Europe implementing ABC type systems during the 1980's. In a series of articles based on observations of innovative ABC type systems Cooper and Kaplan (1988) conceptualized the ideas underpinning these systems and coined the term ABC. These articles were first published in 1988. They generated a considerable amount of publicity and consultants began to market and implement ABC systems before the end of the decade. In a survey of UK companies Innes and Mitchell (1991) reported that approximately ten per cent of the surveyed companies had implemented, or were in the process of implementing ABC. Based on their experience of working with early

US adopters, Cooper and Kaplan (1988) articulated their ideas and reported further theoretical advances in articles published between 1990 and 1992. ABC ideas have become firmly embedded in management accounting literature and educational courses, and academics should accommodate these changes in their courses.

2.6 Challenges for management accounting education

There are some obvious new directions, given the problems discussed in sections 2.5 to 2.5.5.4, in which to extend management accounting education. First, the traditional cost accounting model, developed for the mass production of a few standardised products, must be updated to accommodate the realities of the manufacturing environment since the 1980's. Companies are now making fundamental changes to manufacturing operations in their organisations. These include JIT scheduling, Zero defect and Zero inventory production systems, and cooperative and flexible work-force management policies (Drury, 1988). The cost-accounting implications of these more advanced production control systems have barely been investigated and, as a result, our management accounting textbooks continue to describe production processes using extremely simplified models, such as the single product, deterministic EOQ formula. These materials are used in the teaching of management accounting and restricts the student's capacity to see the impact of the realities of the latest manufacturing environment.

The challenges of the competitive environment in the 1980's, which included JIT scheduling, Zero defect production systems and cooperative and flexible work-force management policies, caused companies to re-examine their traditional cost

accounting and management control systems, because virtually all of the practices employed by companies during the 80's and explicated in leading cost accounting textbooks had been developed by 1925 (Ashton, Hopper and Scapens, 1995; Emmanuel, Otley and Merchant, 1992; Kaplan and Atkinson, 1998).

Despite considerable changes (Russell and Kulesza, 2000) in the nature of organisations and the dimensions of competition during the past twenty years, the innovation in the design and implementation of cost accounting and management control systems have not been enough. Therefore, it is not only appropriate but also necessary that we understand the current business environment and how it reflects on the new demands for planning and control information, and to develop an education strategy to meet these new demands (Burns, 2000; Sharma, 2000).

The three main change drivers, which caused these changes in the nature of the business environment for which the academic institutions prepare the graduates, are the following (Russell and Kulesza, 2000; Parker, 2002):

1. Technology has been developed that makes information preparation and dissemination very inexpensive. Accounting technology is now low cost. We have high-speed digital and cable video and data transmission that makes information available to anyone, at any place, and at any time. We have access to hardware that produces information accurately, quickly, and easily. Software makes preparation, data, and communication tools available to individuals and entities that previously did not have access to the information they needed.

2. Globalisation has had a significant impact on business and how business is done. Faster methods of transportation, coupled with instantaneous information, have made the world one giant, interconnected marketplace. Consumers can buy products from firms in another country as easily as they can at the store next door.

3. The concentration of power in large market investors, primarily mutual and pension funds, has shifted the corporate balance of power. Armed with easily available and inexpensive information about firms and their competitors, large institutional investors raise the competitive bar very high and, simultaneously, decrease the period of time over which success is measured.

Russell and Kulesza (2000) state that these three change drivers have had two major impacts on business:

* They have eliminated the old accounting model that information and knowledge is expensive. In the new economy, anyone with the right software can become an "accountant" or "financial manager" and produce financial information for decision-making purposes (Gabbin, 2002).

* They have resulted in a dramatically increased level of competition among all organisations (Parker, 2002). Institutional investors want the best performance, and they want it instantaneously. Global competitors often have different cost structures that will be exploited to render historically-based business models obsolete.

In this article on this changing role of management accountants, Burns and Yazdifar (2001) support the pre-established argument that the management accounting discipline must understand the current business environment, as well as how it reflects on the new demand for planning and control information, and develop an education strategy to meet these new demands. They record the following research findings (2001: 33-35):

* "Traditional management accounting (e.g. budgeting and variance analysis) is primarily done in the field by business managers rather than by management accountants."

* "Routine tasks, e.g. transaction processing and external reporting, have diminished substantially: they are now the responsibility of much smaller specialist groups and often involve database technology. These tasks are also increasingly being outsourced."

"New" tasks that will be of future importance for management accountants are:

* strategic planning and decision-making,
* implementing business strategy,
* the generation and creation of value,
* implementing and designing new information systems and
* interpreting operational information.

Burns and Yazdifar (2001) summarises as follows:

Traditional management accounting practices and roles will remain important (Sharma, 2000). However, technological advances and the transfer of traditional accounting roles to managers mean that fewer management accountants will be involved in these jobs and that the role of management accountants has changed.

Therefore, to accommodate the above-mentioned changes, professional accounting bodies should modernise their training and education programmes to ensure that members can deal with information systems, strategy and change management (Howieson, 2003).

Chapter 3

Historical overview

To understand the role of management accounting today, it is important to understand its history. Therefore a brief overview of the historical developments in management accounting practice from the nineteenth century to the present day is given. The impact of the changing management accounting practice on the teaching of management accounting will be addressed in the last part of the chapter.

3.1 The evolution of management accounting systems

Johnson and Kaplan (1987) state that the origins of modern management accounting can be traced to the emergence of managed, hierarchical enterprises in the early nineteenth century. Prior to this, virtually all transactions occurred between an owner-entrepreneur and individuals (such as raw materials suppliers, labour paid by piecework and customers) who were not part of the organisation. All transactions occurred in the market, and the owner could easily measure the success of each order by comparing the cash collected from customers with the cash paid out to the suppliers of production inputs. The double-entry bookkeeping system recorded money owing and owed, but did not act as an aid to decision-making and control.

The Industrial Revolution in the early nineteenth century resulted in the emergence of a factory system that dramatically changed the production process (Ashton, 2000: 76). Instead of entrepreneurs making contracts with workers who made goods in their

own homes it became more efficient to invest in capital-intensive processes and hire workers on a long-term basis to perform multi-stage production processes within a centralised workplace.

The emergence of the factory system created a new demand for accounting information. Market information, which had automatically provided details of materials and piecework labour costs incurred in meeting each customer's order, was no longer available. This created a need for cost accounting information to replace market information. In particular, information was required to determine the cost of the internal operations and also to measure the efficiency of converting materials leading to the finished product (Parker, 2002). The factories were frequently located a considerable distance form the head office of the owners, and an information system was required to judge the efficiency of the managers and workers at the factory. Thus, for a textile factory internal measures were developed such as cost per hour or cost per pound produced for each process and each worker.

Johnson and Kaplan (1987) suggest that, notwithstanding the impact of the Industrial Revolution, the emergence and rapid growth of railways in the mid-nineteenth century was *the* major driving force in the development of management accounting systems. New measures such as cost per ton-mile, cost per passenger mile and the ratio of operating expenses to revenues were created and reported on a segmental and regional basis. Many of the innovative management accounting measures developed by railway companies were subsequently absorbed and developed by other business sectors. For example, the large retail store chains such as Woolworths that developed in the late nineteenth century also needed measures to assess the efficiency of internal

operations. Measures such as gross profits and stock turnover ratios to measure the profitability and efficiency of the different departments, were adopted and extended by these retailers.

Johnson and Kaplan (1987) conclude that management accounting systems evolved to motivate and evaluate the efficiency of internal processes and not to measure the overall profit of the organisation. A separate financial accounting system,which will be discussed in section 3.4, and which operated independently of the management accounting system, recorded transactions for preparing annual financial statements for the owners and creditors of the firm.

In sections 3.2 to 3.5 various eras that had a definite impact on the development of management accounting will be discussed, including their influence on management accounting literature and teaching. Section 3.6 will be devoted to a discussion of educational developments with regard to management accounting, while section 3.7 will provide an overview on some management accounting textbooks and their influence on the teaching of management accounting. Sections 3.8 to 3.10 attempt to analyse current developments in management accounting and management accounting education.

3.2 The scientific management era

Further advances in management accounting were associated with the scientific management involvement. The scientific management engineers concentrated on improving the efficiency of the production process by simplifying and standardising the operations. Labour and material quantity standards based on the "one best way" of performing operations were developed and used to plan the flow of work and control operations. At about the same time as scientific managers were refining their techniques for determining standard, articles advocating the use of standards for cost control were published (Longmuir, 1902; Garry, 1903; Whitmore, 1908). According to Solomons (1968), it was G. Charter Harrison who, in 1911, designed and installed the first standard costing systems known to exist. In 1918 Harrison published the first set of equations for the analysis of cost variances. Much of Harrison's work is contained in today's literature on standard costing.

One other pioneer of standard costing is worthy of mention. In a series of articles in the Engineering Magazine of 1908 and 1909, Harrington Emerson advocated the development of accounting information systems specifically directed towards the achievement of efficiency objectives. Emerson was possibly the first writer to stress that information on standards permits managers to differentiate variances that are due to controllable conditions and variances that are caused by conditions beyond management's control. This idea is contained in much of today's literature on responsibility accounting. Thus, by 1920, sophisticated systems to record and analyse variances from standard had been implemented and articulated in accounting literature.

3.3 The growth of diversified organisations

In the early decades of the twentieth century a merger wave in the USA resulted in the emergence of giant vertically integrated and multi-divisional organisations. These multi-activity firms developed a centralised unitary organisational structure where the firm's operations were broken down into separate divisions, each with highly specialised activities. Its own manager ran each division, and the role of top management was to coordinate the diverse activities, direct strategy and decide on the most profitable allocation of capital to a variety of different activities. New management accounting techniques were devised to support these multi-activity, diversified organisations (Russell and Kulesza, 2000). Budgetary planning and control systems were developed to ensure that the diverse activities of different divisions were in harmony with overall corporate goals. In addition, a measure of return on investment (ROI) was devised to measure the success of each division and the entire organisation. Top management used the ROI measure to focus on the productivity of capital and to help them allocate capital to the most profitable divisions.

The diversity of product markets and the scale and complexity of the production processes within these new multi-activity firms created enormous information processing problems. It made it extremely difficult for corporate top management to function efficiently and effectively in all the markets served by their organisations (Russell and Kulesza, 2000). The solution to this problem was further decentralisation and the creation of investment centers. Most operational and investment decisions were delegated to divisional managers, and corporate top

management concentrated on coordinating, motivating and evaluating the performance of divisional managers. The ROI measure played a vital role in making it possible for centralised organisational structures to function effectively, since it enabled central management to delegate to divisional managers the responsibility for using capital efficiently. Attainment of ROI targets also became the basis for promotion within the organisation and, in some cases, dismissal of managers who failed to achieve a satisfactory ROI. The effect of interdependence and pricing of transfers of intermediate output between divisions also had to be considered as these factors could distort the ROI measure. Systems of transfer prices were subsequently devised that sought to provide a fair basis for allocating profits between divisions (Boer, 2000).

3.4 The dominance of financial reporting

According to Johnson and Kaplan (1987), most of the management accounting practices used today had been developed by 1925, and for the next 60 years there was a slow-down, or even a halt, in management accounting innovation. They argue that this stagnation can be attributed partly to the demand for product cost information for financial accounting reports. The separation of ownership and management of organisations created the need for the owners of the business to monitor the effective stewardship of their investment by the management. This need led to the development of financial accounting, which generated a published report for investors and creditors summarising the financial position of the company. Statutory obligations were established requiring companies to publish audited annual financial statements. In addition, there was a requirement for these published statements to

conform to a set of rules known as Generally Accepted Accounting Principles (GAAP), which were developed by regulators. These rules required that inventories be valued on the basis of historical manufacturing costs, which implied that non-manufacturing costs were not allocated to products, since GAAP procedures classified them as period costs and not product costs, although non-manufacturing costs may be important for decision-making (Drury, 2000).

The preparation of published financial accounting statements required that costs be allocated between cost of goods sold and inventories. Cost accounting emerged to meet this requirement. Simple procedures were established to allocate costs to products that were objective and verifiable. The emphasis was on the allocation of costs to products rather than accurately measuring resources consumed. Individual product costs could be inaccurate as an estimate of resources consumed by each product, but still provide information that was sufficiently accurate for inventory valuation and computing the cost of goods sold at the aggregate level reported in the financial accounting statements (Boer, 2000; Parker, 2002).

Johnson and Kaplan (1987) argue that the product costs derived from the cost accounting system were used for management accounting purposes. They conclude that managers did not have to yield the design of management accounting systems to financial accountants and auditors. Separate systems could have been maintained for managerial and financial accounting purposes, but the high cost of information collection meant that the costs of maintaining two systems exceeded the additional benefits. Thus companies relied primarily on the same information as that used for external financial reporting to manage their internal operations.

3.5 The period of lost relevance

There are many service organisations which do not have finished goods stocks or work-in-progress. They require management accounting information to ascertain the cost of each service and its contribution to total company profits. These organisations do not have to conform to any financial accounting requirements for the purpose of tracing costs to various services. Nevertheless, most service organisations adopted traditional product cost accounting techniques, based on arbitrary overhead allocations, to trace costs to the different business segments. Dearden (1978) suggested that compared with manufacturing organisations, management accounting systems in most service organisations evolved at a later stage. Consequently, when they implemented systems, they sought advice or employed accountants from manufacturing industries that had been using cost accounting systems for decades. This resulted in service organisations adopting traditional product costing techniques.

In recent decades customers have demanded a wider range of products, production technology has changed, product life cycles have shortened, and advances in information technology have resulted in a dramatic decline in information costs (Drury, 2000). The changing environment required that companies reconsidered their decision not to invest in a separate, more relevant and timely management accounting system. However, Johnson and Kaplan (1987) claim that, by the time these events unfolded, organisations had become fixated on the cost systems of the 1920's. Furthermore, when the information systems were automated in the 1960's, the system designers merely automated the manual systems that were developed in the 1920's. Johnson and Kaplan (1987) conclude that the lack of management accounting

innovation in recent decades and the failure to respond to its changing environment resulted in a situation in the mid-1980's where firms were using 30-year-old management accounting systems that were obsolete and no longer relevant to today's competitive and manufacturing environment. This lost relevance of management accounting in the changing environment of recent decades, has had an effect on the teaching and the applicable theories of management accounting as will be discussed in sections 3.6 and 3.7. The reason for this is that the understanding and evaluation of the changing environment is based on theoretical principles and rules, which can be seen as a substructure of management accounting.

3.6 Introduction to the changes in the teaching of Management Accounting

The first issue of the Journal of Management Accounting Research (JMAR) included a trio of papers written by senior members of the management accounting teaching profession describing where management accounting had been and where it was going. Two of these authors' observations can be summarised as follows:

Robert Anthony (1989:3) said that in the 1930's the closest things to management accounting textbooks were cost accounting books. He also noted the difference between cost accounting and management accounting: "... cost accounting texts dealt entirely with numbers, while management accounting recognises that human beings use the numbers."

Anthony (1989) said the objective of cost accounting was to find the cost of manufacturing products, whereas the objective of management accounting was to help managers use accounting information to run their organisations. He went on to describe the introduction of topics like differential costs, transfer pricing, present value, cost of capital, and profit centers into the field of management accounting; the field picked up these topics as companies introduced them into practice or as management accounting professors learned of their use by studying problems faced by company managers.

In the same (first) issue of JMAR Professor Charles Horngren (1989: 22) described how he was introduced to differential costs while teaching at the University of Chicago, where he worked with Professor Vatter. He also presented an interesting table showing how the contents of cost accounting books had changed: the number of chapters devoted to inventory valuation (costing of inventory) had declined from 73 per cent in the 1945 to 1950 period to 46 per cent by the 1970's; chapters devoted to cost control (budgeting, cost variances, etc.) had remained the same during this period; and chapters devoted to management decision-making (e.g., make-or-buy decisions, special price decisions, return on investment analysis, etc.) had increased from six per cent in the early period to 33 per cent in the 1970's. The big shift in emphasis in cost accounting texts over this 25-year period is consistent with the changes taking place at the Institute of Management Accounting (IMA) and the Chartered Institute of Management Accountants (CIMA). The primary publication of the IMA began life as the N.A.C.A. Bulletin in 1925, which handled issues such as product costing and budgeting. In 1957 it became the N.A.A. Bulletin (dropping the "cost section" of the name) and in 1965 the name again changed to Management

Accounting. In the 1990's management accountants took another leap forward as they became much more involved in the financial affairs of their companies, and this led to the name of the monthly publication being changed to Strategic Finance. The Chartered Institute of Management Accountants, which is based in London, also acknowledged the shift in the management accounting environment and textbooks, given that the name and angle of their monthly publication went through similar changes and the name of the publication is currently Financial Management (Parker, 2002).

A review of seven current management accounting texts shows that they devote about 35 per cent of their chapters to decision-making topics, which is almost the same percentage as that for the 1970-era books. The books have changed little (in terms of their decision-making content) since the 1970's.

In summary, the economy is changing, the textbooks are changing, the professional organisations are changing, and the subject matter of management accounting is changing. This leaves the accounting educators with many challenges, the biggest of which concerns the learning process. In the learning process the focus should be on developing the ability to identify problems, seek opportunities, search for desired information, analyse and interpret it and reach a well-reasoned conclusion from these alternatives. This will only be achieved if our management accounting educators are able to devise management accounting education programmes that teach students to use their critical faculties, and furthermore to do so independently. This is far more challenging and exciting than merely "transforming the body of knowledge" (Mulder, 2000: 18; Maher, 2000).

3.7 A half-century of management accounting education and practice

It is clear, as discussed in sections 3.2 to 3.5, that management accounting has been evolving, and a closer look at the major events of the past 50 years might be useful in helping to see where the discipline is now. Such a survey can begin with the direct costing controversy, which reached its peak in the 1950's and 1960's. This is followed by comments on the mathematics movement in management accounting, the study of behavioural issues, the use of agency theory, and, finally, the shift to a study of how the real world of business influences management accounting. Each of these issues is dealt with in more detail below.

3.7.1 The Direct Costing controversy

The debate about direct costing can be viewed as the most significant event of the 1950's. The level of significance of this debate can be judged by the number of articles, books, and research studies published on this topic from 1950 through to 1959. A review of the listings under the title "direct cost" in the Accountants Index for these years shows 144 publications for the decade. To put this in perspective, the number of national accounting journals in the U.S. during this decade was probably under six.

The stage for a discussion of direct cost was set by two papers published in the 1930's: Harris (1936) in a paper entitled "What Did We Earn Last Month?" explored

how to compute net income under different inventory costing methods, and Kohl (1937) in his paper "What is Wrong with Most Profit and Loss Statements?" argued that all fixed costs should be excluded from product costs. Although these papers appeared well before 1950, they put the case for direct costing that was so heavily debated by accountants during that decade.

The defenders of direct cost (essentially marginal cost) cited many examples of cases in which net income based on absorption costs (basically average cost) gave results that seemed to defy all rules of logic. They showed cases in which companies with declining sales were increasing reported profits by simply building up inventory, and cases in which companies were reporting losses only because inventories were declining. Marple (1956) wrote a short paper illustrating the unusual results one would get for a company called the All Fixed Company. This company had only fixed costs and zero variable costs, so net income varied (for a given sales level) with the level of inventory.

On the other side of the case were the individuals arguing that sales people would cut prices too low if they received only variable costs instead of full costs for the products they were selling. Financial accountants used the matching concept (and income tax reporting requirements) to defend the use of fully absorbed costs to compute net income.

Several accountants - Marple (1967) and McFarland (1966) are the two best examples - carried the notion of direct cost beyond just the computation of net income to create a complete approach to management accounting based on the concepts of marginal

cost and contribution accounting. In this view all fixed costs are identified with various firm segments; these fixed costs come and go with the segment. If a company eliminates a segment, all the fixed costs traceable to that segment disappear. Likewise, all revenues generated by the segment have these same fixed costs deducted to arrive at the segment contribution. This results in a contribution hierarchy in which segments near the top of the organisation carry more fixed costs than segments near the bottom. It also means no cost allocations appear in any management reports.

Horngren's (1962) early cost accounting book presented the contribution approach to management accounting, but a review of published articles for the past 20 years indicates that this approach does not enjoy wide acceptance. Anecdotal evidence suggests some companies (e.g., Dresser-Komatsu, Nortel, Green Seed Co., Saint Communications, and several firms in the south eastern U.S.) do use contribution accounting for management reporting, but it has not received wide discussion in the accounting or management literature since the 1960's. This may be because very little can be said about contribution accounting and direct costing that was not already said 40 years ago.

3.7.2 Mathematics of Management Accounting

A study of Kaplan (1983) suggests that mathematics was the next big idea to strike management accounting education. The Ford Foundation provided money to upgrade business education during the 1960's, and one of its programmes provided quantitive training for business school professors. This was part of an attempt to make business education more scientific and, since mathematics is the language of science, it seemed appropriate for a business faculty to be mathematically literate.

This idea filtered into the teaching side of management accounting and a few management accounting textbooks appeared during the 1970's with a heavy (and in some cases almost exclusive) mathematical emphasis. These books covered inventory models, linear programming, regression analysis and Bayesian decision-making, among other topics. Wherever possible the authors used a mathematical approach to a problem instead of an alternative presentation. The Kaplan book, Advanced Management Accounting, published in 1983, probably represents the last hurrah of this view of management accounting. Only three of the seventeen chapters (Chapter 2: "Cost Behavior Patterns," Chapter 13: "Decentralisation," and Chapter 16: "Executive Compensation and Bonus Plans") were devoid of any mathematical notation. The book even had a chapter covering Cost Volume Profit (C-V-P) analysis under uncertainty, a topic not for the mathematically faint of heart (Kaplan, 1983).

In the next edition of his book (Kaplan and Atkinson, 1989) almost all the mathematical notation disappeared, and the material focused much more heavily on management decisions and the structure of organisations. For instance, the first

edition of the book included two chapters on C-V-P. The first chapter focused on deterministic extensions of C-V-P, and the second chapter dealt with C-V-P under uncertainty. The second edition of the book included one chapter on C-V-P; this chapter covered the basics of C-V-P with minimal mathematical notation. Further, it expanded the topic to include the concepts of what-if analysis and simulation using spreadsheets. More importantly, the second edition focused the discussion on management issues related to the use of C-V-P rather than on the techniques of C-V-P, as did the first edition. The second edition was clearly aimed at managers, whereas the first edition was aimed at the technician who could work with mathematical models.

The third edition of the book moves even further in the direction of management decisions (Kaplan and Atkinson, 1998). The three versions of the book capture the flavour for much of what has changed in management accounting during the past 20 years. Table 1 (refer to the next page) shows the topics in the three versions to indicate this change from mathematics to management decisions. The topics covered by the three editions of the book were placed into two categories: "Traditional" Topics and "Management Decision" Topics. Different people, of course, can do the classification differently. Nevertheless, the categorisation does show a growing emphasis on topics related to management decisions (Binnersley, 1996: 32-34).

Table 1

Traditional topics versus Management decision topics
(Kaplan and Atkinson, 1998)
"Traditional" Topics
Cost behaviour and regression
Cost-Volume-Profit Analysis
Cost analysis and pricing
Variances for sales and costs
Cost allocation
Cost-Volume-Profit Analysis
Cost estimates and regression
Cost data and pricing
Sales and profit variances
Cost allocation
Cost behaviour
Assigning costs to centers
Activity-based costing
"Management Decision" Topics
Decentralisation
Profit centers
Measuring quality
New techniques for manufacturing operations
Investments in new technology
Executive contracts
Formal models for budgeting and incentive contracts
Activity-based management
Balanced scorecard
Financial measurement of performance and non-financial measures
Economic Value Added
Measuring customer, process, and employee performance
Incentive compensation systems

Not only does the third edition devote more space to these topics, but also the authors' discussion of even traditional topics like cost allocation has a management flavour. For example, in one discussion of cost allocation Kaplan and Atkinson (1998: 65) describe the decision framework in which such a procedure might be used and the effects that the data can have on the manager using the data. The desired manager behaviour becomes the focus of the discussion instead of the rationale for the allocation.

The number of cases included in the book has also grown with each edition:

* the first edition had only 11 cases,
* the second edition included 30 cases and
* the third edition has 47 cases.

A book that began its life as a treatise on mathematical tools for accountants has evolved into a book on how managers can use financial and operational data to run organisations. The changes in this book reflect how management accounting has moved away from its interest in mathematics. Fortunately, management accounting has passed through this stage and is now focused more on finding relevant management issues to study instead of, for example, solving EOQ equations, using constrained optimisation techniques such as linear programming.

3.7.3 Behavioural Accounting

People do react to accounting numbers, and a group of management accountants began to study this issue in the 1960's. Numerous papers appeared reporting how people reacted to the numbers produced by the accounting system. One of the most practical studies was one commissioned by the National Association of Accountants dealing with the issue of participation in the budgetary process (Swieringa and Moncur, 1975). The generally accepted view of budgeting presented in the textbooks of that day was that the more participation a company could get in the budgetary process, the better the budgets would work. Their study showed that in some circumstances this was true, but it also showed other circumstances in which active budget participation could frustrate the objectives of top management and lead to practices very damaging to the overall company.

Today accounting scholars still study the manager-accounting system interaction, but the only impact this work seems to have had on what is taught in management accounting courses is that most management accounting books now acknowledge the importance of behavioural issues. Unfortunately, not much of this research has made its way into the mainstream of management accounting courses. The reason could be because of the difficulty to project people's behaviour in various business environments and circumstances.

3.7.4 Agency theory

Instead of studying people, another group of academics looked at abstract representations of people who could be rigorously analysed by using a principal-agent framework (Boer, 2000). These scholars represented people through their utility functions, and studied the notion that people work to benefit themselves instead of the total organisation. The term "agency theory" is used to describe this field of study. This model allowed researchers to devise rigorous mathematical representations of owners' (principals) and workers' (agents) behaviour under alternative contracting schemes between the two.

Unfortunately, as with the behavioural research, very little of this work has made its way into the teaching of undergraduate management accounting. The work has made management accountants much more sensitive to the incentive effects of management accounting systems, but direct applications of agency theory to actual day-to-day operations in organisations are difficult to find. This is disappointing because the model seems to have much possible value. Perhaps this explains why researchers are still working to develop applications of agency theory to management accounting - the potential payoff still attracts the best and the brightest to try one more time to create workable applications that managers can use in their day-to-day operations.

In graduate-level courses, one can find more uses of agency theory, perhaps because graduate students expect to work with more abstract material and because they are better equipped with the quantitive tools required to use these models.

3.7.5 Real-World discoveries

In the early 1980's, management accountants began to look at real businesses again to see what could be learned from an examination of business practices. The Management Accounting Section of the Academic Accounting Association (AAA) held conferences at which academics discussed how to use cases to promote the teaching of management accounting, and a number of academics began to study accounting phenomena using data from real companies. The number of management accounting academics using data from companies has risen significantly since Professor Kaplan (1983) first began calling for this type of research. Banker et al. (1995), Banker, Lee, and Potter (1996), Banker, Lee, Potter, and Srinivasan (1996), and Banker and Evans (1997) have done numerous studies of management accounting issues by analysing data from real companies. Textbooks have started to use more references to real companies in discussing ideas presented in the books, and many more managerial accounting cases are appearing. The annual research conference of the Management Accounting section of the AAA now includes a joint session with the IMA at which companies present live cases based on their practices.

Issues in Accounting Education have been publishing cases that faculties can use in their courses for several years. During the past five years 11 cases on management accounting have been published in this journal. It is interesting to note that eight of these cases deal with issues for non-manufacturing companies.

It seems the call to make management accounting more relevant to the real world has brought many more references to real companies and the problems they face into the teaching of the subject. Given the major events of the past 50 years, the possible effects on management accounting today will be addressed in the following section.

3.8 Where are we today?

Right now management accountants seem confused about who or what they are or what the field of management accounting is or should be about. Opinions seem to differ as to whether or not significant changes in management accounting are necessary, but many commentators have stated that management accounting is in a crisis and that fundamental changes are required (Maher, 2000; Gabbin, 2002; Sharma, 2000).

The principal criticisms of current management accounting practices can be summarised under the following headings (Drury, 1988):

* Conventional management accounting does not meet the needs of today's manufacturing and competitive environment where a more holistic approach should be adopted.
* Traditional product costing systems provide misleading information for decision-making purposes.
* Management accounting practices follow, and have become subservient to, financial accounting requirements.

* Management accounting focuses almost entirely on internal activities, and relatively little attention is given to the external environment in which the business operates.

Some of the material appearing in current management accounting textbooks about "new manufacturing" is very similar to the kind of information in the original Cost and Production Handbook (Alford 1934). At the same time that management accounting texts seem to be rediscovering the past, they are also talking about balanced scorecards, strategic cost management, and the theory of constraints. In a way, the texts seem to be moving back to the past and into the future simultaneously.

The change by the Institute of Management Accountants of the name of its flagship publication from Management Accounting to Strategic Finance (refer to section 3.6) indicates that management accounting practitioners think they need a new image. It is not clear just what the new image should be, but a recent study by the IMA about the type of work its members do, showed some interesting trends (Russell, Siegel and Kulesza, 1999). The two most important tasks for IMA members reported in this study are long-term strategic planning and process improvement. The top skills IMA members reported as the most important were computer skills/technology/networks, accounting software, and teaching/speaking/communication. None of these topics appear in management accounting textbooks.

Currently, management accountants seem to be enamoured of average cost computations, as evidenced by the numerous activity-based costing papers discussing the different activities accountants can use as weights for computing average unit costs (for products) and average operation costs (for operations activities). An average cost is still just an average cost, regardless of the number of weights used to compute it; so one can predict that this interest in average costing will fade as accountants realise managers still need incremental costs when making decisions. Most management decisions require future projections of incremental cash flows instead of historical averages of past activities (Burns, 2000; Fowler and Hawkes, 2004).

It seems that management accounting is going through a major shift from its past structure to something else. Since we are in the middle of this shift, it is hard to get a reading on exactly what is happening. If anything does appear to stand out in the confusion and noise of the present, it is that management accountants must learn to understand much more clearly the decisions that managers in their companies make (Binnersley, 1996). Only with a complete understanding of the decisions managers make will the management accountant be able to create meaningful analyses of decision alternatives. Understanding company strategy is critical to the creation of meaningful management accounting systems: a management accounting system that supports company strategy creates value, but a management accounting system that ignores company strategy destroys value. A value-creating management accounting system directly supports the decisions of managers as they work to implement company strategy.

Companies needed accountants in the past because they were the only group with the numerical skills to provide the financial analyses managers needed for decisions; however, spreadsheets now enable any manager to do his or her own analyses. If the management accountant does not directly contribute to the value of the decision-making process, company managers can hire individuals with training in, say, economics, and have them prepare the analyses the managers need. The accountant is no longer indispensable. By focusing on problem-solving skills and the organisational context of decisions, rather than the facts of management accounting methods, educators can help students to be creative problem solvers who add substantial value to their organisations (Boyce, 2004; Mulder, 2000).

3.9 The future of management accounting education

The future of management accounting teaching and practice will be different from the present or the past, and technology will be one of the primary driving forces in this change in management accounting. The nature of management decisions is also different from what it has been in the past, so management accountants will have to shift away from a somewhat static cost orientation to a more dynamic cash-flow orientation (Parker, 2002; Gabbin, 2002). The impact of technology, the importance of dynamic cash-flows and the growing number of service organisations, on the future of management accounting education and practice will be discussed in the following four sections.

3.9.1 Technology

Technology will enable managers to do for themselves what accountants did for them in the past (Maher, 2000). Fifty years ago managers relied on the management accountant to do calculations because the management accountant was skilled at manipulating and processing numbers. Today, every manager has a desktop computer running spreadsheets and databases that permit a quick manipulation of data for a wide variety of analyses, from pricing special offers to evaluating make-or-buy decisions. The management accountant is no longer needed for his/her computational skills - the computer has taken over this function (Gabbin, 2002; Bromwich and Bhimani, 1994).

In this environment, the management accountant will survive only by adapting to the changing surroundings. Management accountants can add value to an organisation by becoming consultants who help managers structure financial analyses so that these managers can make reasoned decisions about the use of company resources (Parker, 2002). Using their knowledge of data collection and processing systems within the company, the management accountants of the future will help managers interact with the system to minimise the time a manager must spend on creating analyses (Russell and Kulesza, 2000). The management accountant will help managers define problems, identify relevant data for analysing problems, suggest sources of data from the various company systems to help with the analysis, and locate external data sources for information on e.g. commodity prices and competitor sales (Burns, 2000).

Burns (2000) supplies the following example: Suppose a purchasing manager at an airline must decide how much fuel to purchase each time a plane lands at an airport. The purchasing manager must balance economic factors, such as fuel cost, against supplier relations to make sure that a small cost reduction does not harm a fruitful supplier relationship. Fuel prices can vary from one airport to another so that loading up on cheap fuel can sometimes pay. However, the extra fuel a plane carries adds to its weight, which causes it to burn additional fuel. In this case the management accountant uses his or her knowledge of financial analysis to help the manager design a model that balances the added cost of carrying the fuel against the reduction in the price paid for the fuel. This model includes a function relating the fuel burn rate for each plane to the weight of the plane. Next, the management accountant reviews the systems the airline uses to track fuel levels on planes and the current price for fuel at various airports. She/he combines the data from this system with the model to display information to the purchasing manager that allows him quickly to choose the amount of fuel to purchase for each plane when it lands. In this instance the management accountant used his or her knowledge of company systems and computer modelling to create a tool that allowed the purchasing manager to focus on buying decisions instead of on analysing the data for these decisions.

For reporting, the management accountant will develop personalised reporting systems tailor-made to fit the needs of each manager. One of the management accountants for a multinational firm located in Nashville has developed a system in which each manager effortlessly receives the financial information of interest to him or her. The manager loads into a spreadsheet a file the company transaction processing system prepares each week. The spreadsheet holds, for example, all the

company sales data, but presents to each manager only the sales data for which that manager is responsible. The management accountant, using Visual Basic, has developed a personal menu bar for each manager. This menu bar has a list of the various data the manager might want to review, and the manager can click on the specific list of data he/she wants. This brings up a spreadsheet or a graph depicting the data. Every manager has a different personalised menu bar.

In this case the management accountant used his skills to identify the information of interest to each manager and then built a tailor-made spreadsheet to present to each manager only the information that manager needed. The accountant devoted significant effort to creating the first spreadsheet, but the additional spreadsheets required little effort because the original code could be easily modified to fit the specific needs of other managers. Some managers wanted graphical reports, some tabular, and some analyses of the data. The management accountant personalised all these items for each manager (Burns, 2000).

This approach to information/presentation/personalisation probably will become much more common in future, and it has implications for the way management accounting is taught (Boer, 2000). It requires that students be trained to become much more adept at designing alternative ways of presenting information to managers; more time should be spent in the classroom discussing the advantages and disadvantages of different information presentation models. The principles of graphical representation of data, the format of tabular presentations, and the implications of how managers actually use data will become much more important in teaching management accounting in the future. Management accountants will have to be trained to focus

more on the user interface with the system and less on how the system processes data (Boer, 2000).

3.9.2 Database capabilities

Another form of technology that has a significant impact on management accountants is the widespread adoption of database management systems. These systems enable companies to capture data at a micro level for later reassembly into blocks of usable information. Staubus' (1971) Activity Costing and Input-Output Accounting proposed an accounting system that captured data on input and output activities at a very detailed level.

For example, a sales transaction might include information on these items:

* Date
* Customer identifier
* Product identifier
* Ship-to address
* Distribution channel
* Mode of shipment
* Quantity shipped
* Special sales terms code
* Special credit terms code
* Salesperson

A cost transaction might include data on:

* Date
* Customer identifier
* Product identifier
* Expense code
* Approval code
* Location code

With the use of these data a management accountant (or manager) could extract information on revenues or costs traceable to a customer, a product, a salesperson, a region, or a distribution channel. Decision-makers who want information on the relative value of items shipped by mode of transportation can get it as readily as information about which customers are the heaviest users of price discounts. Modern database software (e.g., Oracle, PeopleSoft, or IBM's DB2 for large enterprise systems, or Microsoft Access for personal computers) allows management accountants to extract anything the system has captured in any format that makes sense to the manager.

Because of the ease of data retrieval from databases, management accounting teachers should spend more time helping students think about what data to capture for each transaction (Boer, 2000). If a company captures the correct data, it is easy to do analyses using the data later. In fact, companies can keep the data at the transaction level and accumulate it only when needed, i.e., a company could generate a general ledger only when it needed one instead of producing it monthly. The same holds true

for other management reports: the system would generate a report only when the manager requested it. In this kind of world, management accountants create a personal menu of reports specifically tailored to a manager's needs, and the system extracts and compiles the data from the database only when the manager requests it. The system provides just-in-time reports. In fact, the accountant can build rules into a system that causes the system to produce manager-specified information whenever one or more predefined events occur (Burns, 2000).

The personalisation of information presentation made possible by this software enables managers to implement the notion of "different costs for different purposes" described by Clark (1923) and Vatter (1954) and the multiple cost systems described by Kaplan (1988) with ease. Kaplan argues that managers need systems to present information: to external users (like investors); to managers for operations decisions; and to managers for product cost review. Each approach requires a different arrangement of data, and the database system enables management accountants to prepare any analysis a manager wants economically, if the system collected the appropriate data in the first place. Arranging cost data into different groupings so that managers can use alternative cost summaries for different decisions also requires that the data be captured at the appropriate level of detail when the transaction occurs. This is why it is so important for management accounting teachers to develop in their students the skills needed to help managers identify the data elements that should be captured with each transaction.

Part of a management accounting course should be to use this approach, and students should learn to extract the data they need from a database instead of reading it from a printed report. They work with "numberless accounting problems". Any data they need they must select from a database of transaction data. These exercises would require students to define what they would need for solving a problem instead of trying to take data from a printed report and figuring out how to use it (Burns, 2000). They choose the fields in which to search, the ranges to search for, and the logic operations required to extract the data. This helps them understand that real-world data does not always fit the problem they are trying to solve, and it requires them to think about what data they need before trying to draw information from the database (Burns, 2000). It also means they must ask the question, "What cost data do I need to prepare an analysis for the question asked by this manager?" They must make operational the idea of "different costs for different purposes".

The database approach to teaching management accounting also makes it relatively easy to demonstrate to students the concept of marginal analysis. Dropping a customer means all revenues and costs related to that customer go away. It is easy to demonstrate this by selecting all revenue and cost transactions for the customer from the database. The same is true for a product or a salesperson: the student simply supplies the code for the appropriate product or salesperson and receives the total costs and revenues for that item (Kaplan, 1988).

3.9.3 Cash estimates

Management accounting teachers should shift their emphasis from a cost focus to a cash-analysis focus (Fowler and Hawkes, 2004). Much of our cost-analysis material assumes a relatively static world inhabited by organisations with a stable product line or with stable organisations growing at a modest rate. This view of the world holds true for a sizable number of organisations, but there are many organisations today that are growing rapidly, that are adding and dropping products at a blinding pace, and that are constantly changing their organisational structure (Drury, 2000).

Determining product cost for a company with a product life cycle of 12 months seems pointless because the product cost will have little value for managers. Why worry about dropping a product because of its unit cost when the product will be dropped in a few months anyway and replaced with a later version or a completely different product? The crucial decision point for products like these comes before the product is even produced, a time when managers are considering company strategy and customer strategy. That is, the decision locus shifts from deciding which product or customer to keep to deciding which product or customer to add. These are the decisions that determine the future shape of the company. The appropriate form of analysis for these decisions is a cash analysis that takes into account all incremental future cash outflows and inflows associated with alternative strategies (Fowler and Hawkes, 2004).

With a cash analysis, managers consider all factors influencing cash flows without worrying about whether the correct amount of overhead is included or whether the costs are relevant to the analysis (Allen, 2002; Boer, 2000). Cash inflows can come from revenue, sale of inventory, or sale of a plant asset. Cash outflows can be for materials, labour, overhead, asset purchases, or marketing expenditures.

Using this approach avoids sticky issues like: What is overhead cost? How much of the capital expenditures do we include in the unit cost? Does the unit cost for one product receive more overhead than for another product? All these issues are incorporated into the cash analysis. This form of analysis also supports decisions such as customer selection. The management accountant helps managers evaluate the cash flows associated with different customers to determine which customers to add to the company portfolio of customers and which to drop. Again, with cash analysis the management accountant helps the manager identify the cash-flow impact of changing the mix of customers without getting into the knotty problems of trying to determine the "cost" of servicing different customers. Cash-flow analysis makes it easy for accountants and managers to focus on the economic impact of changing customer mix instead of worrying about how to "cost" a customer (Binnersley, 1996).

3.9.4 Service organisations

In the future much more attention should be paid to service organisations in management accounting textbooks as compared to the overall manufacturing focus of current books. A look at the table of contents of seven management accounting books, including the most popular ones, indicates that all but one are still locked in a manufacturing mindset. Job cost, product cost, and cost variances for manufacturing firms and the allocation of overhead costs to products still play a prominent role in the discussions found in these management accounting books. What is needed are books that do not take ideas that worked in manufacturing and apply them to the service industry, but books that are organised around the issues managers of service organisations face. The financial consequences of alternative personnel scheduling regimes, measures of the effectiveness of fixed resource utilisation, and product profitability analyses for products with little or no variable costs are some of the issues service industry managers face (Dearden, 1978).

Yearly more and more Gross Domestic Product in our economy comes from the service sectors and clearly, management accounting educators must begin to address this issue in the material taught. There is so little material about service organisations because it is difficult to make generalisations about them. It can be said with some degree of certainty that service organisations do not have inventory problems, but it is difficult to say what kinds of problems are general to them. Most manufacturing and distribution company activities focus on the movement of inventory through the organisation, but what unifying theme is there for service organisations?

Also, service organisations have idiosyncratic features. Hospitals are very different from banks, and banks are quite different from dry cleaners, but they are all service companies. This explanation may provide teachers with an excuse for not delving more deeply into the teaching of service organisation materials in their classes, but it will not prevent them from becoming less and less relevant to the people who hire their graduates.

To do a better job of teaching management accounting for the service industry, teachers need to improve their understanding of the major decisions service managers make (Boyce, 2004; Boer, 2000). For example, management accounting teachers have a clear understanding of product-mix, pricing, and make-or-buy decisions for manufacturing organisations, but they do not understand the critical decisions that are made by service managers. During the past five years eight cases on issues faced by service industry managers have been published dealing with such diverse issues as capital budgeting for a hospital, incremental cost for a governmental unit, pricing for a dairy, and relevant cost calculations for a movie producer. Educators need many more cases on the service industry, and it is hoped that management accountants will continue to write and publish cases on it so that educators can stay relevant to the companies hiring their graduates (Boer, 2000).

3.10 Conclusion

The world in which management accounting operates is changing - dramatically - and this means how and what students are taught, will have to be modified (Howieson, 2004). However, a look at the table of contents of some current management accounting texts indicates there may need to be further change. The topical coverage of many of these books may have been well suited for students training to be cost accountants before computers were developed, but has little value for students training to be decision support personnel for modern managers. Moreover, the books cover topics cost accountants find interesting instead of issues managers find important. For example, cost accountants compute product costs, but managers evaluate customer selection and customer value; cost accountants do cost allocations, and managers worry about competitive strategies; cost accountants develop budget and cost variances, but managers struggle to modernise and streamline operations. There seems to be a disconnect. The IMA and CIMA changed its monthly publication to Strategic Finance, presumably because it better describes what management accountants do, but what does product cost, budget variances, or cost allocation have to do with financial strategy? If educators want to make their management accounting courses relevant to future managers, they should develop courses that address the strategic issues facing company managers instead of creating courses that cost or management accountants find interesting (Boyce, 2004).

Chapter 4

The development of the questionnaire

The research problem, as discussed in chapter one (refer to sections 1.1 and 1.2), is to identify whether there is a need to change the contents or approach of management accounting education at South African academic institutions and to provide recommendations for improvement.

4.1 Basic considerations

The research, therefore, had to find answers to several questions, as discussed in sections 1.1 and 1.2. For this purpose the questionnaire (see Appendix 2, page 181) was constructed to determine, firstly, whether there is an expectation gap between current management accounting education and what practitioners expect of a management accountant. Secondly, should it prove true, it would provide the opportunity to investigate the most important reasons for the existence of the expectation gap and thirdly to evaluate the strengths and weaknesses of management accounting education at South African universities. Finally, this would indicate possible ways to close the gap so that a positive contribution to the relevance of management accountant education could be made.

The questionnaire, therefore, addresses inter alia various skills applicable in the working environment, techniques used in practice and also the main factors which drive the key tasks of a management accountant.

4.2 Questions asked

The questionnaire consisted of 23 questions, of which the first nine addressed issues relating to the respondent's age, gender, qualifications, job description and the industry in which the respondent is working. The respondents' age is important because the older the respondent is, the higher the chances are of finding an expectations gap between his or her abilities and the skills required to perform the job efficiently. The reason for this assumption is that older respondents may have studied a few years ago, when education could not have prepared them for the requirements of the business environment of today, which can make it difficult to perform the job. The gender of the respondents was included for the sake of completeness. The respondents' qualifications were very important because they will give an indication of the context in which management accounting, as a subject, was included in their education. Since management accounting education for final year chartered accountant students differs from the education for chartered management accountant students, this difference will have an effect on their estimates of the various skills and techniques applicable in business. Qualifications of the respondents would also have an influence on the angle from which the respondents would answer the various questions. Chartered accountants tend to focus more on financial accounting and related issues, whereas management accountants tend to focus more on decision-making issues. Job descriptions would also have an impact on the angle from which the questions were answered, because some job descriptions are very wide and some are more specific, which means that the respondents evaluated the questions from different angles. The industry in which the respondents were working would also have an effect on their opinions due to the fact that, for example, the manufacturing

environment focuses more on costing issues, whereas the financial environment will focus more on financial planning and related financial issues.

Eight questions (the body of the questionnaire) addressed the various skills, techniques and change drivers and their applicability (importance) in the specific working environment of the respondent. These skills, techniques and change drivers were directly related to the literature study described in chapters one, two and three and are listed below. Open-ended questions allowed the respondents to add important issues which they thought the researcher had not covered. These issues are critical for the study because these are the areas where possible changes should be made to enable education to close the gap between education and practice.

The skills, which refer to the various capabilities required to apply knowledge and values appropriately and effectively in a professional context, and addressed in question 10, were the following:

* Communication skills
* Leadership skills
* Strategic and critical thinking
* The ability to integrate non-financial and financial information
* General business knowledge
* Analytical skills
* Ethics
* Control and performance evaluation
* Information technology competence

* Design and maintenance of management information and systems
* Teamwork abilities
* Initiative and self-motivation
* Adaptability (change management)
* Stress management
* Presentational skills

The techniques addressed in question 12 included traditional and non-traditional management accounting techniques as shown in Table 1 on page 73, because both are required to make better decisions (Burns, 2001). A company's size is significant for emerging practices, while industry is significant for traditional practices (Sharma, 2000). They were the following:

* Budgeting
* Costing systems
    - Product costing
    - Life cycle costing
    - Target costing
    - Quality costing
* Formula-based analysis
    - Cost-volume-profit analysis
    - Regression analysis
    - Learning curves
    - Value chain analysis
* Asset management

* Working capital management
* Strategic cost management
* Knowledge management
* Variance analysis
* Value-added accounting
* Activity-based costing
* Total quality management
* Balanced scorecard
* Standard costing
* Economic value added
* Free cash flows

The recommendations of the respondents who answered the pre-testing questionnaires were also included in the final questionnaire. This is the reason for the difference between the skills and techniques listed above and those referred to in chapters one, two and three.

To determine whether the key tasks of management accountants are currently driven by traditional or other factors, the following change drivers were addressed in question 14 (Burns, 2001):

* Information technology
* Organisational restructuring
* New accounting software
* Customer-orientated initiatives
* New management styles
* E-commerce
* External reporting requirements
* Globalisation
* Core competency aims
* Takeovers and mergers
* Quality-orientated initiatives
* New accounting techniques
* External consultant's advice
* Production technologies
* Performance and bonus schemes
* Corporate Governance guidelines
* Brand and customer profitability

The last six questions of the questionnaire dealt with general issues regarding the value of management accountants in business, the education of management accountants and the employment of applicants in a management accounting environment. These questions were very important to gauge the general feeling of the respondents in connection with management accounting education, which will enable the researcher to make final recommendations in chapter six.

Although some of the questions are not directly related to the resolution of the problem statement, they were included nevertheless for the sake of completeness and to address the issue of non-bias response.

Scales of four were mainly used so that the respondents could not give a neutral response, but had to opt for a specific positive or negative opinion on each question.

Throughout the questionnaire the researcher made use of relevant open- and closed-ended questions. The respondents were competent, due to the nature of the sample that was used, i.e. 60 financial managers. Where academic terminology which could be unknown to the respondents was used, a clear definition was given. Questions were short and unbiased. Double-barrelled questions and negative items were excluded from the questionnaire so that respondents could answer the questions quickly and easily. This also played a positive role in the willingness of the respondents to answer the questionnaire.

The questionnaire was compiled only in English, because the respondents were all employees of large South African companies based on market capitalisation. The researcher therefore assumed that all the respondents were comfortable with English as it is the general business language in South Africa.

4.3 Structure of the questionnaire

The questions in the questionnaire were spread out and uncluttered although the questionnaire consisted of only five pages. This meant that the questions could easily be answered without any preliminary training. For replies to closed-ended questions boxes spaced adequately apart or matrixes were used, which looked professional and also facilitated ease of answering and processing. The matrix format increased the comparability of responses given to different questions for the respondents as well as for the researcher. Respondents could quickly review their answers to earlier items in the set, by comparing the strength of their agreement with their earlier responses.

The questionnaire started with clear instructions for completing the questionnaire. The respondents were told exactly what the researcher wanted and that all answers would be treated confidentially.

Three contingency questions were asked, where respondents only needed to answer the applicable question given the outcome of a previous question. This was used properly and facilitated the respondents' task in completing the questionnaire because they were not faced with trying to answer questions irrelevant to them.

The full questionnaire was pre-tested because there is always a possibility of error. Ten people with similar backgrounds and expertise, but who were not employed at any of the large companies in terms of market capitalisation, were asked to complete and evaluate the questionnaire. Valuable information was received which was used to

finalise the questionnaire. No precoding of the questions was done. The questions were numbered from one to twenty-three.

4.4 Method used

Self-administered questionnaires were used because the population under study is adequately literate. Data collection took place through mail transmittal of the questionnaires, accompanied by a letter of explanation and a fax and telephone number. The questionnaire was folded in a particular way to make the opening and reading easier. An identification number monitored returns as they were received. After two months new follow-up questionnaires were sent out, with a new letter of explanation to encourage the return of the new questionnaires. Most of the questionnaires were received via fax and a few were returned via mail transmittal.

4.5 Construction of the sample

Questionnaires were sent to 60 financial directors or managers of the top South African companies listed on the JSE Securities Exchange South Africa, rated in terms of market capitalisation. The reason for using this curriculum was because the top companies would definitely be able to add value to the research problem as they are structured with qualified management accountants and accountants who had studied at various secondary institutions. Companies with head offices overseas were not included in the sample. Holding companies where no normal business procedures were applicable were also excluded from the sample. These companies normally only exist for legal purposes.

Of the 60 questionnaires that were sent out initially, 31 were received immediately and 11 were received after two months when 29 follow-up letters and questionnaires were sent out. In total, 42 completed questionnaires were received from the 60 that had been sent out; this gives a 70% response rate. Some researchers regard anything above a 20% response rate as satisfactory and relatively high. Therefore, a response rate of 70% can be regarded as very high and very satisfactory. Non-response bias may be a problem where the response rate is low and the respondents who did not respond can have an important influence on the aggregate responses. With such a high response rate the risk of non-response bias is very low and can practically be ignored.

4.6 List of the companies which were included in the sample

The questionnaire was sent to the financial directors of large companies (in terms of market capitalisation) listed on the JSE Securities Exchange South Africa. The names in the first column are the company names as listed on the JSE Securities Exchange South Africa. The second and third columns indicate when the questionnaire was received, either with the first (31 companies) or the second round (11 companies). Two companies, marked with "$", were not prepared to answer the questionnaire. These companies are listed below in Table 2:

Table 2

Names as listed on the JSE Securities Exchange South Africa	Received First round	Received Follow up
BHP Billiton plc		
Sasol Ltd	*	
Anglo American Platinum Corporation Ltd		
SAB Miller Plc	*	
Anglo Gold Ltd	$	
Gold Fields Ltd	*	
Standard Bank Group Ltd	*	
First Rand		*
Implats	*	
Remgro Ltd	$	
Nedcor Ltd	*	
Sappi Ltd	*	
MTN Group	*	
Absa Group	*	
Telkom SA Ltd	*	
Sanlam Ltd	*	
Liberty Group Ltd	*	
Bidvest Group Ltd	*	
RMB Holdings Ltd		
Barloworld Ltd		
Tiger Brands Ltd	*	
Imperial Holdings		
Kumba Resources Ltd		*
Johnnic Holdings Ltd	*	
VenFin Ltd	*	
Amal Beverage Industries	*	
Nampak Ltd	*	
Naspers Ltd	*	
Iscor Ltd	*	
Pick ‘n Pay	*	
Woolworths Holdings Ltd		*
PPC Company Ltd	*	
Netcare		
Afrox		*
Dimension Data Holdings		*
Alexander Forbes Ltd		*
Santam Ltd		
JD Group Ltd		
Metro Cash and Carry Ltd		*
Murray and Roberts Holdings		
Massmart Holdings Ltd		*
New Africa Capital Ltd		
Durban Roodepoort Deep		
Investec Ltd	*	
Reunert Ltd	*	

Tongaat-Hulett Group	*	
Aveng Ltd	*	
Western Areas Ltd		
Edgars Consolidated Stores Ltd		*
Foschini Ltd		
Truworths International		
African Bank Investments		
Shoprite Holdings Ltd	*	
Northam Platinum Ltd	*	
Medi Clinic Corporation Ltd	*	
Aspen Pharmacare Holdings		
Sun International SA		
Coronation Holdings Ltd		
Discovery Holdings Ltd		*
Distell		*

The questionnaire and the covering letter are included on pages 180 and 181 to 185 as Appendixes 1 and 2.

Chapter 5

Results

The whole of this chapter will cover the results of the questionnaire, which will be discussed in the same order as that of the questions in the questionnaire (refer to Appendix 2, page 181), starting with question 1 on the age of the respondents.

5.1 Age of the respondents

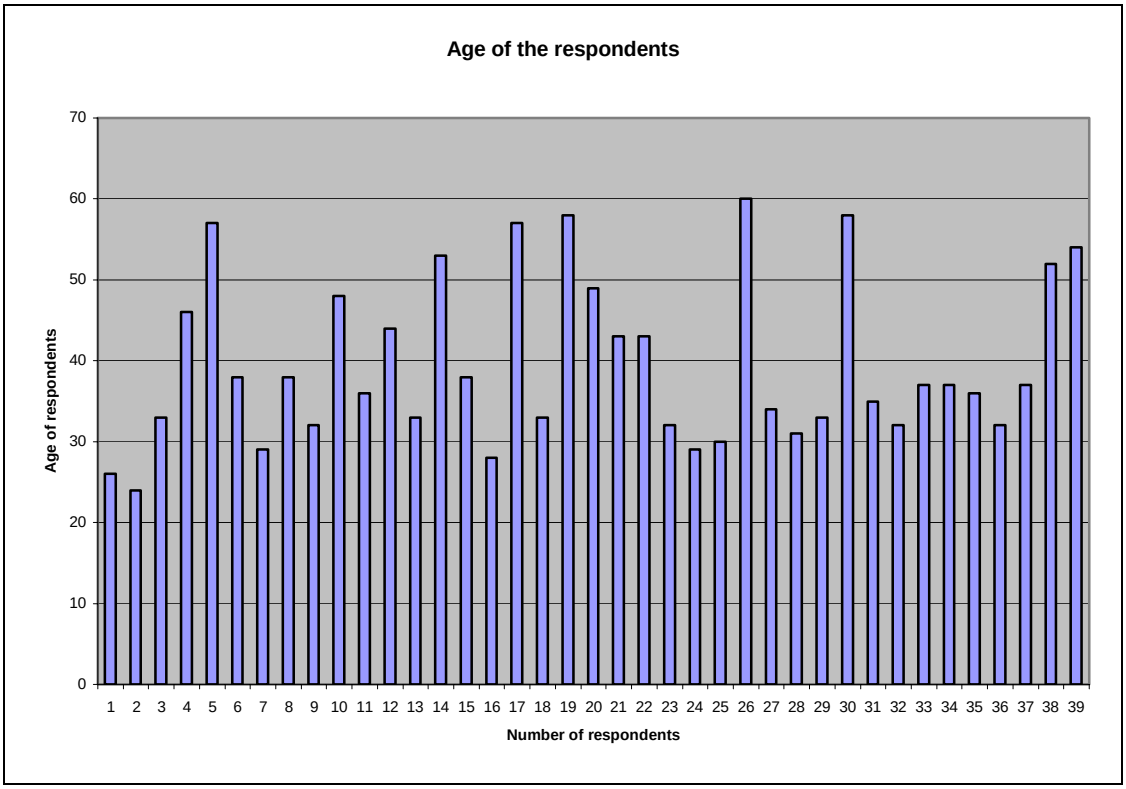
The average age of the respondents was 38 years, with the oldest respondent being 60 years old and the youngest one being 24 years old. This implies that the majority of respondents who studied full-time and started their studies directly after finishing school would have been at a university from 1984 to 1986 or 1987, depending on whether or not they did honours full-time. From 1987 onwards the first full-time Management Accounting honours courses started at those universities which were accredited to the Chartered Institute for Management Accountants (CIMA) in London. Up to 1987 students had had to study through the institute in London in order to qualify as chartered management accountants. Until then, Management Accounting had been included as a subject in either a B.Comm or a B.Accounting degree. No particular attention at South African universities was given to a student who wanted to become a management accountant. The first professional management accountants who had studied full-time at a South African university could qualify in 1987. Those qualified students could then register at the Chartered Institute for Management

Accountants in London to start their practical experience, which normally takes at least three years to complete.

25% (22% UNISA and 3% Damelin College) of the respondents had studied through correspondence institutions, which makes it difficult to evaluate their management accounting education and its relevance to the jobs which they are performing currently. Their studies could have been done directly after leaving school or at a later stage when they found it necessary for performing their job efficiently.

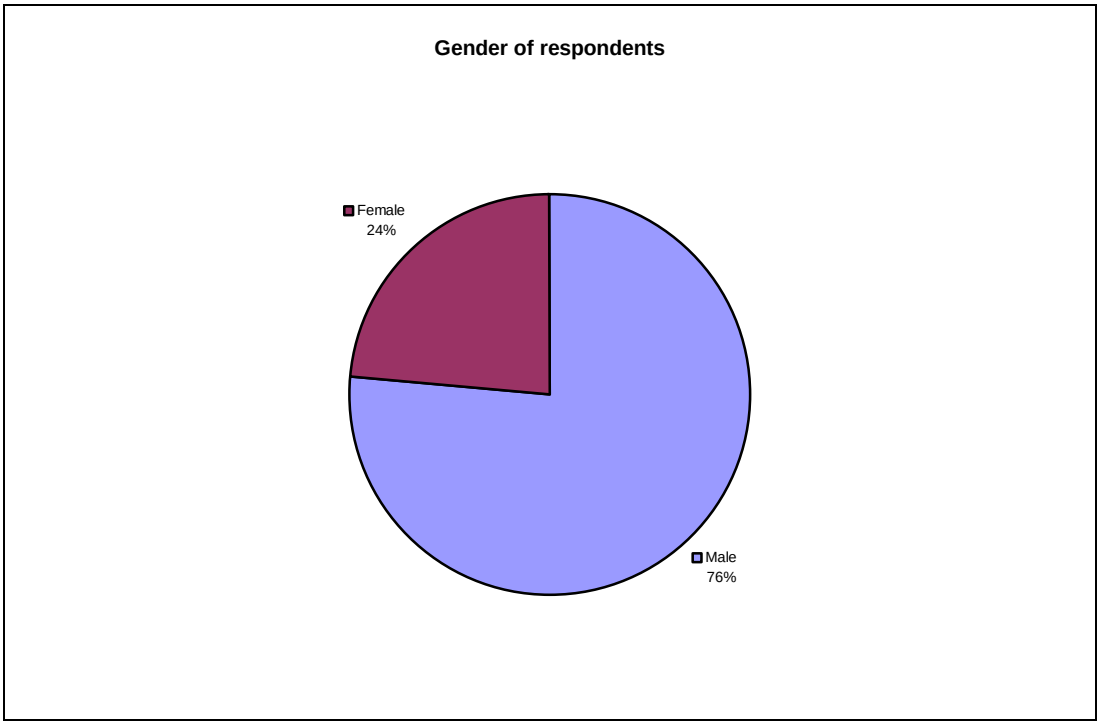
In general, the age of the respondents should give an indication of when management accounting studies were completed. The older the respondents, the more they will tend to perceive a gap between their education and the expectations of the business environment in which they are performing their jobs. The younger respondents, who may have studied recently, will tend to experience a smaller gap between their management accounting education and their job expectations. This is important for the research problem, which concerns, inter alia, the question whether there is a need to change the contents or the approach of management accounting education at South African academic institutions.

The average age of 38 years (refer to first sentence of section 5.1), with a standard deviation of 11, is a good distribution with no bias given by too many older or younger respondents included in the sample. Refer to the graph on the next page for the distribution of the respondents' age.



5.2 Gender

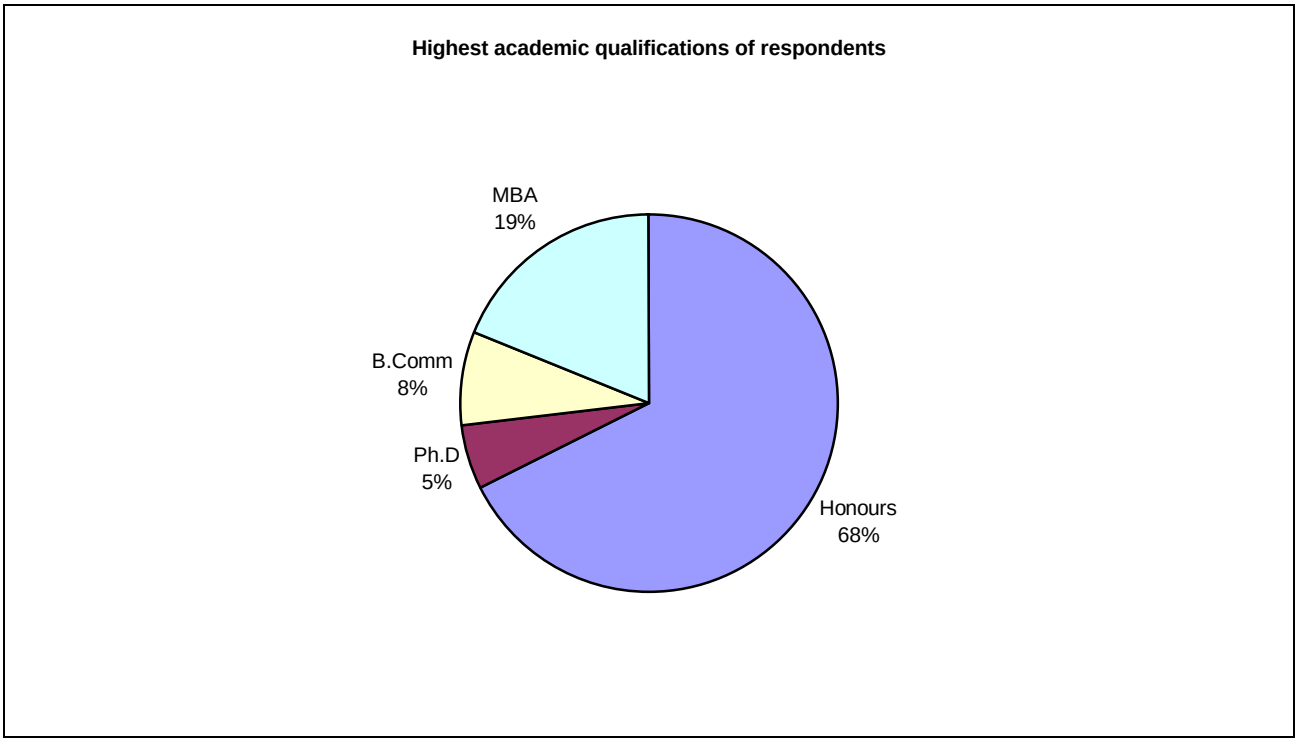
76% of the respondents were male and 24% were female. This gives an indication that males, as included in the sample, occupy most of the top positions in the top South African companies. This information is not relevant for the research problem and was only included in the questionnaire in order to cover all aspects. However, it is good news to see that females do occupy 24% of top positions in the financial sector, which has until recently been regarded as a completely male-dominated environment. Refer to the pie chart on the following page for the gender distribution of the respondents.



5.3 Academic qualifications

68% of the respondents have obtained an honours degree, 5% a Ph.D. degree, 8% a B.Comm degree and 19% a master's degree (refer to the pie chart at the end of this section). Only three of the respondents indicated that they had no academic qualifications, which means that they are performing their jobs on experience gained over the years. The fact that 8% of the respondents have a bachelor's degree only implies that such respondents do not have professional qualifications, because to obtain a professional qualification in the financial environment they should at least have an honours degree. All of the masters' degrees were Masters in Business Administration (MBA) degrees, which equip students with a broader view of business and during the course of which practical case studies are incorporated in most of the subjects studied. This is important information, because it means that those respondents saw the MBA degree as an option to broaden their business knowledge

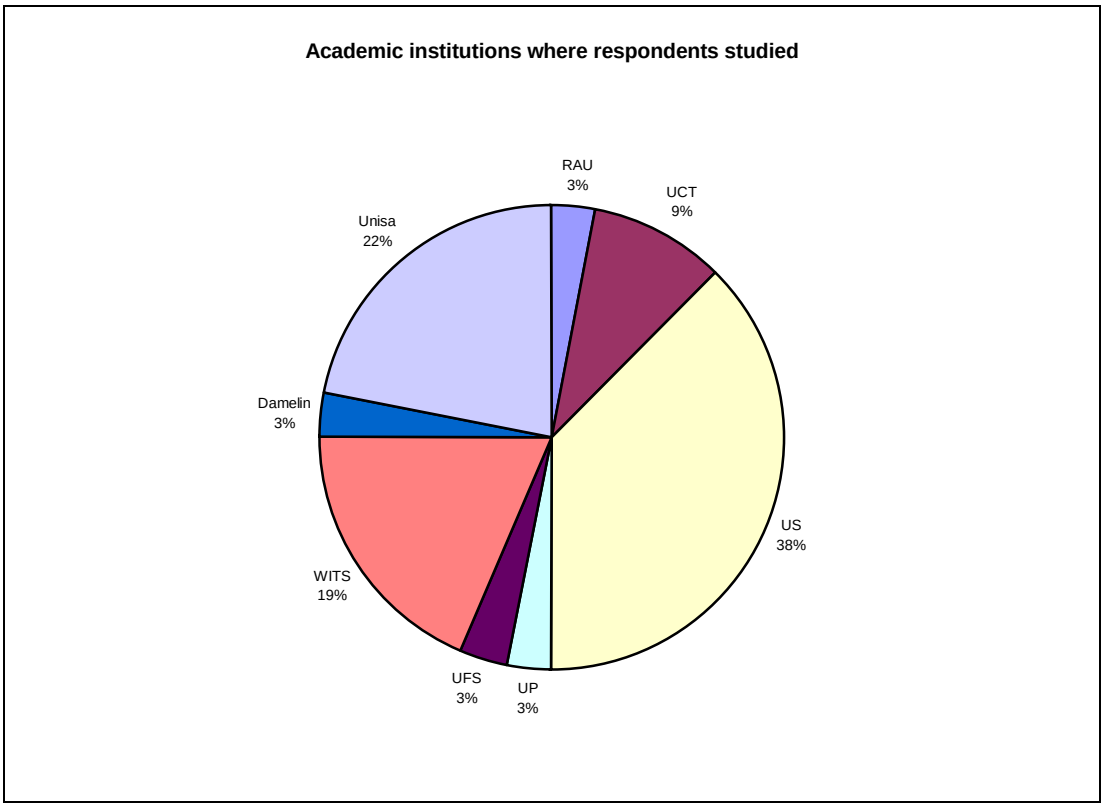
and to get more practical exposure in order to perform their jobs better or to qualify them for a specific promotion. This is also important for the research problem, because it gives an indication that those respondents felt that they needed more education to be able to perform their jobs efficiently. If this is the case, it means that the contents or approach of management accounting education should be adjusted.



5.4 Academic institutions

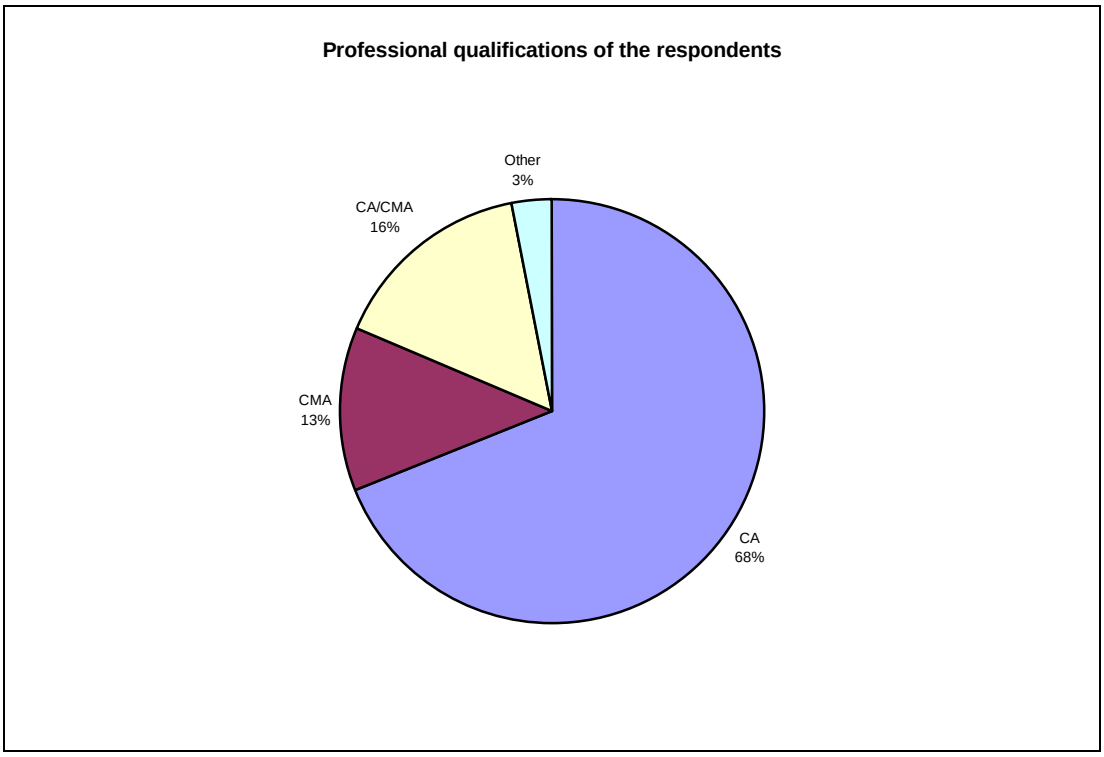
38% of the respondents graduated at the University of Stellenbosch. 22% of the respondents studied at UNISA and 19% at Wits University. 9% of the respondents studied at the University of Cape Town and the rest of the respondents studied at the Rand Afrikaans University, the University of Pretoria, the University of the Free State and Damelin College (refer to the pie chart at the end of this section). All these universities are obliged to do the SAICA and CIMA syllabi if they train chartered

accountants or management accountants, which is the target group for the research problem. This means that if any changes are recommended it should be incorporated into both bodies' syllabi and therefore at all of the named universities. Damelin College is an independent academic institution with nationally accredited programmes, but does not necessarily have the same education as universities. Colleges focus on a different target market, but as only one of the respondents had studied at Damelin College it will not affect the outcome of the study in a substantial way.



5.5 Professional qualifications

The pie chart following this section demonstrates that 82% of the respondents had obtained a professional qualification and 18% had no professional qualification. Of those professionally qualified, 68% were chartered accountants, 13% were chartered management accountants and 16% were both chartered accountants and management accountants. 3% had other professional qualifications.



Possible reasons for the relatively high percentage of chartered accountants included in the sample could be one or more of the following:

* Financial directors of top companies must be highly skilled people. The qualification is rated as a top qualification in the financial environment and therefore an obvious choice for students leaving school without exactly knowing what they want to study, given that they satisfy the conditions for the course.

* The qualification has been well marketed and administered throughout the last 40 years, which means that a large number of people are aware of the capabilities of an employee qualified as a chartered accountant.

* It is, in contrast with the chartered management accountant qualification, a South African qualification, which makes it more accessible to South Africans. This also makes it cheaper for South African students, because there is no exchange rate applicable for the payment of examinations or registration fees at the professional body (SAICA).

* Students also believe that the qualification is one where your chances of being unemployed will be less than with other, more general financial qualifications.

* Generally capable chartered accountants earn a good remuneration which makes it an attractive option with students.

Respondents' professional qualifications are important for the resolving of the research problem as it gives an indication of the disciplines where the recommended changes should be implemented.

5.6 Job description

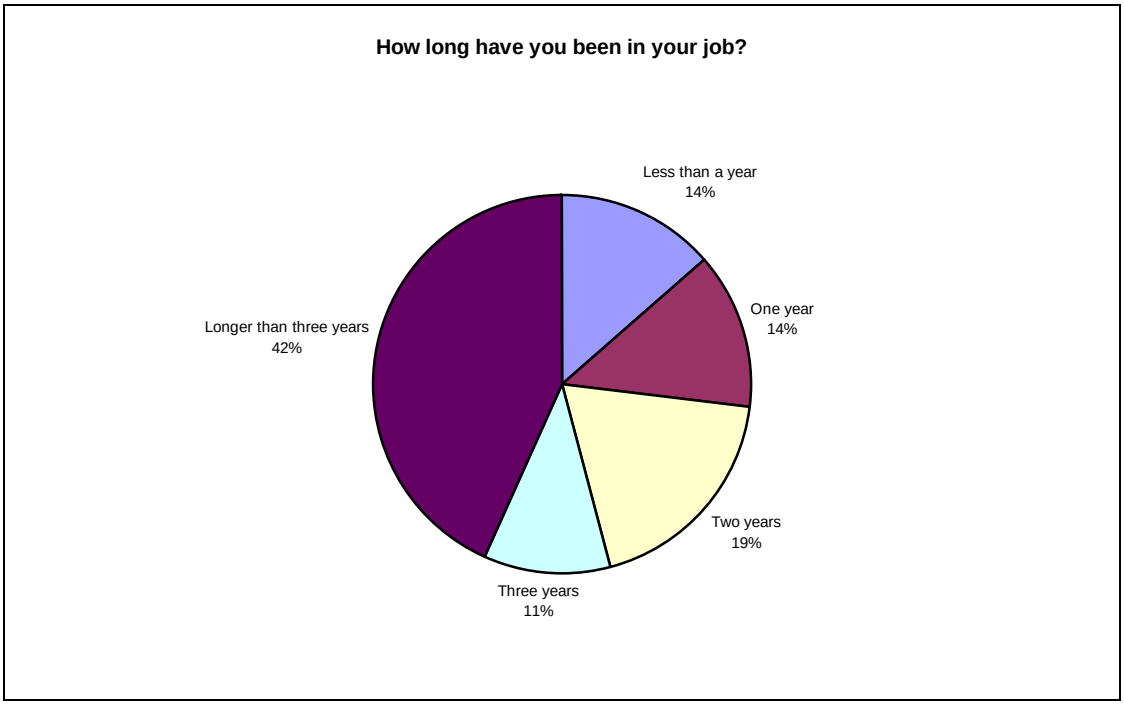
Job descriptions varied a lot and comprised the following:

* chief *financial* officer
* *financial* manager
* *financial* director
* *financial* accountant
* chief executive officer
* group management accountant
* manager: *financial* accounting
* group *financial* executive
* group manager: *financial* planning
* senior director *finance*
* general manager
* commercial banker
* director
* management accountant
* manager: *financial* and management accountant
* general manager: corporate *finance*
* managing director
* accountant
* performance and working capital manager
* group management accountant
* group office accountant

Ten of the respondents had job descriptions referring to a management position in the finance function. The description referring to accountant and management accountant was less popular. The reason for this could be that the term "finance or financial" is a more comprehensive term and can include a lot of functions and responsibilities, including management accounting and accounting functions, to be performed by senior financial employees. The fact that the job description referring to management accountant was less popular can be an indication that the name of the profession is becoming obsolete when describing senior jobs in companies.

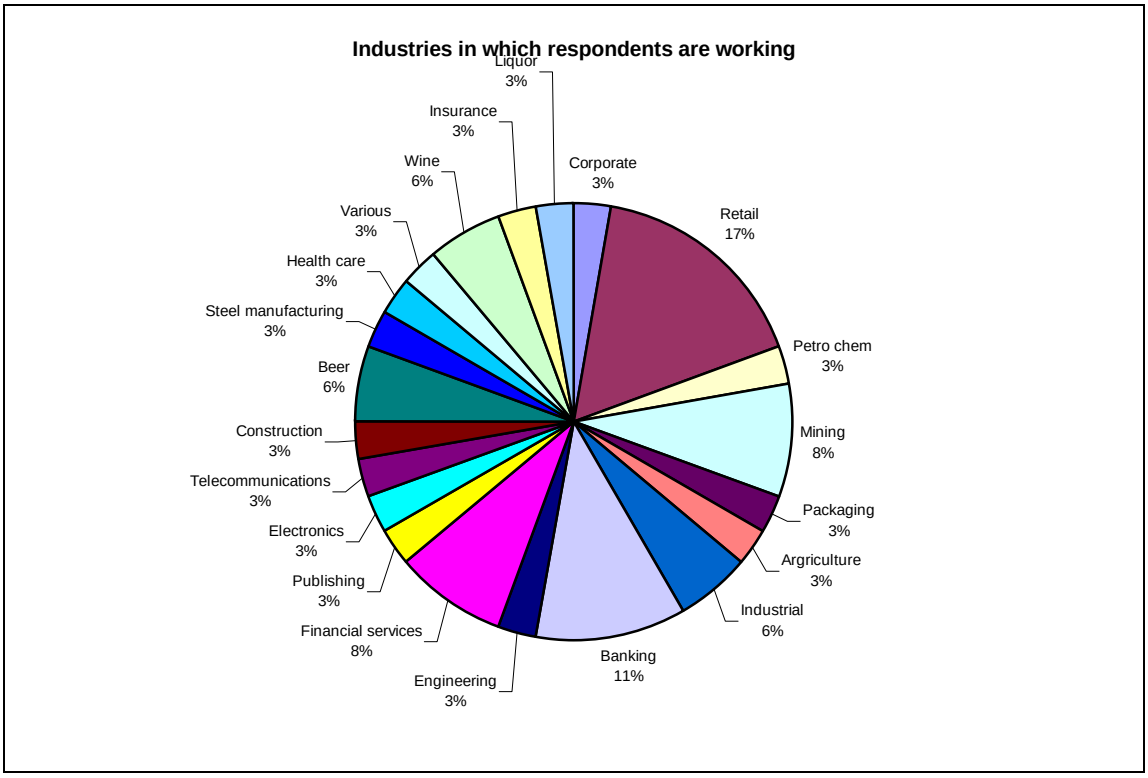
The fact that the respondents' job descriptions covered a wide spectrum encourages the expectation of receiving reliable opinions on whether they experience a gap between education and those skills and techniques required in practice.

53% (42% and 11%) of the respondents had been in his or her particular job three years and longer (refer to the pie chart at the end of this section), which can imply that the respondent is in a relatively senior position in the company. This could also be related to the fact that the more senior the employee position, the more comprehensive the job descriptions and responsibilities of that specific senior employee.



5.7 Industries in which the respondents are employed

Of the 42 companies included in the sample, 17% are in retail, 11% in banking, 8% in mining and 8% in financial services. The other industries include corporate services, petrol chemicals, packaging, agriculture, engineering, financial services, publishing, electronics, telecommunications, construction, breweries, steel manufacturing, health care, wine, insurance, liquor and the industrial sector (refer to the pie chart on the next page).



The sample covered 21 industries in total, which means that no single industry was overwhelmingly represented and could possibly influence the outcome of the questionnaire unduly. Opinions were therefore given from various industries' point of view. This is also important for solving the research problem, as education should be of a standard geared to serve all the industries and not only the financial or manufacturing environment.

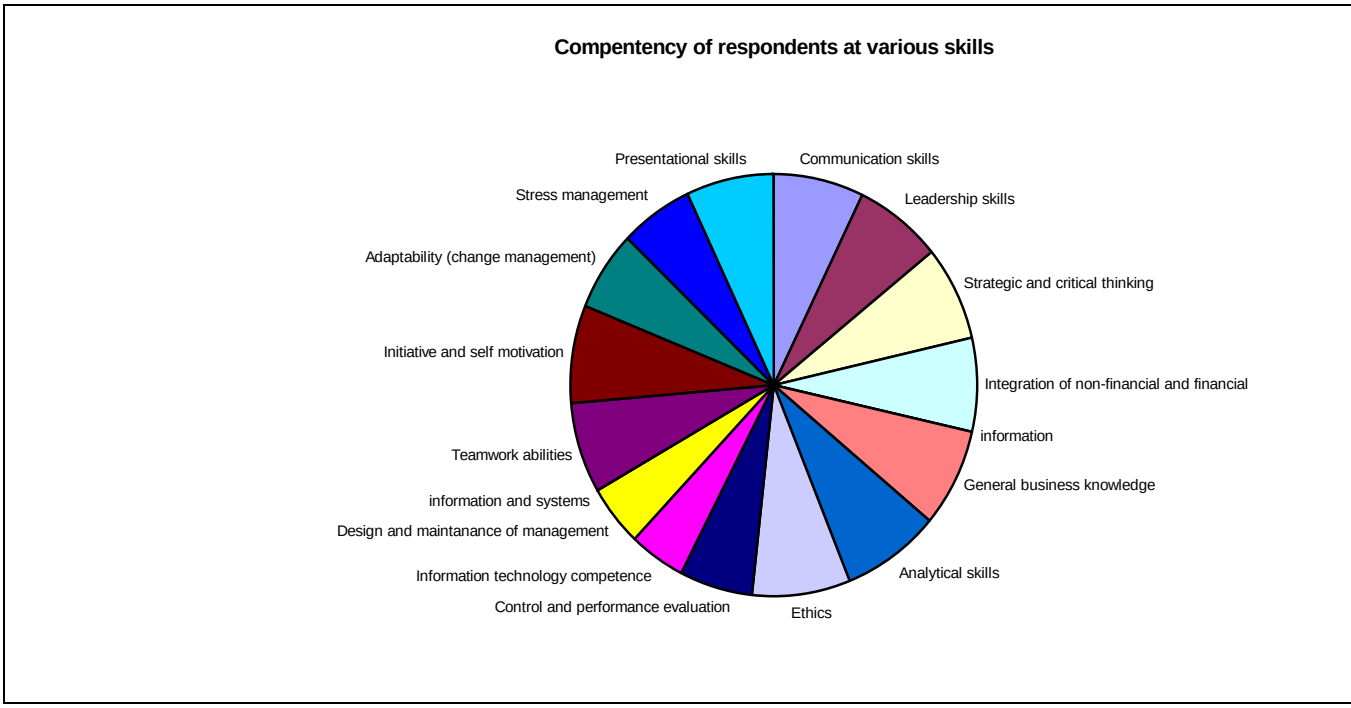
5.8 The degree of competence in certain` skills

The accounting environment is becoming a more comprehensive environment than it was a few years ago, which implies that a wider range of skills is expected from employees. This is a critical point for resolving the problem statement, because education should live up to these changes by nurturing skills that would close the perceived gap between education and practice.

A table of the skills addressed in question 10 of the questionnaire (see Appendix 2, page 181) and respondents' replies are given below.

		Totally incompetent	Incompetent	Fairly competent	Very competent	Not applicable
		1	2	3	4	5
1	. Communication skills	0%	8%	72%	21%	0%
2	. Leadership skills	0%	10%	56%	33%	0%
3	. Strategic and critical thinking	0%	8%	51%	41%	0%
4	. Integration of non-financial and financial information	0%	10%	44%	46%	0%
5	. General business knowledge	0%	3%	49%	49%	0%
6	. Analytical skills	0%	3%	46%	51%	0%
7	. Ethics	0%	0%	41%	59%	0%
8	. Control and performance evaluation	0%	19%	44%	36%	0%
9	. Information technology competence	0%	34%	40%	26%	0%
10	. Design and maintanance of management information and systems	0%	36%	44%	19%	0%
11	. Teamwork abilities	0%	10%	67%	23%	0%
12	. Initiative and self motivation	0%	5%	41%	54%	0%
13	. Adaptability (change management)	0%	21%	53%	26%	0%
14	. Stress management	0%	6%	61%	30%	3%
15	. Presentational skills	0%	11%	68%	21%	0%

100% of the respondents felt that they or their peers were fairly or very competent at ethics. Analytical skills and general business knowledge were second highest at 97%. Initiative, self-motivation and communication skills were fourth at 95%. Sixth highest at 92% was strategic and critical thinking, with stress management at 91%. At 90% were integration of non-financial and financial information and also teamwork abilities. Leadership skills and presentational skills were rated tenth at 89%. The fact that respondents felt that they or their peers were competent at the above-listed skills, implies they received relevant education in terms of these skills and the focus need not be changed in future education programmes. These skills, which the respondents felt competent at, are given in the pie chart on the next page.

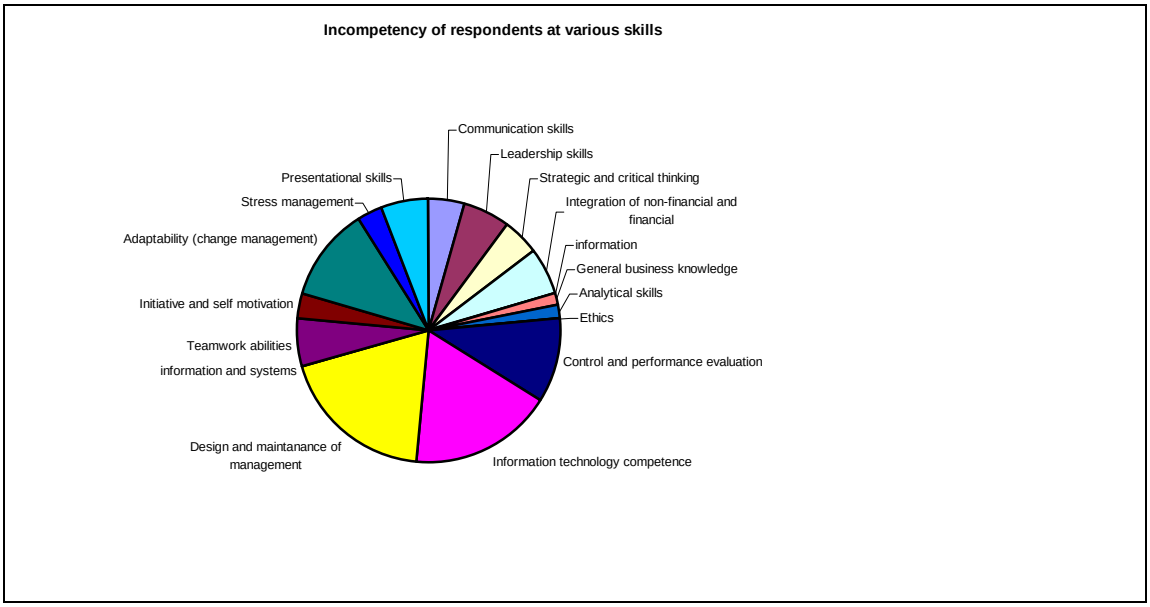


The competency in terms of control and performance evaluation, information technology and the design and maintenance of management information and systems was different, because as illustrated in the table on page 118, 39%, 31% and 34% of the respondents replied that they or their peers were incompetent in terms of these skills (refer to table of skills on the previous page). This is an indication that these skills need attention at some stage. The reason for this incompetence of some of the respondents may be because of difficult and unique information systems used at particular companies, which could have been designed by computer specialists and may be very complex. Another reason for the incompetence could be that the computer literacy of the specific employee is not up to standard and some training or education should be done in-house or during the course of the official studies. Student training may be difficult because of the specialised nature of the specific company's information systems. Computer literacy is included in the syllabi of management accountants and accountants; however, it is very general and cannot incorporate the specific information systems applicable in some companies. The reasons for

implementing merely general computer literacy programmes in the syllabi are firstly, because academics do not necessarily know the scope of the specialised information systems in business; secondly, the time available during formal education is limited and thirdly, the cost and variation of these specific programs used in the business world make it very difficult to incorporate them in the syllabi. Nevertheless students should be trained to become much more adept at designing alternative ways of presenting information to managers and more time should be spent in the classroom discussing the advantages and disadvantages of different information presentation models (refer to section 3.9.1).

The fact that 39% of the respondents indicated that their peers displayed incompetence at control and performance evaluation skills (see pie chart demonstrating the degree of incompetency on page 121), may imply that the employee is not able to see the bigger picture in a certain given scenario. This could also be ascribed to a lack of management information due to poor information systems. The initial design and the maintenance of information systems are expensive and some companies may feel that the investment in information systems is not financially justifiable.

The responses to the question on the skill to adapt (handle change) showed that 21% of the respondents feel incompetent, 53% are competent and 26% are very competent. It is good to see that 79% of the respondents feel competent or very competent at handling change. However, the fact that 21% feel incompetent is a worrying issue because of the difficulty of training students in this specific skill. Adaptability is a difficult skill to evaluate because it can be very personal, depending on the situation.



Other skills, which four of the respondents felt were important and had not been included in the given list of skills, are:

* Negotiation skills and self-confidence.

  Negotiation skills are closely linked to self-confidence because the higher an employee's degree of confidence the better the chances are of his/her handling negotiations well. This is a skill that will develop over time as knowledge and experience increase, and will be difficult to address in a formal education programme.

* The ability to look at the bigger picture (4-quadrant thinking).

  The ability to look at the bigger picture can be linked to the control and performance evaluation skill that was mentioned in an earlier paragraph.

* Time and people management.

  Time and people management skills can be seen in the same light as negotiation skills and self-confidence, which should develop over time where knowledge and experience accumulate. These skills are crucially important, because jobs in the financial environment tend to include teamwork where employees from different areas work together in a multi-skilled team, for example where a project has to be evaluated for a possible investment option.

The evaluation of the different skills is important for solving sub-problem 2, where the most important management accounting skills required by practitioners have to be identified.

5.9 The frequency of use of the techniques

The most relevant management accounting techniques were included in the questionnaire (see Appendix 2, question 12, page 183) and are listed below. Respondents were asked to indicate how often these techniques were used in their organisations, as frequency of usage would help ascertain which techniques are regarded as most important in practice. This will contribute towards the resolution of sub-problem 1, which relates to the identification of the importance of various techniques.

	Never	Once or twice a year	More than twice a year	Very often
	1	2	3	4
1 . Budgeting	0%	36%	25%	39%
2 . Costing systems				
Product costing	35%	27%	11%	27%
Life cycle costing	54%	26%	13%	8%
Target costing	62%	14%	16%	8%
Quality costing	59%	24%	9%	9%
3 . Formula based analysis				
Cost-volume-profit analysis	18%	24%	32%	26%
Regression analysis	71%	11%	13%	5%
Learning curves	74%	16%	5%	5%
Value chain analysis	47%	34%	8%	11%
4 . Asset management	5%	21%	39%	34%
5 . Working capital management	3%	5%	32%	59%
6 . Strategic cost management	16%	26%	29%	29%
7 . Knowledge management	24%	42%	18%	16%
8 . Variance analysis	0%	8%	29%	63%
9 . Value-added accounting	39%	21%	29%	11%
10 . Activity-based costing	68%	13%	3%	16%
11 . Total quality management	57%	24%	3%	16%
12 . Balanced scorecard	55%	16%	11%	18%
13 . Standard costing	49%	11%	19%	22%
14 . Economic value added	37%	24%	16%	24%
15 . Free cash flows	18%	16%	24%	42%

The techniques that were rated as being used more than once a year, and therefore assumed to be important, are the following:

1. Budgeting and variance analysis 100%
2. Working capital management 97%
3. Asset management 95%
4. Strategic cost management 84%
5. Cost-volume-profit analysis and free cash flows 82%
6. Knowledge management 76%
7. Product costing 65%
8. Economic value added 63%
9. Value added accounting 61%
10. Value chain analysis 53%
11. Standard costing 51%

Given these percentages one can assume that the techniques listed above should be included in the training of management accounting students. It is interesting that variance analysis is used by all of the respondents, but standard costing is used often by only 51% of the respondents. This means that those variance analyses that the respondents were referring to do not necessarily relate to standard costing but could refer to other areas where variances can be used, for example variances from forecasts or budgeting.

Working capital management is used by 97% of the respondents and is crucial in any business environment. This technique relates well to asset management, which is used by 95% of the respondents. Working capital refers to short-term asset and liquidity management, whereas asset management refers to a longer period, normally longer than one year. Strategic cost management, used by 84% of the respondents, also refers to a longer period where total costs are controlled and managed.

Cost-volume-profit analysis too, is used very often. This could be due to the fact that costs fluctuate very often, which can also have an impact on prices and therefore profit can be managed through this technique. It is also a popular tool to use with new product lines or new ventures. It is a relatively easy tool, which enables a manager to make a quick decision given that time is a limiting factor in the business environment.

Knowledge management is also important, although it is a difficult technique to teach students. It is becoming more and more important because of the fact that bought-in employee expertise as well as expertise due to experience in a specific discipline, can be expensive when mismanaged. The reason for this statement is that good knowledge/experience of an employee in a specific discipline can be very difficult to replace if the employee decides to resign or is deployed in a job where his expertise is not applicable.

Product costing, which is theoretically seen as an important technique, is rated relatively low at 65%. This can mean that product costing is done by operations managers and not necessarily by management accountants or accountants. This could be due to advanced information systems, which bring detailed information to the whole company and not just to the finance department.

The three techniques relating to value-added issues are used often and this is due to the fact that all businesses try to add value to their product or service. If they did not add value, and managed it, companies would not be able to increase their sales and profits margins. Cost reduction is not always easy to obtain in today's global and competitive environment, and therefore the importance of value-added techniques cannot be overemphasised.

Standard costing is used often by only 51% of the respondents. This is a technique which ought to be highly applicable specifically in the manufacturing environment, yet 49% of the respondents never use the technique. This makes it a debatable point as to whether the time spent on this technique in the current management accounting syllabi should be decreased or not, especially in view of the fact that there are a lot of other techniques which have been or could be included and on which more time could be spent, given their importance as indicated by the table at the start of this section.

The techniques that respondents felt were never used (refer to the pie chart at the end of this section), were the following:

1. Learning curves 74%

   Learning curves are difficult to use in practice, because a lot of information and mathematical knowledge is needed to utilise this technique effectively. It is also applicable only in specific areas, for example where a housing contract for 20 houses is carried out and labour is the main factor which decreases as the employee performs the job frequently.

2. Regression analysis 71%

   Regression analysis is also a difficult technique because of the statistical knowledge and information required for its effective use.

3. Activity-based costing 68%

   Activity-based costing, where costs are allocated according to various activities or cost pools previously identified, is also a technique which is not used very often, although in theory rated as an important technique (refer to section 2.5.5.4). Possible reasons for this could be the amount of data needed in terms of relevant activities, or the differentiated customer needs for multiple products and services, or new production techniques, e.g. JIT.

4. Target costing 62% and life cycle costing 54%

   Target costing and life cycle costing are both relatively new costing techniques. They may, perhaps, be unknown to most of the respondents and

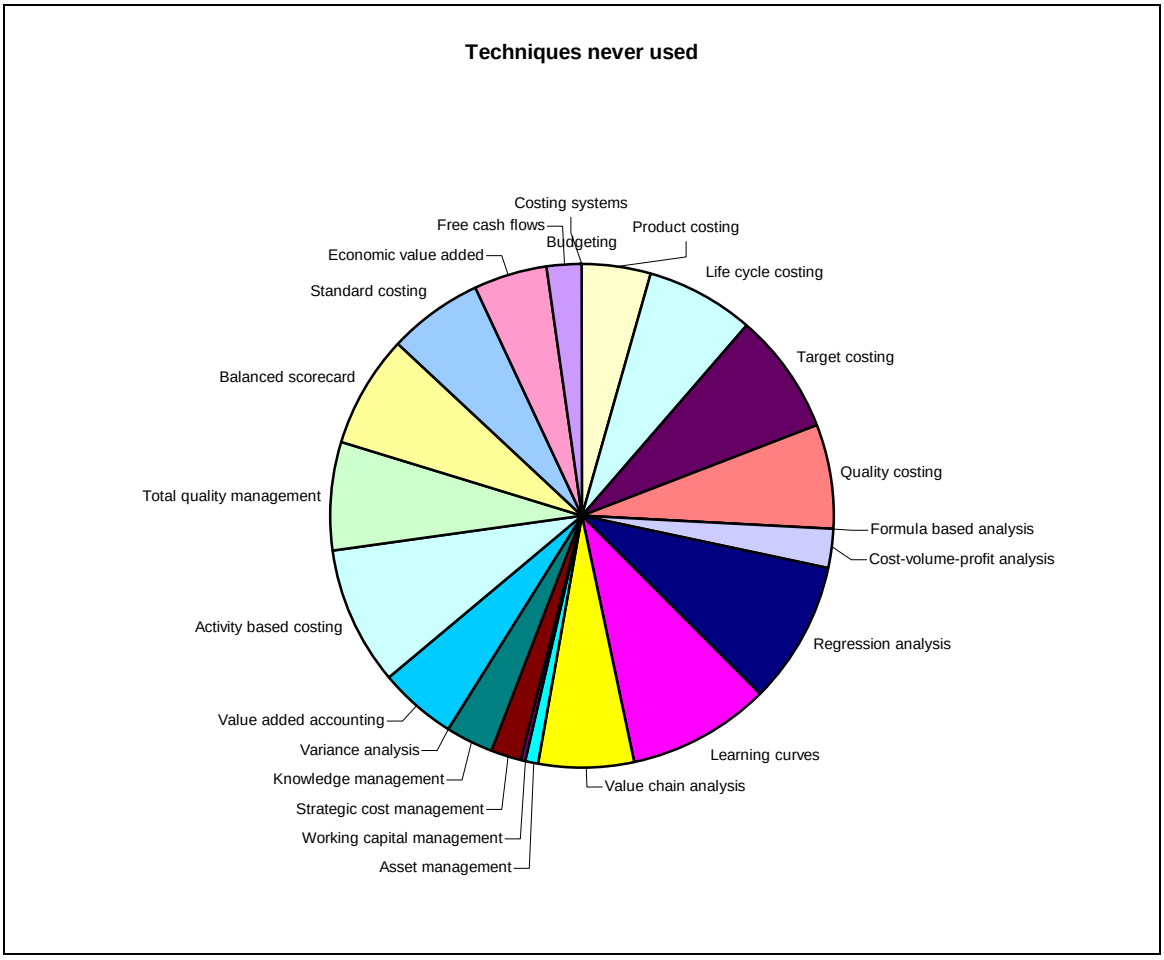
therefore not used often. Target costing is a top-down costing approach where costs are allocated to a product in terms of the selling price of the product. Life cycle costing bases the costing of a product on the entire life cycle of the product, from the research and development stage through to the selling stage.

5. Quality costing 59% and total quality management 57%

59% and 57% of the respondents never used quality costing and total quality management. The reason for this may be the fact that time is always a limiting factor and that the respondents thought that other issues and techniques were more important than to spend time on quality costing. Quality costing and management can also be seen as part of the production department's responsibilities and not that of the financial department's. These techniques are, like ABC, rated by theory as important but are not often used in practice.

6. Balanced scorecard 55%

The balanced scorecard is a technique where the focus is taken away from financial issues. Other issues such as customer service, innovation and employee issues are becoming more important in decision-making and are placed on the same line of importance as financial issues. It is also a relatively new technique and may be unknown to the respondents. It is a typical example of a technique which seems to be important and is included in the syllabi because of the importance allotted to it by educators and the authors of management accounting textbooks, but not regarded by practitioners in the same light.



Other techniques that respondents felt were important but had not been included in the 15 techniques given in the questionnaire were the following:

* Forecasting and designing "what if" scenarios

Forecasting is a modern technique, which is based on budgeting. It is more flexible and is used more often than budgeting. "What if" scenarios are future projections where various outcomes are tested to evaluate the best option, e.g. a budget, an investment decision or a cash flow projection.

* Management accounts

"Management accounts" is a composite term for various sets of information being put together to add value to decision-making done by management. This was included as the skill "design and maintenance of management information systems" and 66% of the respondents felt that they or their peers were competent in terms of this skill.

* Cash flow budgeting and cash flow management

This technique is included in working capital management and is regarded by 97% of the respondents as a technique which is used very often.

* Change management

This is more of a skill than a technique and is included and discussed in the previous section (refer to section 5.8). It is, though, a noteworthy skill as change is the order of the day and employees should be able to deal with change effectively.

* Marginal costing on a product, activity, division and business unit

This technique is included as a section of relevant costing which is included in the management accounting syllabi, and employees should be able to handle marginal costing issues if the applicable information is available.

Valuations of businesses, payback method, ratio analysis, variance bridges, return on capital employed, standard financial indicators and discounted cash flow techniques are techniques which are included in the financial management syllabi. They are, therefore, not included in the context of this research study.

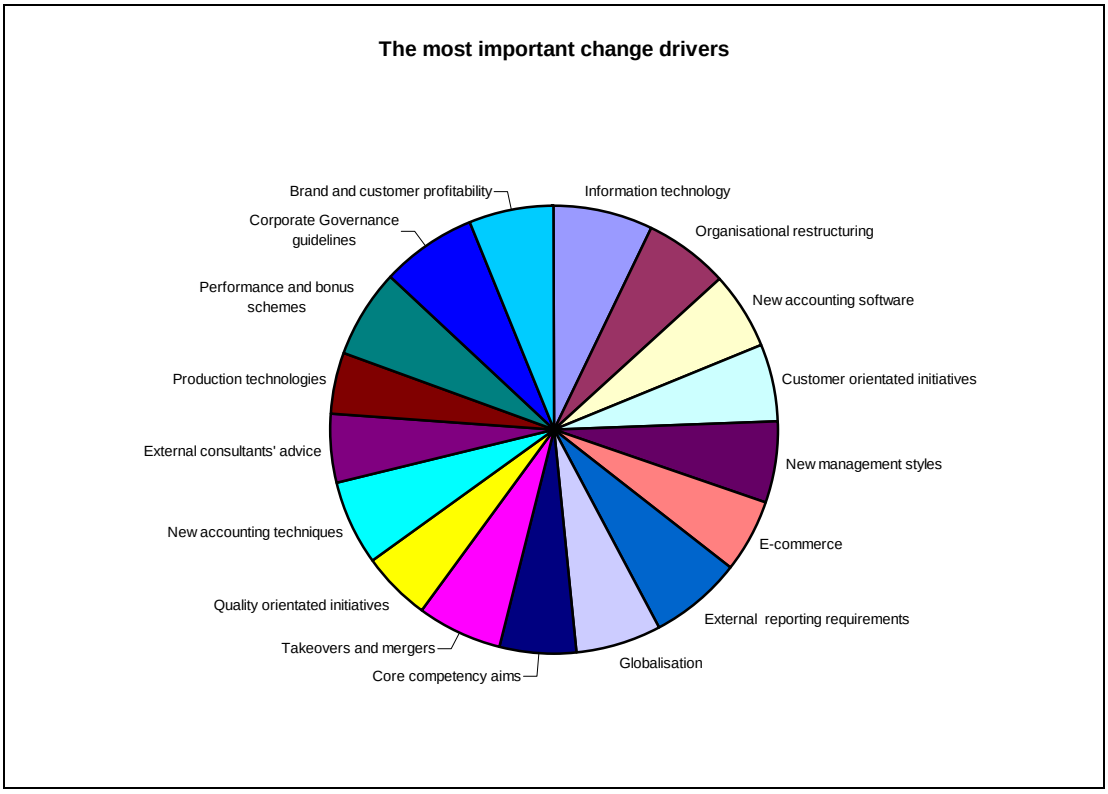
5.10 Indication of the importance of change drivers in the management accounting work environment

Change drivers are considered the factors driving the key tasks of a management accountant and will therefore have an influence on those skills and techniques that practitioners regard as important.

	Not important	Important	Very important
	1	2	3
1 . Information technology	0%	21%	79%
2 . Organisational restructuring	13%	45%	42%
3 . New accounting software	24%	61%	16%
4 . Customer-orientated initiatives	21%	50%	29%
5 . New management styles	14%	54%	32%
6 . E-commerce	24%	46%	30%
7 . External reporting requirements	5%	32%	62%
8 . Globalisation	16%	50%	34%
9 . Core competency aims	19%	46%	35%
10 . Takeovers and mergers	13%	42%	45%
11 . Quality-orientated initiatives	29%	50%	21%
12 . New accounting techniques	16%	50%	34%
13 . External consultants' advice	32%	66%	3%
14 . Production technologies	37%	47%	16%
15 . Performance and bonus schemes	8%	29%	63%
16 . Corporate Governance guidelines	5%	29%	66%
17 . Brand and customer profitability	13%	29%	58%

The most important change drivers, listed according to the respondents' opinions given in the table on the previous page, are as follows:

1. Information technology 100%
2. External reporting requirements 95%
3. Corporate Governance guidelines 95%
4. Performance and bonus schemes 92%
5. Brand and customer profitability 87%
6. Organisational restructuring 87%
7. Takeovers and mergers 87%
8. New management styles 86%
9. Globalisation 84%
10. New accounting techniques 84%
11. Core competence aims 81%
12. Customer-orientated initiatives 79%
13. E-commerce 76%
14. New accounting software 74%



Change drivers that the respondents felt were not very important are the following:

* Production technologies 37%

  Production technologies were seen as a relatively unimportant change driver. A possible explanation could be that production is regarded as a specialist area covered by the specialists in the production department. Product costing was also rated relatively low when respondents had to give their opinion on various techniques in use in their working environment.

* External consultants' advice 32%

Another change driver which was rated relatively low, is the external consultant's advice. Maybe the respondents felt that if a consultant gave advice, he would normally be responsible for the implementation of the advice as well. Another possible reason could be that companies do not use external consultants' advice and rather use in-house specialists to perform specific tasks.

* Quality-orientated initiatives 29%

Quality-orientated initiatives were also seen as a relatively unimportant change driver and the quality-related techniques were also rated relatively low in a previous question (refer to section 5.9) put to the respondents. It could be that quality is seen as a production department responsibility. Another possible explanation could be that companies may feel that if their product has gone through testing in the research and development stage of the product, there is no need for further quality testing. The costs attached to putting quality-orientated initiatives in place may be too high and not worth their while for some companies, depending on the industry they are involved in.

Some other change drivers that the respondents felt were important and that had not been included in the list of 17 change drivers are the following:

* Organising and managing time, effective people management skills and ethics

* Time and people management is not really a change driver, but rather a particular skill that an employee should have. This was addressed in section 5.8.

* Investment management

  Investment management could be seen as a possible change driver, but was not listed here because it is more of a financial management issue and is not covered in this study.

* Corporate strategy, corporate communication, local and international economic environment

  This possible change driver given by the respondents does not need specific attention, because it can be categorised within the Corporate Governance guidelines, which was seen by 95% of the respondents as an important change driver.

* Poor information systems and strategic restructuring

  Poor information systems and strategic restructuring are two issues that are embedded in information technology and organisational restructuring, although the respondents felt it was not covered in the given list of change drivers.

* Regulation and legislation

  Regulation and legislation could be seen as a change driver, but globalisation is actually driven by regulation and legislation in various countries and is therefore incorporated in the globalisation change driver.

* Break-even calculations

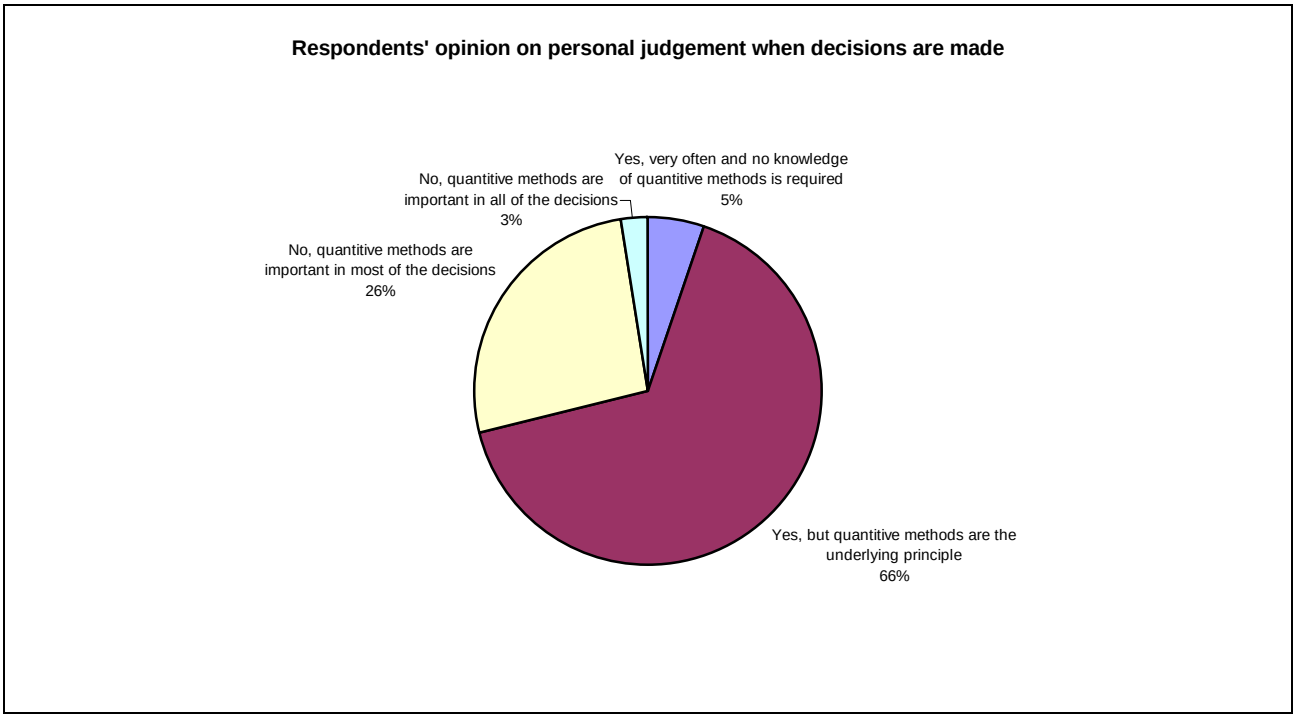
  Break-even calculations is not a change driver, but rather a cost-volume-profit analysis technique. This was rated by 82% (refer to section 5.9) of the respondents as a technique which is used often.

Determining the change drivers is important in resolving the problem statement, because they give an indication of those skills and techniques which should be included in management accounting education in order to accommodate the changes that employees have to face in the modern business environment.

5.11 The importance of personal judgment in relation to quantitive methods when performing tasks that involve evaluations and estimations

When performing tasks that involve evaluations and estimations, practitioners' use of personal judgement as opposed to quantitive methods give an important indication regarding the problem statement as to whether or not quantitive methods are still relevant in decision-making, and how such quantitive methods should be addressed in the syllabi.

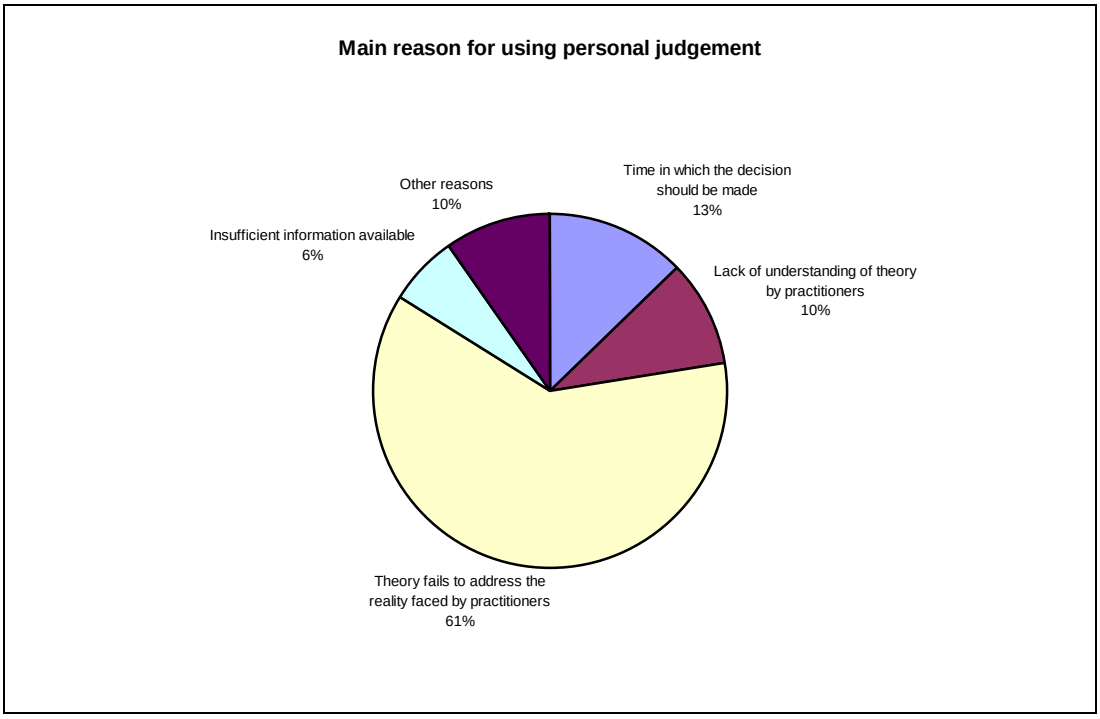
The respondents' opinion on personal judgment (refer to question 16 of the questionnaire in Appendix 2) are presented in the pie chart below:



5% of the respondents felt that personal judgment is very important, with no knowledge of quantitive methods required when performing tasks. 66% felt that personal judgment is important, but that quantitive methods constitute the underlying principle. This gives a total of 71% of the respondents that felt that personal judgment is important. 29% of the respondents felt that quantitive methods are important in most of the decisions and that personal judgment is not as important. The total percentage of respondents who felt that quantitive methods are important, although with or without personal judgment, is 95%. This means that although there were some respondents (5%) that felt that no knowledge of quantitive methods is

required when performing tasks, it is still very important to have the basic theoretical knowledge before entering the business environment.

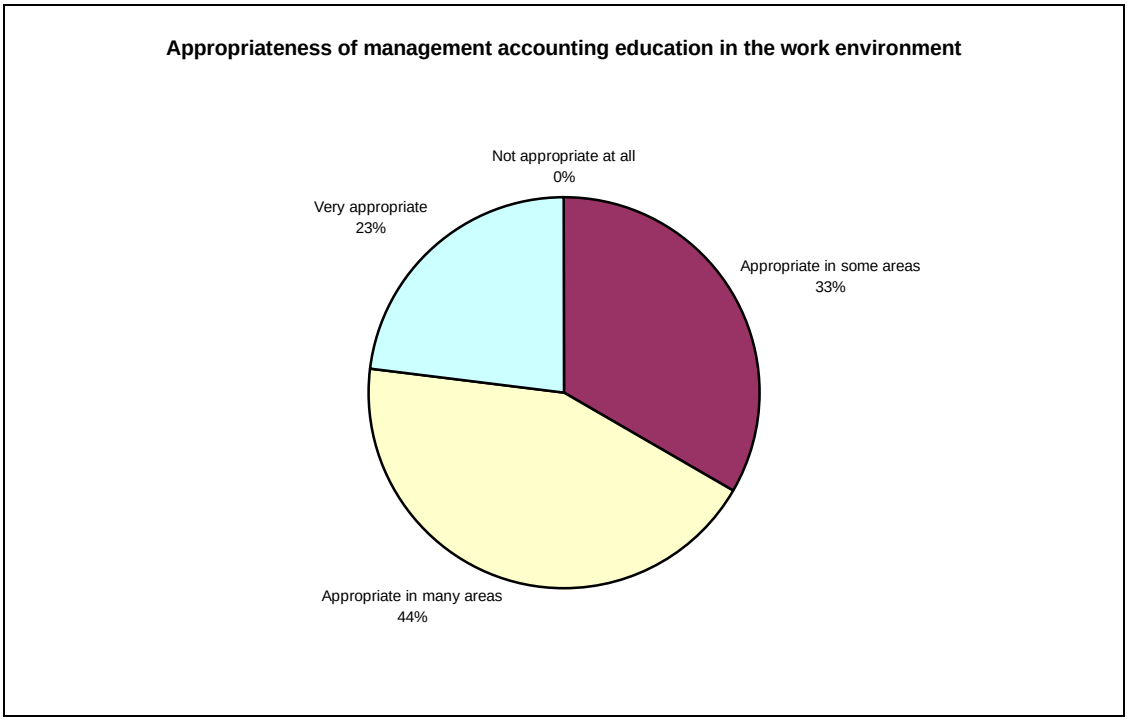
The main reason for 61% of the respondents' answers that personal judgment is more important than quantitive methods is that theory fails to address the reality faced by practitioners. 13% felt that the limited time in which a decision has to be taken is the main reason for not using quantitive methods in practice. 10% of the respondents felt that practitioners lack understanding of the theory and 10% felt that there were other reasons for not using quantitive methods in practice. 6% felt that the reason was the insufficiency of the available information on which decisions are based (refer to the pie chart below).



In conclusion, introducing case studies into the curriculum should enable students to get closer to the reality faced by practitioners. In the next section the appropriateness of management accounting education in the workplace will be discussed in detail.

5.12 The appropriateness of management accounting education in the work environment of the respondents

The appropriateness of management accounting education in the work environment (refer to the pie chart below) is fundamental to the recommendations that will be made in terms of future management accounting education and therefore in resolving the research problem.



33% of the respondents felt that their education was appropriate in some areas only. 67% of the respondents felt that their management accounting education was appropriate in many areas in their work environment. None of the respondents felt that their management accounting education was not appropriate at all.

The fact that 33% of the respondents felt that their education was appropriate only in some areas, means that there is scope for change in the current management accounting education. This supports the problem statement, which seeks to ascertain whether there is a need to change the contents or the approach of management accounting education at South African academic institutions.

Individual word-for-word opinions as to how educators can improve management accounting education to add value to the work environment are the following:

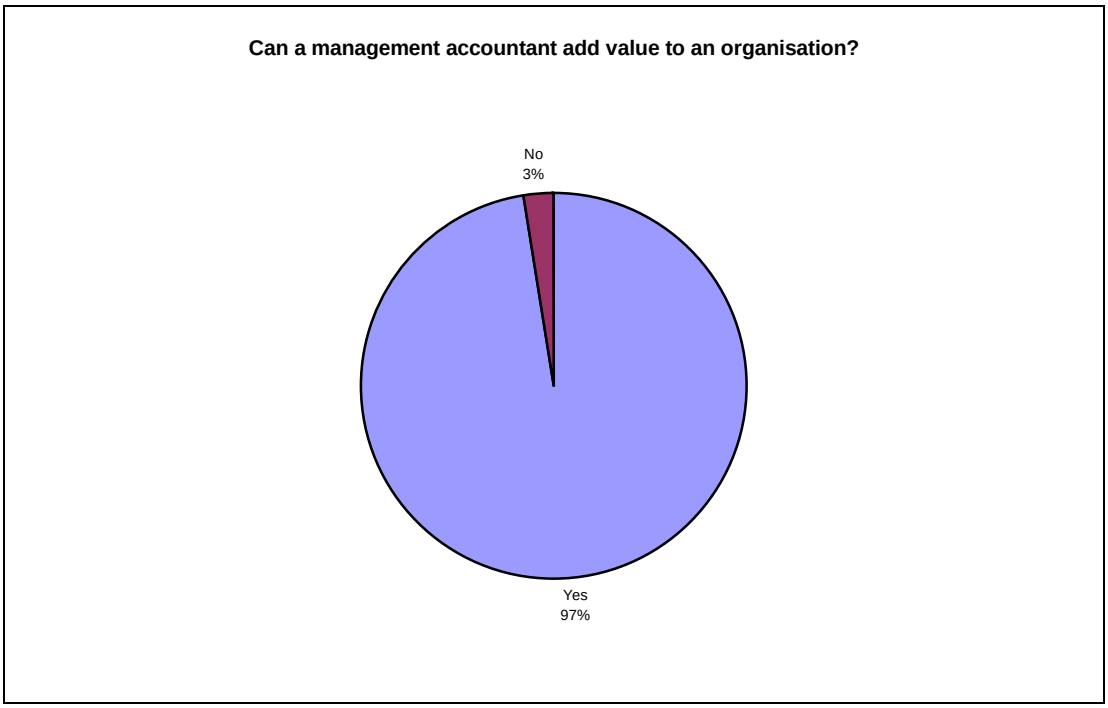
* "More practical application, less detailed theory"
* "Practical based – more case studies on Harvard business school methodology"
* "Improve the practical application of theory"
* "Expand in syllabus"
* "Students must understand the business process"
* "Managerial skills should be taught"
* "Incorporate real business examples, actual case studies"
* "More practical training"
* "More emphasis on budgeting and performance evaluation"
* "More emphasis on the link between financial and management accounting"

The most important issue that emerged in most of the answers was that training should be more practical and more use should be made of case studies so that students should be able to handle typical business situations where clear-cut information is not always available. The recommendation that the syllabus should be expanded can only

be addressed if skills and techniques which are currently included in syllabi are identified as of lesser importance and taken out of the syllabus, or if less time is spent on them. Solving sub-problem 1 of the research problem, as stated in section 1.2 consists in identifying those skills and techniques which could receive less attention in the syllabus in order to add value to management accounting education.

5.13 Areas where a management accountant can add value to an organisation

97% of the respondents (refer to the pie chart below) intimated that a management accountant could add value to an organisation, which is an indication that management accountants still have a very important role to play in the business environment. This is good reason to accommodate the requirements of practice to ensure that management accounting education lives up to the expectations from practice.



The most important areas, as given by the respondents who answered in the affirmative, as to where the value could be added, emerge from the following quotations:

* "Proactive evaluation of the impact and potential benefits of improvement areas in the business environment"
* "Finance function, project evaluation, continuous improvement and initiatives (tracking)"
* "A good management accountant can use the data presented to them to generate information that can be used to make decisions."
* "Investment decision, tracking, performance management, balanced scorecard"
* "Understanding the value business model of an organisation and helping the business to understand the key drivers to increase wealth"
* "Finding relevant, reliable information to enable management to make accurate decisions"
* "Cash flow management, incentive schemes, and performance measurement"
* "To give underlying figures in order to help with decision making"
* "Profit analysis, cost to benefit analysis, price analysis and activity based costing"
* "Identifying cost drivers in a manufacturing environment"
* "Accurate costing, useful analysis of financial data and other data"
* "Assist in providing correct information to assist in making decisions, especially profitability of a decision"
* "Value-added initiatives, standardisations and cost management"

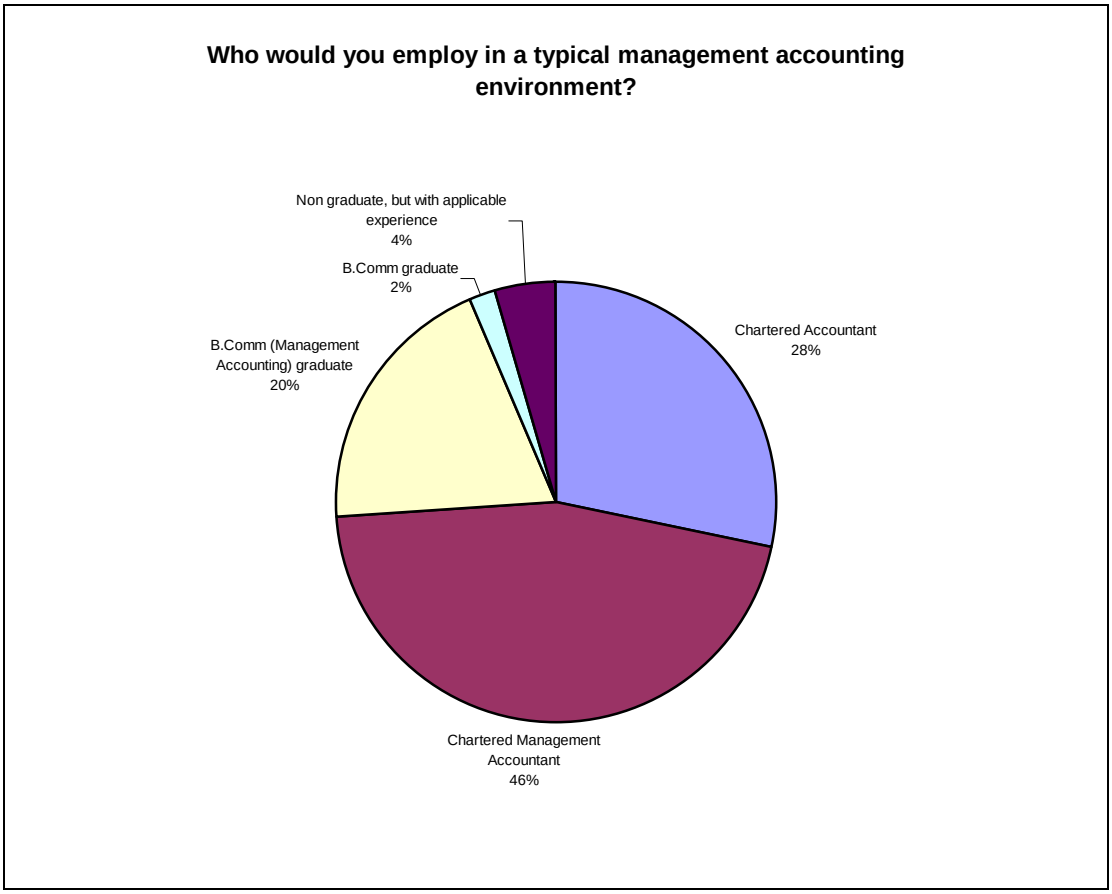
* "Value-added initiatives"
* "Help to understand business better and provide backing to see impact on financials and cash"
* "Product and customer profitability "
* "Financial discipline aspect"
* "Managing profitability of various line items"
* "Analysis to help with strategic decisions, process improvements, investments"
* "Area costing, to determine whether a specific shaft is profitable or not"
* "Provide you with the tools to manage and plan your business on the operational side"
* "Evaluations of options, cost analysis and forecasts"
* "Forecasting, information about future signs, cost strategy"
* "A management accountant can see the total picture and can look objective to problems. Should be allowed to express views"
* "Product costs and new ventures"
* "Support function to corporate strategy, executive management. A person filling holes where needed"
* "Strategic business management, performance evaluation, monitoring of performance"
* "Financial analysis and interpretation, giving advice on appropriate costing systems, pricing policies"
* "Value-added information to make the right decisions"
* "Forecasting and business analysis"
* "Cost control, cost analysis and variance analysis"

It is interesting that none of the respondents thought that quality issues or the design of information systems are important areas where management accountants can add value to an organisation. This corresponds with previous opinions given in relation to quality and the design of information systems, where the researcher assumed it to be a part of some other specialist area in the company. Most of the listed value-adding functions can only be performed if a good information system is in place in an organisation. Throughout the opinions of the respondents it is clear that a management accountant should be able to understand the basic business principles and reconstruct applicable data to information which can add value to any given decision that has to be taken. Specific disciplines such as knowledge of taxation, auditing, accountancy and legal issues are not mentioned in any of the respondents' opinions. It could be assumed that chartered accountants, who are trained more specifically in these areas, will address these issues.

5.14 Employment of candidates in a typical management accounting environment

66% (46% and 20%) of the respondents would either employ a chartered management accountant or a management accounting graduate. 28% of the respondents would employ a chartered accountant and 4% would employ a candidate without any formal management accounting training. 74% would employ a candidate with a professional qualification, in either management accounting or accounting. A noteworthy point is that only chartered management accountant education enables students to see the bigger picture, as 4-quadrant thinking is part of the honours syllabus (refer to CIMA syllabus in Appendix 3, page 186). In all the other options management accounting as

a subject is taught on its own and the focus is on independent principles, techniques and skills, as prescribed in the SAICA syllabus (refer to SAICA syllabus in Appendix 4, page 199).



5.15 Additional comments regarding management accounting education in South Africa

The following are the verbatim opinions of the respondents who answered the last question of the questionnaire (see Appendix 2, page 181):

* "Not close enough to the business environment where they can make a difference as part of the decision-making team"
* "Sound academic training, lack of practical examples in training"
* "On the job training is vital"
* "The CIMA training is fine; it is about finding and encouraging people to develop intellectual and emotional intelligence (IQ and EQ)"
* "CA training is better because of the tax and accounting, which is better than the CIMA training"
* "More emphasis should be placed on management accounting for tools for day-to-day management and future planning"
* "CIMA training is good and keeps up with the requirements of employment in South Africa"

Again the emphasis is on more practical experience, with the positive feedback on the chartered management accounting qualification. During this education a lot of emphasis is placed on 4-quadrant thinking in the honours year and students have to complete three years of compulsory practical experience before registration as a professional Chartered Management Accountant. The opinion on the chartered

accountant training also supports the assumption made earlier that this qualification tends to focus more on specific disciplines like accounting and taxation, which makes them specialists in these areas.

Chapter 6

Solving of sub-problems and conclusion

A solution of the five sub-problems as outlined in Chapter 1 will, at the same time, resolve the basic problem addressed in this study. Identifying techniques and skills required of management accountants in practice (sub-problems 1 and 2) and comparing them with the syllabi used in education (sub-problem 3), will lead to a clearer understanding of the gaps between education and practice, if any, (sub-problem 4), which will enable the researcher to make recommendations regarding the education of management accountants (sub-problem 5).

6.1 The results of the questions relating to sub-problem 1

The focus of sub-problem 1 is to identify the tools and techniques that are important to practitioners and which should be included in management accounting syllabi. These tools and techniques were evaluated in questions 12 and 13 of the questionnaire. An analysis of the responses indicated that the most important tools and techniques, driven by various change drivers (discussed in section 5.10) which have an influence on the key tasks of a management accountant, were the following:

* Budgeting and variance analysis
* Working capital management
* Asset management
* Strategic cost management

* Cost-volume-profit analysis and free cash flows
* Knowledge management
* Product costing
* Economic value added
* Value-added accounting
* Value chain analysis
* Standard costing
* Forecasting and designing “what if” scenarios
* Management accounts
* Cash flow budgeting and cash flow management, where the emphasis is shifted from a cost focus to a cash flow focus
* Marginal costing on a product, activity, division and business unit, where the principle “different costs for different purposes” is applicable

Of these, several are not included in the syllabi, as will be demonstrated in section 6.3.

Tools and techniques that were rated as less important by the respondents are the following:

* Learning curves
* Regression analysis
* Activity-based costing
* Target costing and life cycle costing
* Quality costing and total quality management
* Balanced scorecard

The techniques mentioned above that were rated as important by practitioners, should be included in the syllabi and students should be able to handle these techniques in a confident way to enable them to survive in the changing business environment (refer to section 3.9). The other, less important techniques, should take up less time in the educational timetable, but should still be addressed in the syllabi because these techniques contribute to the rich portfolio of skills required by management accountants. Also, they give a rigour to the examination process that is seen as a challenging "rite of passage" into the profession. Knowledge and understanding of the range of quantitive techniques available to organisations is a powerful differentiator for the management accounting profession, even if the occasions upon which management accountants are required to draw upon much of that knowledge are few and far between.

6.2 The results of questions relating to sub-problem 2

Sub-problem 2 consists in identifying the skills that are required by practitioners. Questions 10 and 11 of the questionnaire aimed to evaluate the competency in the various skills of the respondents, or of their peers, in their companies. Skills that respondents felt fairly confident or very confident of, are the following:

* Ethics
* Analytical skills and general business knowledge
* Initiative, self-motivation and communication skills
* Strategic and critical thinking

* Stress management
* Integration of non-financial and financial information
* Teamwork abilities
* Leadership skills and presentational skills

The fact that respondents felt that they or their peers were competent at the above skills, means that they received relevant training in terms of these skills and that this focus need not be changed in future educational programmes.

Skills that respondents felt incompetent at are the following:

* control and performance evaluation,
* the use of information technology and the design and maintenance of management information and systems and
* adaptability.

Other skills, which four of the respondents felt were important but had not been included in the given list of skills, are:

* negotiation skills and self-confidence,
* the ability to look at the bigger picture (4-quadrant thinking) and
* managing people.

This information relating to the respondents' competency and incompetency with regard to the different skills will help to resolve sub-problem 2, where the most

important skills required of management accountants – not neccessarily those at which they are competent – had to be identified and addressed accordingly in the syllabi.

6.3 The results of questions relating to sub-problem 3

Sub-problem 3 constitutes comparing the findings of sub-problems 1 and 2 with the CIMA and SAICA syllabi. The differences will enable the study to make recommendations in terms of SAICA and CIMA's syllabi and also to make recommendations as to how teaching at the academic institutions could be changed to add more value to the education of management accountants. No question covered this comparison as such, as it will emerge from the study itself. This comparison is done referring to the SAICA syllabus only because it is assumed that the CIMA syllabus is not followed at the South African universities during the undergraduate courses. The CIMA syllabus is only applied during the management accounting honours year, where the final touches are added to qualify as a chartered management accountant. The reasons for this assumption is firstly, that it is too costly to do the basic three year degree in management accounting education for CA's and CIMA's separately and secondly, the SAICA syllabus seems to cover all the aspects of the CIMA syllabus.

The following techniques were included in question 12 of the questionnaire but are not included in the SAICA management accounting syllabi:

* Life cycle costing
* Value chain analysis
* Asset management
* Working capital management
* Strategic cost management
* Knowledge management
* Value-added accounting
* Economic value added
* Free cash flows

Free cash flows and working capital management are included in the financial management syllabus and are therefore ignored for further purposes of this study, as it is assumed that a management accounting student should cover those two techniques in the financial management discipline.

The other techniques listed above, which are not specifically covered in the syllabus, should help the researcher to make recommendations as to how the syllabus (and therefore the teaching) could be adjusted to add more value to the education of management accountants.

Skills are not addressed directly in any management accounting syllabus, but should develop during the student's management accounting studies. It is important though, given the opinions quoted in section 5.8 and summarised in section 6.2, that the focus of education and assessment methods should address the development of those skills which respondents felt incompetent at.

6.4 The results of questions relating to sub-problem 4

Sub-problem 4 focused on finding reasons for the gap, if the questionnaire indicated a gap. Of the 15 techniques listed as important (refer to section 6.1), nine are not included in the syllabi (refer to section 6.3). This indicates that there is a gap between education and the requirements of business. The reasons for this gap will next be investigated.

6.4.1 Reasons for the gap

Possible reasons for the gap are based on the different change drivers which drive and change the key tasks of a management accountant and were addressed in questions 14 and 15. The most important change driver which emerged from respondents' answers and which has had a profound effect on the tasks of a management accountant is information technology. Additional change drivers will also be discussed in the following paragraphs.

6.4.1.1 Change in the profession

In the early 1980's management accountants were employed in corporate staff positions. As staff accountants they were outsiders to the central work of their companies: they were physically separated from the operating department and had relatively little face-to-face communication with the people in line positions. Management accountants were not participants in the decision-making process; instead, they functioned as support staff and were often informed of decisions after the fact (Siegel and Sorenson, 1999: 3). The bulk of their time was spent in the mechanical aspects of accounting, which were any of the following: preparing budgets, checking expense reports, producing inventory cost reports and generating various financial statements.

During recent years, information technological advances (refer to section 3.9.1) have liberated them from the mechanical aspect of accounting outlined in the previous paragraph. They have moved on to work on cross-functional teams, have face-to-face communication with people throughout the organisation and are actively involved in decision-making. Less confidence is placed in the value of quantitive information as an input for decision-making activities and greater emphasis is placed on informal processes and flexibility. They take on leadership in their teams and are much sought-after for the valuable information they provide. They are business partners, which means that they are equal members of the decision-making team. This change in the profession, driven mainly by the advances in information technology and organisational restructuring, could provide a reason for the gap between management accounting education and practice.

6.4.1.2 New value to organisations

The questionnaire used in this study showed that the technological revolution has fostered a new information economy and that management accountants are in heightened demand within their organisations for their expertise, advice and involvement. They are therefore perceived by a growing number of employers, inside and outside the finance function, as adding greater value to the company than they did in the past. This is confirmed, given the answers to questions 20 and 21 (refer to section 5.13), where respondents were asked to name areas where a management accountant could add value to an organisation. Information technology enables management accountants to provide better management information systems, and therefore enhances their value to organisations in terms of decision-making. Management accounting education should take cognizance of the important role played by information technology in practice.

6.4.1.3 Changing work activities

Given the important techniques, skills and areas where management accountants are perceived to add value to organisations (refer to section 5.13), as rated by the respondents, it is clear that analysis and decision-making are becoming more important than in the early 1980's. More time is also spent on non-traditional activities such as strategic planning, internal consulting, process improvement and performance evaluation. Traditional activities such as budget preparation, compliance reporting and producing cost statements are becoming less important and are taking up less of management accountants' time. Management accountants tend to move

into management and away from traditional accounting functions. These changes in work activities are causing a gap between management accounting education, based on traditional activities, and what practice expects.

6.4.1.4 Name of profession is becoming obsolete

The term "management accountant" is prevalent in academic accounting literature, but it is rarely used in practice. In question seven most of the respondents referred to themselves as managers in the finance environment and only a few indicated that they were working as management accountants (see section 5.6). A possible reason for their response is that the traditional accounting functions are rather left to be performed by computer, given the advance in information technology, while management accountants spend more of their time on decision-making and strategic planning.

6.4.1.5 Changing skills for success

The questionnaire indicated important skills for accountants to succeed in the dynamic business environment (refer to section 5.8). These skills are: good communication skills, the ability to work in a team, analytical skills, solid understanding of accounting and clear understanding of how a business functions. Information technology competence is another highly prioritised skill if a management accountant wishes to maintain his/her position in future. These skills have not always received adequate attention in the education of management accountants.

6.4.1.6 Lack of practical experience

The changes in the profession (discussed earlier in sections 6.4.1.3 and 6.4.1.4) from management accounting to management implies that students should be able to see the bigger picture, identify the relevant data for an applicable decision, and have a sound theoretical knowledge to base their decision on. Both chartered accountants and management accountants have to perform practical work before they may become professional accountants or management accountants, but eight of the ten respondents who expressed an opinion (question 9; discussed in section 5.15) as to how to improve management accounting education, felt that more actual business examples should be included in the training of management accounting students. This has not always been possible because of a limited time schedule.

6.5 The results of questions relating to sub-problem 5

Sub-problem 5 deals with making recommendations for changes in education. These recommendations are based on the resolving of sub-problems 1 to 4 and are given in terms of professional bodies, corporations and educators.

6.5.1 Recommendations regarding professional bodies

From the questionnaires it was established that there is a perceived gap between practice and education (see section 6.4). This gap could be reduced if a closer relationship between the professional bodies and the business environment could be developed, which would enable professional bodies to establish more relevant syllabi

with focus being placed on the relevant skills and change drivers as indicated in sections 5.8 and 5.10. A closer relationship should also enable the professional bodies to have a better understanding of what is expected from employees to enable them to add value to businesses. The relationship could be in the form of collaboration, where delegates of the professional bodies periodically met with delegates of the business environment to establish areas where value could be added and, therefore, where education could be improved. Syllabi should therefore be revised periodically according to the recommendations from practice.

Professional bodies should educate the business community about the new role of management accountants and the benefits to be derived from involving them more fully in the decision-making process. By doing this, professional bodies will enhance the image of management accountants.

A new, universally acceptable title for the new organisational role of management accountants should be developed. The term “management accountant” is not often used in practice (refer to section 5.6), as many management accountants say they work in finance. Referring to “management accountant” may result in losing students, who may seek careers in corporate finance, financial analysis or financial consulting, rather than in management accounting.

There should also be continuous communication with accounting students to let them know about the changes in the profession, the evolving role and image of management accountants and what will be expected from them on the job.

Educators should be informed about the changes that have occurred in management accounting and where the profession is heading.

Skills, techniques and change drivers that were indicated by the research to have a fundamental influence on the education of management accountants are listed in the following sections.

6.5.1.1 Skills that should get more exposure in the syllabi

* control and performance evaluation,
* the use of information technology,
* design and maintenance of management information and systems (information/presentation/personalisation) as discussed in section 3.9.1, and
* adaptability (change management).

These skills were discussed in section 5.8.

6.5.1.2 Techniques that should get less exposure in the syllabi

* Learning curves
* Regression analysis
* Activity-based costing
* Target costing and life cycle costing
* Quality costing and total quality management
* Balanced scorecard

6.5.1.3 Techniques that should get more exposure in the syllabi

* forecasting and designing "what if" scenarios,
* management accounts,
* cash flow budgeting and cash flow management, where the emphasis is shifted from a cost focus to a cash flow focus (refer to section 3.9.3) and
* marginal costing on a product, activity, division and business unit, where the principle "different costs for different purposes" is applicable (refer to section 3.9.2).

These techniques were discussed in section 5.9.

6.5.1.4 Techniques that should be addressed in an informal way during the course of education

The most important change drivers that are driving the key tasks of a management accountant are:

* Information technology
* External reporting requirements
* Corporate Governance guidelines
* Performance and bonus schemes
* Brand and customer profitability
* Organisational restructuring
* Takeovers and mergers

* New management styles
* E-commerce
* Globalisation
* New accounting techniques
* Core competence aims
* Customer-orientated initiatives
* New accounting software

These change drivers cannot be included in the syllabi, but they are seen as the factors driving the key tasks of a management accountant (refer to section 5.10). Therefore, they should be addressed in the syllabi in an informal/indirect way so as to ensure that the focus of management accounting education stays in line with business practices.

6.5.2 Recommendations regarding corporations

Corporations should become more involved in the academic community through advisory boards, guest speaker activities, plant visits and by facilitating short-term courses on areas and skills which are not covered in the syllabi or on areas which need more practical application. Working with advisory boards could also help companies to benchmark their internal transactions. In-house or external educational and personal development programmes (training through partnership with academic institutions) will become increasingly important as it will equip staff to manage their professional responsibilities relative to the needs and expectations of the customer base and the more complex business environment.

6.5.3 Recommendations regarding educators

Given that the syllabi are relevant and updated as recommended in 6.5.1, educators should obtain a better understanding of the work performed and how decisions are made in modern manufacturing and service industries (refer to section 3.8). This can be accomplished by meeting with practising management accountants, visiting their companies and, with their help, introducing more practical case studies, especially on service industries (refer to section 3.9.4), which covered 25% of the sample.

To be able to accommodate the extended, more relevant syllabi, the time allocated to management accounting as a subject should be increased. At present, the time allocated to lecturing on management accounting equals half the time set aside for financial accounting. This is a constraint, which directly relates to the theoretical assessment of the subject – there is no time available to relate skills and techniques learnt in theory to the expectations of the business environment. Management accounting is moving away from traditional management accounting activities to a broader area of management. To be able to accommodate a more comprehensive understanding of the subject, more time is needed to incorporate the different skills and techniques required by business. Educators should partner with information technology experts on the one hand, and strategic thinkers on the other hand, to better understand how to teach students the wider and more strategic dimension of the subject (Maher, 2000: 347).

In addition, more time will allow students to do case studies in groups where interaction in the group takes place. This, and related assessment methods, will improve communication skills, presentation skills, writing skills, teamwork skills, 4-quadrant thinking, analytical skills and the ability to understand how a business functions. These skills were top skills as rated by IMA members (refer to section 3.8).

6.6 Conclusion

94% of the respondents indicated that they would employ a chartered accountant, chartered management accountant or a B.Comm (Management Accounting) student in a typical management accounting environment. This indicates that the suggested changes in the syllabi (refer to section 6.5.1) are applicable for B.Comm (Management Accounting) and B.Accountancy students. It is interesting, though, that chartered accountants fulfil an important role in a management accounting environment, as 28% of the respondents indicated that they would employ a chartered accountant. Possible reasons for this could be that chartered accountants are more sought-after and are more known in the business environment than chartered management accountants. The recommendation made in section 6.5.1, namely that professional bodies should enhance the image of management accountants, should inform managers of the value that a management accountant could add to their business. Although the education of chartered accountants focuses more on accounting, auditing and taxation, the suggested changes in the syllabi should also be introduced in chartered accountant education.

The research indicated that no areas should be taken out of the syllabus, but some skills and techniques (refer to section 6.5.1) should get more attention to ensure a sound and relevant education on the theoretical aspects of the subject. The focus should change, provided that case studies on service and manufacturing companies (refer to section 3.9.4) are included in the syllabus, to ensure the practical application of the subject in the business environment (refer to sections 3.7 and 3.8). This will enable management accountants to define problems clearly, identify relevant data for analysing problems, and suggest sources of data from the various company systems to facilitate the analysis. Students should be educated to become creative problem solvers who add value to their organisations (refer to section 3.6).

In conclusion, management accounting is continuously evolving, with the emphasis shifting from a cost determination and financial control focus, to the provision of advice that results in addition or creation of value, to taking part in decision-making and strategy formulation. To enhance this shift from management accounting to management implies that more time should be spent on the development of higher level skills by way of case studies presented by the students. For education to accommodate this need, second and third year syllabi should cover most of the important techniques (refer to sections 5.6 and 6.5.1.1). Less important techniques (refer to section 6.5.1.2) should be covered by way of self-study projects. Third year students should periodically be introduced to case studies which involve the applicable techniques and related skills covered in the second and third year syllabi. The reason for introducing case studies (and therefore higher level skills) in the third year and not in the honours year is because a large number of students enter the business world after graduating without the applicable higher level skills to add value

to their employers. In the honours year most of the education should be done by means of case studies, supported by a detailed self-study programme focusing on the most important techniques and skills as mentioned earlier.

To accomplish this change in focus, Management Accounting should be weighted equally with Financial Accounting with regard to time allocated in the syllabi, which means more time will be available to prepare students to add value in the business environment. Another important aspect is that this changed focus and weight allocation should be introduced not only in Chartered Management Accountant education but also in Chartered Accountant education, since four thousand four hundred and fifty-nine of twenty-three thousand registered SAICA members are employed as auditors in the public sector and the rest enter the business world as financial managers (SAICA, 2004).

Should these evolving aspects of the discipline be introduced in the new management accounting syllabi, management accountants will be equipped with more relevant techniques and skills that should close the perceived gap between education and practice.

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Appendix 1

Covering letter for the questionnaire

15 July 2003

Dear Sir/Madam

I am conducting research on the relevance of the current education programmes of management accountants. Your input is essential to ensure that practitioner views are fully represented in this University of Pretoria doctoral study***. Your input is vital and it will be appreciated if I can get your response. You are welcome to give the questionnaire to any of your colleagues who can complete it for me.***

It will take approximately ten minutes of your time to complete the questionnaire. Your answers will be treated confidentially and will only be used in summarised form (with the answers of other respondents) to enable the formulation of recommendations to improve the education programmes.

The questionnaire can be returned to me in any of the following ways:
Fax: 054 3324580
Post: Box 1915, Upington, 8800

If you have any enquiries, do not hesitate to e-mail me at lizajacobs@mweb.co.za or phone me at 084 585 8691.

Thank you for your time and contribution to the field of management accounting.

Liza Jacobs

Appendix 2

Questionnaire

Questionnaire

Mark your answer in the appropriate block with an "X" or write your answer in the space provided.

1 What is your age?

…….. years

2 What is your gender?

1	Male
2	Female

3 What is your highest academic qualification (degree, diploma or certificate)?

……..

4 At what institution (university, technicon, college, etc.) did you acquire this qualification?

……

5 Do you have any professional qualification(s)?

1	Yes
2	No

6 If you answered yes to question 5, please give the applicable professional qualifications (e.g. CA, CMA, CFA, etc.).

…… ……..

7 What is your current job description?

……..

8 How long have you been in this particular job?

1	Less than a year
2	One year
3	Two years
4	Three years
5	Longer than three years

9 In what industry are you working?

……..

10 Indicate your view of the degree of competence of your peers at the same or other companies in the following skills. A scale of 1 to 4 is used, where 1 represents "totally incompetent" and 4 represents "very competent". Tick column 5 if the skill is not applicable in your work environment.

		Totally incompetent	Incompetent	Fairly competent	Very competent	Not applicable
		1	2	3	4	5
1	Communication skills					
2	Leadership skills					
3	Strategic and critical thinking					
4	Integration of non-financial and financial information					
5	General business knowledge					
6	Analytical skills					
7	Ethics					
8	Control and performance evaluation					
9	Information technology competence					
10	Design and maintanance of management information and systems					
11	Teamwork abilities					
12	Initiative and self motivation					
13	Adaptability (change management)					
14	Stress management					
15	Presentational skills					

11 Are there any other skills or competencies that you feel are important? Please use the space below to give your input.

……..
……..

12 Indicate how often you use the following techniques. A scale of 1 to 4 is used where 1 represents "never" and 4 represents "very often" .

			Never	Once or twice a year	More than twice a year	Very often
			1	2	3	4
1	Budgeting					
2	Costing systems					
	1	Product costing				
	2	Life cycle costing				
	3	Target costing				
	4	Quality costing				
3	Formula-based analysis					
	1	Cost-volume-profit analysis				
	2	Regression analysis				
	3	Learning curves				
	4	Value chain analysis				
4	Asset management					
5	Working capital management					
6	Strategic cost management					
7	Knowledge management					
8	Variance analysis					
9	Value-added accounting					
10	Activity-based costing					
11	Total quality management					
12	Balanced scorecard					
13	Standard costing					
14	Economic value added					
15	Free cash flows					

13 Please list any techniques you are currently using in your work environment and that were not given in question 12.

……
……
……

14 Indicate the importance of the given change drivers(*) in a management accounting work environment. A scale of 1 to 3 is used where 1 is "not important" and 3 is "very important". Choose column 3 if you are of opinion that the change driver should be included in the syllabi of management accounting students.
* Change drivers are considered the factors driving the key tasks of a management accountant.

		Not important	Important	Very important
		1	2	3
1	Information technology			
2	Organisational restructuring			
3	New accounting software			
4	Customer-orientated initiatives			
5	New management styles			
6	E-commerce			
7	External reporting requirements			
8	Globalisation			
9	Core competency aims			
10	Takeovers and mergers			
11	Quality-orientated initiatives			
12	New accounting techniques			
13	External consultants' advice			
14	Production technologies			
15	Performance and bonus schemes			
16	Corporate Governance guidelines			
17	Brand and customer profitability			

15 List any other important change drivers that you think are applicable in your work environment.

……
……
……

16 Do you think personal judgment is more important than quantitive methods when performing tasks that involve evaluations and estimations (eg. investment in new projects)?

1	Yes, very often and no knowledge of quantitative methods is required	
2	Yes, but quantitative methods are the underlying principle	
3	No, quantitative methods are important in most of the decisions	
4	No, quantitative methods are important in all of the decisions	

17 If you answered yes to question 16, what is the main reason:

1	Time in which the decision should be made	
2	Lack of understanding of theory by practitioners	
3	Theory fails to address the reality faced by practitioners	
4	Insufficient information available	
5	Other reasons	

18 How appropriate do you think your management accounting education is in your work environment?

1	Not appropriate at all
2	Appropriate in some areas
3	Appropriate in many areas
4	Very appropriate

19 If you selected option 1 or 2 in question 18, please give your opinion as to how educators can improve the management accounting education to add more value in your work environment.

……
……
……

20 Do you think, given the current business environment, that a management accountant can add value to an organisation?

1	Yes
2	No

21 If you answered yes to question 20, give the most important areas where you think a management accountant could add value to an organisation.

……
……
……

22 If you were to employ an employee in a typical management accounting environment, would you employ a …

1	Chartered Accountant
2	Chartered Management Accountant
3	B.Comm (Management Accounting) graduate
4	B.Comm graduate
5	Non graduate, but with applicable experience

23 Please give additional comments regarding management accounting education in South Africa below.

……
……
……

Appendix 3

Management Accounting – Business Strategy

Syllabus overview

The syllabus emphasises both the importance of the organisation's environment and the role of the Chartered Management Accountant in setting and evaluating strategic options. Differing approaches to strategy are presented as a response to the need to fulfil objectives.

The Chartered Management Accountant can play a major role in enhancing understanding of the relative importance of competitive forces and influences. Once this framework is established, the relative position of the organisation within this setting can be attempted. Then follows the assessment of possible actions to enhance performance within this context, some steps having an external focus (for example, branding and supply chain partnerships), others an internal focus. The question of where the organisation's boundaries should be set is also considered.

The Chartered Management Accountant is a key player in the implementation of strategic plans.
Different approaches to performance measurement are considered, and the inherent problems in measuring a complex organisation are raised.

Aims

This syllabus aims to test the student's ability to:

- evaluate different approaches to strategy formulation;
- evaluate the environmental influences on the organisation and evaluate its position;
- evaluate the role of management accounting techniques in a changing business environment;
- evaluate strategic options and make appropriate recommendations;
- evaluate performance measurement systems for an organisation.

Assessment

There will be a written paper of three hours. There will be two sections: Section A will have a compulsory question based upon a scenario up to a maximum of 50 marks; Section B will contain a choice of questions, normally two from four.

Learning outcomes and syllabus content

12(i) Setting objectives – 10%

Learning outcomes

On completion of their studies students should be able to:

- identify the importance of objectives and objective-setting;
- evaluate and contrast differing corporate frameworks and objectives;
- evaluate an organisation's mission, goals and aims and recommend appropriate changes;
- evaluate different approaches to strategy formulation and recommend the most appropriate approach.

Syllabus content

- The importance of developing achievable objectives for the organisation.
- Competing objectives for the organisation: profit motive, short-term and long-term, sustainable growth, stakeholders and social responsibility. The objectives of not-for-profit organisations are also considered.
- Formulating the organisation's mission, goals, aims and critical success factors.
- The rational model of strategy formulation.
- Other less-formal approaches to strategy formulation, including incrementalism and emergent approaches.

12(ii) Appraising the environment – 25%

Learning outcomes

On completion of their studies students should be able to:

- evaluate the competitive forces in the marketplace;
- evaluate the importance of international issues, including competition, management and regulation;
- explain the role and activities of pressure groups;
- evaluate the availability and quality of data for environmental analysis;
- analyse and evaluate the organisation's customer portfolio;
- prepare and evaluate competitor analysis;
- evaluate relationships with customers and suppliers and recommend appropriate changes or improvements.

Syllabus content

- The importance of relating the organisation to its environment when assessing its competitive position, and consideration of the level of uncertainty and risks that the organisation faces.
- The importance of relating the organisation to its environment when assessing its competitive position, and consideration of the level of uncertainty and risks that the organisation faces.
- The importance of relating the organisation to its environment when assessing its competitive position, and consideration of the level of uncertainty and risks that the organisation faces.
- Classifying and assessing the changing national and international influences on the organisation, carefully using appropriate models and techniques (for example PEST). This would include such issues as EU regulation, WTO agreements and trade cycles.
- The influence of industry forces in the marketplace (for example, Porter's five-forces model).
- International factors affecting the marketplace: country advantages and global factors.
- The role and activities of interest groups and pressure groups (for example, self-interest groups, such as industry associations, as well as environmental and ethical pressure groups). This topic is concerned with the recognition of additional stakeholders.
- The availability and quality of data and information for environmental analysis. This includes the need for Internet and database interrogation.
- The customer portfolio: customer analysis and behaviour, including the marketing audit and customer profitability analysis, as well as customer retention and loyalty. The concept of relationship marketing.
- The importance of relationships with customers and suppliers, adversarial relationships or partnerships in the supply chain.
- The implications of the above for the Chartered Management Accountant and the management accounting information system.

12(iii) Position appraisal and analysis – 25%

Learning outcomes

On completion of their studies students should be able to:

- evaluate the strengths, weaknesses, opportunities and threats of an organisation;
- evaluate and produce a comprehensive review of performance, resources and capabilities;
- evaluate the product portfolio of the organisation and advise an appropriate action;
- produce a benchmarking exercise and evaluate the outcomes;
- identify and evaluate an organisation's value chain and the accounting implications thereof;
- evaluate the impact of the external environment on and the strategic objectives of an organisation;
- identify the position of organisational boundaries.

Syllabus content

- The current state of the organisation and its advantages and disadvantages (for example, SWOT analysis).
- Auditing an organisation's resources: considering intangible resources, products, services, people, structure, finance, stakeholder relations and systems.
- The product portfolio, product life cycle and BCG analysis.
- Benchmarking performance with bestpractice organisations.
- Value chain analysis and the implications for the organisation and the accounting system.

12(iv) Evaluating strategic options – 25%

Learning outcomes

On completion of their studies students should be able to:

- identify and evaluate an organisation's planning gap;
- evaluate and recommend growth and divestment strategies;
- evaluate and recommend response strategies to competitors' actions;
- prepare and evaluate strategic scenario plans;
- evaluate and recommend appropriate changes in organisational structure;
- identify and evaluate approaches to the design and operation of the management accountingsystems;
- apply investment techniques to marketing and strategy decisions.

Syllabus content

- The importance of the planning gap and the use of scenario planning.
- Competitor analysis, including generic competitive strategies, product–market strategies (Ansoff) and competitor response profiles.
- Branding and brand-switching strategies.
- Advantages and disadvantages of different methods of growth, including international acquisitions. The evaluation of growth strategies.
- Divestment strategies and demergers and the evaluation of such actions.
- The development and evaluation of response strategies to the actions of competitive forces (for example, competitor price changes).
- The implications for the internal organisation of the entity of the environment and corporate objectives.
- Alternative forms of organisation (core and non-core activities) and the effects of changes in technology (for example, homeworking) and the labour market (flexible employment relationships).
- The application of business process re-engineering and the need for customer

responsiveness.

- The role of management accounting and information systems in supporting management and the appropriateness of management accounting techniques for alternative organisational structures and philosophies.
- The concept and design of a strategic management accounting information system to assist strategy formulation, implementation and control.
- The use of investment appraisal techniques in marketing and strategy selection: for example, volume-enhancing marketing spends and decay-reducing marketing spends.
- The basics of transaction cost analysis and the implications for the location of assets, knowledge, people and activities inside or outside the organisation.
- Contracting and outsourcing decisions and their financial effects.
- The potential problems and advantages in contracting out the finance function as a whole or of some elements of the function.
- The implications of the above for the Chartered Management Accountant and the management accounting information system.

12(v) Implementing and controlling plans – 15%

Learning outcomes

On completion of their studies students should be able to:

- evaluate and recommend appropriate control measures;
- evaluate and produce multidimensional models of performance measurement;
- discuss the effect of regulation on performance;
- evaluate the use of shareholder value analysis;
- identify problems in performance measurement and recommend solutions;
- evaluate performance from different time and stakeholder perspectives.

Syllabus content

- The problem of assessing strategic performance; the use of profit and cash measures, and the concept of appropriate measures for an industry contingent on environmental factors.
- Non-financial measures and their interaction with financial measures. Consider the need for ethical and environmental measures.
- Multidimensional models of performance: including the balanced scorecard, the results and determinants framework (six-dimensional performance matrix) and the performance pyramid.
- The effect of regulation, both voluntary and legal, on corporate performance.
- The achieving of success for the shareholder; shareholder value analysis and value drivers. The strategic use of shareholder value analysis in resource allocation and rebalancing the portfolio.
- Strategic business unit performance: transfer pricing, reward systems and agency theory.
- The appraisal and comparison of international subsidiaries.
- Short- versus long-term achievement: research and development, changing technology, outsourcing and capital investment.

Management Accounting Case Study

Aim

The Case Study aims to test the student's ability to:

- apply strategic management accounting techniques to make and support decisions within asimulated business context.

Rationale

This paper represents a new approach to assessment for CIMA. Previously, papers at the Final Stage have used scenarios and mini case studies, but still within the context of a specific syllabus for that subject. The syllabus content for this paper will be that for the other Final level papers, and will draw upon material already covered in the previous levels. The aim of the case study is to integrate the material covered to date, particularly the Final level papers. The emphasis will be on testing the higher level skills of synthesis, analysis and evaluation, and recognises that the Chartered Management Accountant's skill in presenting and communicating information to users is of prime importance. The other three papers at the final level each have a specific syllabus content and will normally deal with that content within a specific context. The Case Study will require the student to deal with material in less structured situations and to integrate a variety of tools in arriving at a recommended solution. It is obvious that it is unlikely that there will be a single right answer to a complex business problem, and students will be expected to recognise the possible alternatives in dealing with a problem. The processes that students undertake in arriving at potential solutions are viewed as being more important than the recommendations.

Learning outcomes

Students will be required to go through these stages to prepare for, and to answer, the case:

Preparatory to the exam

- analyse and identify the current position of an organisation.
- analyse and identify the relevant problems facing an organisation.

Case Exam

- appraise possible feasible courses of action available;
- evaluate and then choose specific proposals;
- identify and evaluate priorities related to the proposals;
- prepare and present information in a format suitable for presentation to senior management.

Assessment

There will be a three-hour written paper with a limited number of questions. They will normally be answered using the form of a report, presentation or letter/memo to a variety of users. The questions will be based upon a case study issued in advance of the exam. There will be sufficient time before the exam to allow the student to undertake preparatory analysis. Further information regarding the case will be added as part of the exam paper. As a guide to the volume of material within the case, it is likely to be up to fifteen sides of A4 issued in advance of the exam and up to five sides of A4 contained within the exam paper. It should be noted again that questions will test the processes undertaken by students in dealing with the problems identified in the exam and their ability to present and communicate information. It is unlikely that preparing very detailed notes, including cramming knowledge, before the exam will be of benefit. Students should use the preparation time to become familiar with the case.

Management Accounting – Financial Strategy

Syllabus review

Following a review of this syllabus CIMA has introduced some changes which will be assessed for the first time in **May 2004.**

Syllabus overview

This syllabus explores financial management from domestic and international perspectives. It builds on material covered in the Finance and Management Accounting Decision Making papers at Intermediate level.

The risk management section of the paper introduces entirely new material not seen in previous papers. The other three sections of the syllabus represent developments of material introduced in earlier papers, including knowledge of ratio analysis, WACC and other financial management techniques and knowledge. The ability to identify and analyse appropriate performance measures and ratios underpins this syllabus.

Aims

This syllabus aims to test the student's ability to:

- evaluate and interpret the financial implications of strategies;
- calculate, evaluate and recommend the value of an organisation;
- interpret the risks facing an organisation and recommend risk-management strategies;
- evaluate advanced investment proposals.

Assessment

There will be a written paper of three hours. Section A will contain a compulsory question worth 50 marks, based upon a scenario. Section B will contain a choice of questions, normally two from four.
All learning outcomes may be tested in each section.
Formulae will be given as required.

Learning outcomes and syllabus content

13(i) The formulation and achievement of financial objectives and strategy - 25%

Learning outcomes

On completion of their studies students should be able to:

- identify appropriate actions for improving financial performance;
- evaluate the attainment of financial and non-financial objectives;
- analyse and interpret company accounts and available information of relevant stakeholders;
- identify and interpret the impact of internal and e•ternal constraints on financial strategy (for example funding, regulatory bodies, investor relations, strategy, and economic factors).

Syllabus content

- Financial and non-financial objectives; planning, evaluating and controlling an organisation's objectives; evaluating the effect of actual or forecast changes in major economic forces on both the setting and achievement of objectives.
- The impact of financial obligations on achieving financial objectives (for example redeemable debt, earn out arrangements, potential liabilities, long term commitments including Public / Private partnerships, such as the Private Finance Initiative in the UK).
- The impact of regulation on developing strategy (for example, regulation by competition authorities, pricing and services agencies such as OFTEL, OFWAT and takeover regulation).
  Note: Detailed knowledge of the City Code for Takeovers and Mergers will not be tested.
- Domestic and international working capital management strategies. Note: Detailed testing of stock management models will not be set, since these were covered in the Finance paper.
- Forecast financial statements (profit and loss account, balance sheet and cash flow) based on expected changes in base data or previous forecasts (for example changes in inflation, volume, margins and probabilities and expected values). (Note: presentation of these statements need not be in published account format.) Detailed testing of cash management models will not be set, since these were covered in the IFIN syllabus.
- Policies for distribution of earnings: for example, dividends, share repurchase. Note: theory of dividend irrelevance will not be tested.

13(ii) Business valuations - 25%

Learning outcomes

On completion of their studies students should be able to:

- calculate values of organisations of different types, for example, service, capital-intensive;
- assess and evaluate the strengths and weaknesses of the various methods of valuing a business;
- identify and calculate the value of intangible assets in an organisation (including intellectual capital);
- identify and evaluate the financial and strategic implications of proposals for mergers, acquisitions, demergers and divestments;
- compare, contrast and recommend settlement methods and terms;
- evaluate post-merger value enhancement strategies and calculate post merger values of companies;
- evaluate exit strategies for major investors.

Syllabus content

- Various methods for valuing a business (for example asset basis; earnings bases, such as P/E multiples, earnings yield; cash flow valuation bases such as discounted cash flow, dividend yield, dividend growth model; and other valuation bases such as earn out arrangements or super profits methods). (Note: the bases for valuing assets include historic, replacement and realisable asset.)
- The efficient-market hypothesis (EMH) and its application to business valuations.

- Approaches of the various valuation bases to the issue of new equity, including the valuation of the company prior to flotation.
- Cost of capital as required in the valuation process.
- The impact of changing capital structures on the market value of a company will be tested using the formula $V_g = V_u + TB$. An understanding of the principles of Modigliani and Miller?s theory of gearing with and without tax will be expected, but no proof of their theory will be examined (by which we mean arbitrage).
- The different forms of intellectual capital and the methods of valuation.
- The priorities of different stakeholders in the merger or company valuation process.
- The reasons for acquisitions (for example synergistic benefits, removing competition).
- Different payment methods (for eample cash, shares, convertibles, earn-out arrangements).
- The integration process following a takeover, for eample transferring management, merging systems and the impact of the merger on post-merger values.
- Post-merger value enhancement strategies.
- The function/role of management buyouts, providers of private equity and venture capitalists.
- Exit strategies for major investors, for example flotation of company (if currently unlisted), sale of shares on a stock exchange (if listed), private sale of shareholding to a third party.

13(iii) Risk management - 25%

Learning outcomes

On completion of their studies students should be able to:

- identify the sources of risk facing a company;
- interpret the financial impact of the various risks facing an organisation and evaluate risk management strategies;
- demonstrate how and when to convert fixed to floating rate interest;
- calculate the impact of differential national inflation rates on forecasting exchange rates;
- explain exchange rate theory.

Syllabus content

- Management of risk : transaction, translation, economic, political/cultural and commercial risks, including fraud.
- The principle of diversifying risk (no numerical calculations required).
- Interest rate parity, purchasing power parity and the Fisher effect.
- Forward contracts and money market hedges. Numerical questions will be set including the need to be able to use cross-rates.
- Currency futures and options, including tick values. Numerical questions including tick values but ignoring basis risk will be set. The Black-Scholes option pricing model will not be tested numerically - however, an understanding of the variables, which will influence the value of an option, should be appreciated.
- Internal hedging techniques, for example netting and matching.
- Currency swaps. Calculations to illustrate a currency swap may be set
- Management of interest rate risk, including the use of forward rate agreements, futures and interest rate guarantees; interest options and the use of interest rate swaps. (Note: caps, collars and floors are included in interest rate options.)

Calculations may be required to illustrate all these interest rate management techniques.

13(iv) Advanced investment appraisal – 25%

Learning outcomes

On completion of their studies students should be able to:

- evaluate investment proposals (domestic and international);
- recommend methods of funding investments;
- interpret the impact of changing exchange rates and inflation rates on the investment;
- calculate and interpret real options (abandonment, follow-on, deferment);
- calculate the tax shield of debt finance on an investment;
- identify and describe procedures for the control of international investments;
- recommend investment decisions when capital is rationed.

Syllabus content

- Net present value and internal rate of return calculated by either converting the foreign currency cash flows into sterling and discounting at an appropriate sterling discount rate, or discounting the cash flows in the host country?s currency using an adjusted discount rate.
- Capital asset pricing model (CAPM). The ability to gear and ungear betas will be tested
- Candidates will not be asked to calculate a beta value from raw data using regression or other methods.
- Sources of long-term finance, including the benefits of finance drawn from the foreign environment, *for example* Euro currency and Eurodebt markets.
- Adjusted present value (APV). The two-step method of APV will be tested for debt introduced permanently and debt in place for the duration of the project.
- Risk adjustment using the certainty equivalent method when given a risk-free rate and certainty equivalent values.
- Capital investment real options, by which we mean the option to make follow-on investment, the option to abandon and the option to wait.
- The effect of taxation, including differential tax rates and double tax relief.
- The effect of restrictions on remittances.
- Post completion audit and other controls of investments in long term domestic and international capital projects; procedural controls and project management.
- Single-period capital rationing for divisible and non-divisible projects. Multi-period capital rationing will not be tested.

Management Accounting – Information Strategy

Syllabus overview

This syllabus is concerned with the strategic importance of information to organisations in the current and future business environment. It recognises that, although many organisations employ IT professionals, Chartered Management Accountants have a key role to play in the provision of information that adds significant value to the ever-increasing volume of data that is available.

Aims

This syllabus aims to test the student's ability to:
- identify how information supports business strategy;
- evaluate the use of IS/IT to improve the competitiveness of an organisation;
- prepare a coherent plan to manage information;
- identify the ways in which IS/IT is changing the nature and structure of the working environment.

Assessment

There will be a written paper of three hours. Section A will contain a compulsory question up to a maximum of 50 marks, based upon a scenario. Section B will contain a choice of questions, normally two from four.

Learning outcomes and syllabus content

14(i) Strategic information management – 25%

Learning outcomes

On completion of their studies students should be able to:
- evaluate the use of information as a key resource in different organisational contexts;
- evaluate information and information systems;
- evaluate appropriate channels of communication available;
- evaluate and advise managers in the development of knowledge-management strategy;
- identify and evaluate the various support systems available for the management of knowledge;
- evaluate the impact of electronic commerce on the way business is conducted and recommend an appropriate strategy.

Syllabus content

- Typical information requirements of organisations operating in different sectors such as manufacturing, service and the public sector, as well as non-profit-making organisations such as charities.
- Chief reasons why information is important for organisations.
- Process of cost–benefit analysis and how to assess the value of information.
- Characteristics of information at all levels of the organisation.
- Use of qualitative information by organisations in planning, control and performance monitoring.
- Typical methods of data collection in various business sectors (for example, bar codes and scanners in retailing).
- Various IT systems that deliver information to different levels in the organisation (for

example transaction processing, decision support and executive information systems).

- Potential benefits and drawbacks of Internet use by organisations for activities such as data collection and dissemination of information (including the security issues to be borne in mind), as well as the concept of intranets and their use by organisations in information management.
- Concept of electronic commerce and the potential impact it has on the business strategy.
- Concept of knowledge management and why it is seen as a key element of an organisation's success.
- Use of databases and planning models in assisting the strategic planning process (for example external databases, economic models, forecasting and modelling packages/applications).

14(ii) Strategic dimension – using IS/IT competitively – 35%

Learning outcomes

On completion of their studies students should be able to:

- identify and evaluate appropriate IS/IT systems and recommend changes to meet the strategic information needs of an organisation;
- evaluate the use of IS/IT to gain competitive advantage, and recommend appropriate strategies;
- evaluate the importance of process innovation and re-engineering;
- evaluate the strategic benefits of IT and advise managers on the development of an IS/IT/IM strategy.

Syllabus content

- Why an organisation needs an IS/IT strategy which is complementary to the organisation strategy.
- How organisations can compete through better use of information as opposed to technology: for example, using a database to identify potential customers or market segments as opposed to creating a barrier to entry through investment in IT.
- The link between IS/IT and business strategies and how one supports the other while at the same time, potentially using IT as the key element of the competitive strategy.
- The way IT can impact upon an industry by utilising frameworks such as Porter's five forces and value chain, and how organisations can use IT to enhance competitive position.
- How CSFs link to performance indicators and corporate strategy and how they can be used to drive the information needs in the organisation.
- The strategic business use of the Internet and WWW in terms of marketing and sales activities, and utilising technology to provide enhanced value to customers and suppliers.
- Use the applications portfolio to improve IS/IT strategy (McFarlan).
- Data warehousing and data mining as tools for managing data and the likely benefits that can be gained from their use, together with the implications of data warehousing.
- The concept of business integration – links between strategy, people, technology and operations in determining the role of IS/IT.
- The role of IT in innovation and business process engineering.
- The strategic case for IT investment, particularly where benefits and value of information are difficult to quantify with any degree of reliability.

14(iii) Planning and implementation of IS/IT strategies – 25%

Learning outcomes

On completion of their studies students should be able to:

- analyse the contents of IS, IT and IM strategies, and recommend improvements thereto;
- evaluate the organisation of the IS/IT function within a given organisation;
- recommend strategies for achieving the integration of technical and business staff;
- evaluate and recommend strategies for managing change in an IT context.

Syllabus content

- The purpose and content of IS, IT and IM strategies.
- How to develop a plan and implement the various strategies in a positive way.
- The potential ways of organising the IT function, involving the use of steering committees,
  support centres for advice and help-desk facilities, end-user participation.
- The argument for and against outsourcing.
- The criteria for selecting outsourcing/facilities management partners and for managing ongoing relationships, service-level agreements, discontinuation/change of supplier, handover considerations.

14(iv) The social and organisational impact of IS/IT – 15%

Learning outcomes

On completion of their studies students should be able to:

- identify and recommend new working patterns to improve a given situation;
- identify and evaluate the impact of developments in telecommunications;
- recommend ways of achieving co-ordination of activities via IS/IT in a decentralised organisation;
- explain and interpret the concept of human information processors;
- evaluate the use of 'intelligent agents' software;
- identify and evaluate the cultural dimensions of IT acceptance.

Syllabus content

- The way IS/IT is changing the method of working and the increase in the knowledge content of many jobs.
- The organisational impact of technology, its implications for structure and working
- relationships, and how individuals may be faced with a role change.
- The human information processor and the implications of providing a user-friendly interface to gain maximum benefits while minimising the potential drawbacks, such as physical and emotional effects, providing the right volume of information, easy retrieval and storage facilities, and merging sources of information reaching individuals so that they become a manageable number.
- How intelligent agent software can be applied to monitor an individual's use of a system and learn what the user's day-to-day information needs are.
- The growing awareness of remote working and the implications for the individual and the organisation.
- The impact of IS/IT on the social aspect of the organisation and implications for organisational culture.
- The management of change and potential staff reactions, particularly in respect of actual or perceived role changes.

Appendix 4

SAICA Management accounting syllabus

MANAGERIAL ACCOUNTING

Managerial accounting utilises cost and other relevant data for the purposes of planning, control and decision making. As managerial accounting and planning and control are so closely interrelated that it is diffucult to differentiate between the two areas, no attempt is made to distinguish between them in this syllabus. Costing is concerned with the process of ascertaining the cost of products or services for use in managerial and stewardship accounting.

There continues to be much criticism of the state of managerial accounting worldwide. One reason for this is that distortions are imposes by external financial requirements. The syllabus attempts to avoid these distortions by focusing on the information required by management decision-makers. The curriculum confines the environment to manufacturing, service and retail organisation. In particular, a greater emphasis on management of the business by recording, evaluating and interpreting costs, rather than the more narrow emphasis on control of costs is adopted. Attention must also be paid to the advances in manufacturing and information technology and the impact that these advances have on conventional approaches to the practice of management accounting.

Aims

- *Cost management:* To gain an understanding of costing concepts and their application in the design, implementation and operation of costing systems.
- *Planning and control:* To develop the ability to devise appropriate indicators of performance, to measure and evaluate management performance and provide information for management control.
- *Decision making:* To develop the ability to identify relevant information and provide information for decision making and system design.

Objectives

Candidates should be able to do the following:

- Design and evaluate costing systems appropriate for various types of organisations and processes;
- Calculate, record and report information necessary for effective cost management;
- Apply cost management techniques which achieve the strategic objectives of the business;
- Advise on the issues and principles of control centres; and
- Build and manipulate simple financial models and test assumptions.
- Provide appropriate information for decision making.

Topics	LEVELS		
	1	2	3
Nature of costs			
• Costs classification			*
• Cost behaviour			*
• Cost-volume-profit analysis			*
• Cost estimation			
** High-low			*
** Regression	*		
• Cost objects			*
** Product			
** Function			
** Process			
** Activity			
** Department			
** Service			
** Customer			
Costing and cost management: Material			
• Recording material costs (direct and related)			*
• Bases of inventory valuation			
** FIFO			
** Weighted average			
** Standard cost			
** Specific identification			
Costing and cost management : Labour			
• Recording labour costs			*
• Bases of assigning costs			
• Time			
• Piece			
• Management of labour costs			
• Learning and experience curves			
Costing and cost management: Overheads			
• Recording overhead costs			*
• Bases of assigning overheads to cost objects			
** Absorption vs variable costing			
** Traditional volume bases measures			
** Cost drivers and activity-bases costs			
Management accounting information systems			
• Types of costing systems		*	
** Job costing systems			
** Process costing systems			
** Joint and by-products			
** Scrap, waste and rejects			

Topics	LEVELS		
	1	2	3
Decision-making			
• Criteria for relevant information			*
• Application to decisions			
** Pricing			
*** Cost based			
*** Target costing			*
** Capacity utilisation	*		
*** Special order			*
*** Make or buy			
*** Product mix			
*** Theory of constraints			
*** Sell or process			
** Product line decisions			
** Adding/dropping parts of operation			*
• Short-term vs long-term implications			*
			*
Planning and control			
• Corporate strategy and long-term planning			
• Budgeting	*		
** Responsibility centres			
** Master, capital, cash and subsidiary budget			*
			*
** Fixed and flexible budgeting			
** Zero-base budgeting			*
** Activity-based budgeting		*	*
• Activity-based management			
• Total quality management	*		
• JIT	*		
• ERP	*		
	*		
Standard costing			
• Design of standard costing systems			*
• Variance analysis			
• Reporting on variance analysis			
• Reconciliation of budget to actual			
• Investigation of variances			
• Pro-rating of variances and compliance with AC108			
Performance management			
• Performance measurement of managers and/or decentralised units			
• Transfer pricing			*
• Non-financial performance measures		*	
• Balanced scorecard	*		
• Benchmarking	*		
	*		