The use of management accounting techniques in small and medium-size enterprise decision-making

Fiona Jane Williams

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Business School Faculty, Birmingham City University

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I confirm this is a certified copy of thesis submitted

F Williams.

ABSTRACT

Research literature on management accounting is sparse and its importance within organisations decision-making processes has not been fully appreciated. Furthermore, although historical research has considered the development of the techniques holistically known as management accounting, no study has considered whether there is a potential link between those techniques used by the early cost clerk and those used within SME owner/mangers decision-making processes today.

An empirical study consisting of a questionnaire was sent using a mixture of delivery methods and from a sample of 1100, 100 usable returns were received. Initial responses led to a series of questions to be formulated as a framework for case interviews, with the narratives giving additional data towards the overall findings and conclusions drawn from this research. A pilot empirical study and a pilot case interview were undertaken. Additionally, prior research was utilised to confirm or refute findings, giving a richness of data for the research to draw conclusions from.

Consideration of the uses of management accounting techniques employed has indicated that there is a potential link between the historical context of the techniques and its application within an SME organisation. Techniques aligned to the technicians operating within the newly formed and developing businesses of the Industrial Revolution were visibly utilised in businesses, but those affiliated with academic, mathematician or economic 'births' were not. The omnipresence of the SME owner/manager was evidenced, demonstrating that the owner/manager retains control of the business decision-making even when employing personnel to undertake such decision-making processes, with intuition appearing to play a dominating role. Additionally, although management accounting is routinely used in the day to day running of the business; there was little evidence of it being employed in long-term planning, which is confirmed by past research, with certain case narratives being particularly rich in evidence of planning being performed informally.

Contacts for correspondence: Fiona Williams rock_cottage7@hotmail.com
Tel: +44 1785 603566

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This is for you Dad x

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Chapter 1: INTRODUCTION

Despite the extensive use and importance of management accounting in practice, research literature on management accounting is sparse and its importance in profit and non-profit making organisation is not fully appreciated. In the late 1980s, the accounting 'industry' and academics were heavily criticised on the grounds that management accounting practices had changed little over the preceding 60 years (Johnson and Kaplan, 1987), despite radical changes in the business environment. This resulted in the professional accounting institutes devoting considerable resources to the development of a more innovative 'skills set' for the management accountant, however, there is little research that evaluates the uses and the effectiveness of changes, especially within the Small and Medium-sized Enterprise (SME) environment.

By the early 1990s, academics from across Europe had started investigating the issue of management accounting change with alacrity. Research evolved around the theory of '*studying, and thus emulating, the most innovative and successful subjects*' (Kaplan, 1994) and '*best practice*' in leading western and Japanese companies (Anderson, 1995; Monden and Hamada, 1991). Current research into management accounting by academics, practitioners, and professional bodies is much in evidence (Burns et al., 1999; Burns et al., 2005; Gibcus et al., 2005; Gray, 2004; Guilding et al., 2005; Gupta and Gunasekaran, 2005; Lahm Jr and Little Jr, 2005; Perren and Grant, 2000; Scapens, 1991; Sharma, 2000). The examination of the fluidity of management accounting is also being scrutinised (Arnold et al., 1987; Burns and Scapens, 2000; Burns et al., 1999; Burns et al., 2005; Johnson, 1994; Johnson and Kaplan, 1987; Kaplan, 1994; Roslender, 1996; Scapens, 1991; Scapens, 1983; Sharma, 2000) as SMEs and traditional businesses are exposed to world competition (Gray, 2004; Sweeting et al., 2003) where information is a commodity and techniques to make effective use of such information is a pre-requisite for an efficient and proactive business.

The transition from theory to organisation based studies has changed research from theoretical to field study approach (Perren and Grant, 2000; Ryan et al., 1992; Scapens, 1983) that has led to the review of the use of management accounting techniques in the largest of organisations. Holmes and Nicholls (1989), based in Australia, concluded that the availability of (or lack of) management information in SMEs was associated with success (or failure) of the organisation. In the US, Gobeli and Seville (1989) agreed with the lack of information premise, stating that the alarming rate of small business failures each year could ultimately be traced to ineffective management, but one root cause is a lack of good management information, especially financial information. However, this type of research was the exception at the time and by the late 1990s, there was a change in focus. Mitchell et al. (1998) clearly stated that SMEs offered researchers an opportunity to research management accounting techniques within the real and fluid business environment. Today, both the UK Government and Europe have clearly identified strategies to help SMEs in their development.

Studies encapsulating SMEs and their financial accounting systems are regularly undertaken and published, concentrating on financial accounting or historic recording of financial data rather than on management accounting. Research is also available that considers the impact of the different types of owner/managers and how this could have an impact on the success of the business – the entrepreneurial abilities. Many of these will be outlined within this study. Little research has been undertaken to consider these fields of study as a whole, especially when linking to the decision-making aspects of the business, potentially indicating to a gap in the knowledge of how owner/managers utilise management accounting data with their decision-making, providing rationale for this research.

Parameters of the study

Consideration needs to be made as to the parameters of this study:

Decision-making – the use of (management accounting) techniques to help the owner of the business make short and long term decisions. The degree of risk aversion amongst owners and managers who run organisations, using a prior reasoning, will vary, but there is some evidence that organisations, especially large organisations, may use structured procedures to evaluate projects, thereby investigating how to mitigate risk impact and realise benefit from opportunities, whereas individuals and SMEs may not have the expertise or the resources (including time) to subject their proposal to such rigorous and systematic processes. The decision-making within SMEs is likely to be consistent with that of the individual where management and use of information is a major issue. Part of this study will consider this phenomenon and examine decision-making as an integral part of management accounting techniques. Consideration must also be taken as to the fact that individuals have different decision-making strategies and conventions. Although there is a plethora of studies that have considered the SME owner/manager as a decision-maker, for example, Levy and Powell (1998) compare SMEs decision-making to fire-fighting, and Gibcus et al. (2009) with their Daredevils to Busy Bees, there appears to be very little research within the financial areas (Davis et al., 2009; Olsson et al., 2006; Sweeting et al., 2003).

Management Accounting - is an integral part of management. It is a system of measuring and providing operational and financial information that guides managerial action, motivates behaviours, and supports and creates the cultural values necessary to achieve an organisation's strategic objectives (Ansari et al., 1997). It requires the identification, generation, presentation, interpretation and use of information (CIMA, 2000). The term management accounting is used to describe the provision and use of accounting information by managers within organisations, to facilitate the managers in their decision-making and management control functions. However, the use and definition of management accounting is ever evolving. Considered from a functional level, management accounting is the comparison of budgets and actual income and expenditure, conjoined with variance analysis, leading to better management of and focus on business matters, assisting with the identification of trends which may give a business competitive advantage (BusinessLink, 2004). Management accounting has evolved over time with the changing requirements of the business environment, indicating the concept that management accounting is a very fluid, evolving discipline. Some of this evolution stems from its usage within businesses, from the technicians working within industries themselves. Other developments have been influenced by economists, mathematicians and academics. This historical evolution will be traced and utilised within this research to excogitate any link between a techniques development and its use within SMEs.

Consideration of the use of management accounting within the SME sector is sparse when considered with research into the uses within large organisations (Davig et al., 2004; Gibcus et al., 2005; Jorissen et al., 2002; Perren et al., 2000; Randall and Horsman, 1997; Turner, 1997). Perren and Grant (2000) explored the development of management accounting in small firms, reporting findings that included the premise that owner/managers and their employees were the creators of management accounting routines which form through a cycle of action, externalisation and habitualisation. Holmes and Nicholls (1989) recognised that the availability of (or lack of) management information in SMEs was associated with success (or failure) of the organisation, therefore, it has policy implications for SMEs at large. The influence management accounting has on the decision making within SMEs will be investigated, examining not only from the view of current usage but also from the historical aspect of the technique. This is to be achieved through journals, literature searches, empirical research and case interviews. Additionally, literature research concerning the use of financial information should be considered, for example the findings of Gorton (1999), McMahon (1998), Sweeting et al. (2003), and Zaman and Geno (2000). This extends the study from a 'management accounting' perspective since much of the data SMEs use is historic and this could be classified 'financial accounting' data. The main emphasis within this study is examining how this data is used to make decisions for the future.

Small / Medium sized Enterprise (SME) - defining what exactly constitutes an SME for the purposes of research often proves to be a difficult task (Desouza and Awazu, 2006) since there are multiple definitions of SME (Jenkins, 2008). Definitions range from that of the Bolton Committee's 1971 Report on Small Firms (Bolton, 1971) through to the European Commission 1996 (Europa, 2004). A clear consideration of parameters for this study need to be addressed and an appropriate set of guidelines will be constructed. Organisations considered for study under this research will have to be individually validated against a pre-set concept of what constitutes an SME.

The SMEs environment rapidly changed during the 1980s and early 1990s. Mitchell et al. (1998) found that SMEs offered researchers an opportunity to research management accounting techniques within the fluid business environment, supporting and augmenting the UK and Europe's strategic policy of promotion of SMEs as a vehicle for economic development. Within the UK, SMEs represent over 99% of all enterprises (Bank Of England, 1998). Early 2005, there were an estimated 4.3 million business enterprises in the UK, with 99.3% being small, 0.6% medium-sized and 0.1% were large (Small Business Service, 2006). The Bank of England (1998) stated that SMEs accounted for 45% of UK employment and 40% of sales turnover of all UK firms, by 2005 this had rose to more than half of the employment (58.7%) and turnover (51.1%), with small firms accounting for

46.8% of employment and 36.4% of turnover (Small Business Service, 2006). This indicates the importance of SMEs within both the EU, the UK, and globally. In the US, small firms totalling some 23.7 million businesses, employ half of all private sector employees (Popkin, 2004).

Although it is possible to classify an organisation using a definition, the term SME belies the diversity of these organisations; they differ by size, industry, ambitions and motivations of their owners (Barrow and Brown, 1997; Drucker, 1963; Mitchell et al., 1998; Stanworth and Gray, 1991; Storey, 1994). More importantly, SMEs differ in their knowledge base, the skills set of the owners and workers and their utilisation of 'accounting' tools to help them manage and make decisions within their businesses (MediaLogic, 2005; Simpson et al., 2004; Storey, 2004). Also, certain strategic growth objectives of smaller owner-managed and family controlled businesses are influenced by a plethora of issues (Perren and Grant, 2000; Perren et al., 2000). Keasy and Watson (1993) state the smaller privately held firm is often an extension of the owner/manager's personality and ethos and that this greatly influences the human developments, capital structure, investment decisions and strategic position. They also identified that failure rates among SMEs are high, stating one of the main reasons for which was inadequacy in financial management. It has been argued that it is possible to generalise from a small sample because the knowledge gained from a particular situation often applies to future situations encountered (Hill and McGowan, 1999). However, there is no evidence to suggest that analysis of one individual (or business) is applicable to another (Watson et al., 1998). Watson et al. (1998) also identified an accumulation of research attempting to define clear characteristics shared by the owners of small businesses that affect their success, concluding that there is no simple pattern. Other researchers have suggested that a wider examination of the interface with entrepreneurship and the social construction of the firm should be considered (Barrow and Brown, 1997; Gray, 2004; Kotey and Meredith, 1997; Lauterbach and Vaninsky, 1999; Mukhtar, 1998; Storey, 2004; Yu, 2001).

Research question, aims and objectives:

The intended area of research is "The use of management accounting techniques in small and medium enterprise decision-making." The fundamental question is to examine the usage of management accounting techniques within small and medium sized firms in the decision-making process. The study will be based on a sample of SMEs within the (English) Midlands region. It is not considered that SME owner/managers within the Midlands are any different to those of the whole country: Hauser (2005) concluded that the main differences between SMEs and enterprises belonging to enterprise groups are to be found in qualitative features and not primarily in their size. Within the report, the decision-making, in particular the strategic decision-making techniques, as well as the ownership; family orientated or owner-managed, are key qualitative features of the organisation. However, although Windrum and de Jong (2000) argue that claims about findings from one complex social situation being true in alternative situations needs to be explicitly researched it is to be implied that findings from this study group can be extended to the whole country. Amalgam with this is the theory that if the owners and managers of SMEs had access to both the financial information, along with the right techniques, they could make dexterous decisions. Specific questions are considered pertinent to this work, which in a non-chronological ordering are:

Firstly, what are the main (financial) decision-making processes adopted by SMEs, with an additional consideration of who would be the main decision-maker?
Secondly, what management accounting technique would be considered relevant to this decision, with an emphasis on the background of that technique?
The third question conjoins the first two. Does the historical background of a management accounting technique have an influence on its use within the decision-making processes of an SME owner/manager?
Finally, is it possible to develop a useful framework to understand and encapsulate the usage of differing management accounting techniques of SME owner/managers?

Methodologies to be employed

Organisational research in the 1960s and 1970s was mainly dominated by the use of quantitative methods. By the 1980s it was recognised that certain research lent itself more to qualitative methodology. Morgan and Smircich (1980) stated that the 'call' was for more qualitative techniques. Robson (1993) observed that by the early 1990s there were two basic research methods employed; the positivistic, natural science based, quantitative, hypothetic-deductive or scientific methodology and the interpretive, ethnographic or qualitative. This has encouraged the use of both qualitative and quantitative methods and triangulated wherever possible. Aligned with this, qualitative and quantitative are viewed as complimentary and not competing. Thus, both methods will be utilised within this investigation to gain a deeper insight into firms' decision-making. Several researchers employ a combination of these methods as it is argued that a triangulation approach should be utilised wherever possible since it provides more perspectives on the phenomena being studied (Easterby-Smith et al., 1991; Gable, 1994). Allison, et al. (1996) conclude that while most research projects adopt one of the methodologies as a main form of enquiry, they invariably draw upon other methodologies as essential parts of the enquiry.

Many classifications of research methodologies (Allison et al., 1996; Alvesson, 2000; Cahoon, 1987; Haslam, 1998; Newman, 1998; Ryan et al., 1992; Tashakkori, 1998; Weimer, 1979; Zikmund, 1997) indicate that decisions about which research method is applicable to any research project is often based on a researcher's own experience and preference, the population being researched, the proposed audience for findings, time, money and other resources available (Hathaway, 1995). Further, the sampling design should result in valid and reliable inferences for the population at a low cost (Ghauri et al., 1995). Alternative strategies have been carefully considered and evaluated before a choice of research strategy was constructed, paying careful attention to questions to be answered as well as the researchers' circumstances, the avoidance of bias and prior research methodology.

Through the undertaking of a thorough literature review the researcher can gather current and previous research concerning the area of investigation which will not only allow for parameters to be drawn as to definitions (for example) but also to give secondary evidence to confirm or refute latter results from the empirical studies. Further, past methodology and methodological issues can be highlighted to inform on current practices, leading ultimately to research strategy. The literature review also serves to provide background to and justification for the research undertaken by this study (Bruce, 1994).

An empirical study, consisting of a questionnaire and covering letter, will be delivered to SMEs within the Midlands. Survey participants will be randomly selected within pre-determined strata which will endeavour to obtain a broad selection of industry types and sizes of business organisations from the (English) Midlands[1] SME population utilising a relevant, accessible database. The survey will be conducted to enquire about the background of the business, the appointment and role of the financial staff, the educational background of key personnel and the process by which they reach decisions. To ensure that the survey obtains information as required for this study, a pilot survey will be undertaken (Zikmund, 1997), with responses checked for both respondents understanding of the questions and researchers understanding of the results via a post-survey interview. Changes to the survey will then be made prior to the empirical study being distributed (Moser and Kalton, 1985); the required response rate being 100 usable surveys. Sharma (2000) indicated a response rate of 22% was sufficient to draw conclusions on his study into management accounting techniques. This research will draw a large enough sample of SMEs to gain response from at least 100 SMEs thereby mitigating the consequences of low response rate.

Accounting researchers (Berry and Otley, 2004; Hopper et al., 1992; Otley, 1983; Scapens, 1991; Scapens, 2004; Tomkins and Groves, 1983) have found that the case study approach provides a relatively useful basis to examine how far accounting theories are applied within the business environment and consider their usefulness, effectiveness, and areas of application within the organisations operations. In particular, case research is likely to overcome the problems of superficial and ambiguous research results which may be obtained from questionnaire and interview-based research by providing a detailed and richer understanding of product cost practices (Ryan et al., 1992). It is intended that five organisations are identified for study. These case narratives will examine the use of accounting information in the decision-making process in more depth than can be achieved through the use of the questionnaire study. Owner/managers and/or financial managers will be interviewed regarding the decision-making processes of the organisation and the techniques adopted within the SME to support that process. Interpretative analysis will be applied to analyse statements made by owner/managers, trying to understand 'lived' experience and with how participants themselves make sense of their experiences.

Random samples have been utilised in previous accounting studies (Davig et al., 2004; Jazayeri and Cuthbert, 2004; Sharma, 2000) and as such the random sample is acceptable.

[1] Midlands being an encapsulation of West Midlands, Staffordshire, Worcestershire, and Warwickshire.

Researchers have identified that it is the characteristics of the owner/manager that are often of significance in the techniques being used within SMEs, therefore, the sample selection will not consider differing industries, however results will acknowledge differing aspects such as educational background of the financial director and the owner/managers characteristics. If sufficient responses are not forthcoming, the snowball technique will be utilised to generate additional subject responses (Zikmund, 1997). Bias will be excogitated within results from all respondents and to aid this, differing methods of delivery will be coded.

Naturalistic decision-making theory will be adopted, being the examination of decision-makers within field settings (Klein et al., 1993). Classical decision theory, grounded in economics and mathematics is the central philosophy, which complements the study of management accounting, also having groundings within the economic and mathematic schools. In addition, within accounting theory, the use of accounting to aid decision-making is evidenced: The American Accounting Association's (1966) committee defined accounting as *"the process of identifying, measuring and communicating economic information to permit informed judgements and* decisions *by users of the information"* pg. 1.

Overview of thesis

Chapter 2 – Literature Review

Two areas of academic knowledge are relevant to the conceptual development of the study and need to be considered. These are management accounting and SMEs. Intertwined with these are the study of decision-making and entrepreneurship. This exploration will consider the historical development of management accounting techniques as well as the heterogeneous nature of SMEs, assumptions and conflicts will also be discussed in order to develop the relevant understanding and set parameters which are required for this research. This will be achieved by a negotiated reading of the relevant and useful concepts that can be utilised to progress towards the conceptual framework as well as contribute to the fieldwork design by outlining parameters and highlighting questions for exploration.

Chapter 3 – Conceptual Framework

The evaluations and interpretation of current literature will form the basis of a conceptual framework which will be outlined in this chapter. The framework development is intended to be constructed as part of and in parallel with the interpretive process of the research in order to map the journey of the research from the interpretive themes relevant to this study, through each of the varied facets of decision-making within an SME, including the influence the owner/manager may have on that process and the management accounting techniques available to assist in the decision-making of the organisation. The diagrammatical presentations will provide a road map for the researcher, highlighting key issues and elucidating research methodology (Shields and Tajalli, 2006).

Chapter 4 - Methodology

From the review and evaluation of the literature and consideration of the conceptual framework and construction of hypothesis and testable questions, a research design will be developed and proposed. An examination of the use of questionnaires within research will be undertaken, including the target and method of distribution and collection and analysis of results. The application of the case research will also be considered, including how case organisations are to be selected and the proposed treatment of the case narratives.

Chapter 5 – Empirical Study

This chapter will outline the procedures employed for the questionnaire to be used within this study. The findings from the questionnaire will be briefly considered in conjunction with the literature review and conceptual framework. Limitations and operational concerns will also be explored. Results from the questionnaire study will be utilised within the case study preparation, allowing the researcher to further explore issues from the results.

Chapters 6 and 7 - Case Narratives

The first of these chapters gives an overview of the case organisations, including outlining methodology and an overview of the conclusions drawn. Five narrative studies are considered in the latter chapter. These will be developed from accounts of owner/managers experiences, considering their techniques for assisting in decision-making and their experiences over time as the businesses have developed. These rich narratives will add depth and understanding to the research phenomenon, assisting in bringing into context the emergent issues for consideration and highlighting the operational activities of SME owner/manager decision-making.

Chapter 8 - Interpretation

An interpretation of the findings from the empirical study and case narratives will be considered and common themes identified. Themes developed and illustrated within the questionnaire responses and case studies will be considered, interpreted and analysed using the conceptual framework developed. Further considerations will be made of the literature reviewed in light of the interpretive undertaking. This may lead to reinforcement of some existing positions in the literature, through to modification or enhancements of previous studies. All strands of research surrounding this thesis will then be considered together, highlighting those areas where common findings corroborate the conceptual framework as well as documenting those areas that are either erroneous or require further investigation. The aim of this study is to add practically based, theoretical understanding of the management accounting techniques used by the SME owner/manager in their decision-making. The results from the study will be, wherever possible, considered in line with previous studies.

Chapter 9 - Conclusions: Implications for policy and practice

The final chapter of this work will propose what the conclusions and implications from the research might be, together with their limitations. Practical applications of the work will be considered and the usefulness of the approach used in this research and on its implications for future research, education and practice will be explored. In addition, this chapter will review the methodologies used within the study, highlighting limitations and concerns and considering implications for future research.

Chapter 2: LITERATURE REVIEW

... a synthesis of the literature on the topic ...

(Pan, 2008) p.1

Introduction

The purpose of this chapter is to critically review, consider and evaluate literature relevant to this study. This will facilitate constructing a methodology pertinent to the research as well as enabling a conceptual framework to be considered. This study draws primarily on two academic research fields; management accounting and SMEs. In addition, decision-making is contemplated throughout the research. Entrepreneurship and the entrepreneurial spirit also inter-connect with this study and are acknowledged throughout. This chapter will consider the historical development of management accounting techniques, including the 'relevance lost' period (Johnson and Kaplan, 1987), its renaissance and the changing role of management accounting in businesses today. An examination of the differing definitions for SMEs will be considered, aligned to the characteristics of SMEs and decision-making within businesses. From this research, relevant understanding and parameters which are required for this research will be developed.

Management Accounting Practices

"The imbalance between our fairly good knowledge of firms' management control systems and our ignorance of their cost accounting systems is a curious phenomenon for which we do not have a satisfactory explanation."

(Johnson and Kaplan, 1987) p.169

The evolution of management accounting practices (MAP) can be traced back to the thirteenth century, with evidence from English Bread Assize requiring the cost of a loaf of bread to be linked to the cost of its ingredients (Edwards and Newell, 1990; 1994).

Systematic and academic explorations by accounting historians, such as Garner, Littleton, Solomons and Pollard give insight into its founding and academics, such as Johnson, Kaplan, Scapens, Burns, Drury and Tayles into its uses and development. Later exploration into MAP being necessitated by the industrial development and sophistication required within a successful, competitive business, to efficiently operate to seek competitive advantage. These explorations then lead to the further development of the practices being employed. The competitiveness debate (Porter, 2004) intensified the discussion on effective organisational practices and their impact on efficiency within business. When considering why the post World War II decline of American enterprise competitiveness and performance occurred, Johnson and Kaplan (1987) attributed it to the use of inappropriate use of management practices. Their summation was it could be directly attributed to the use of inappropriate planning, control and decision-making mechanisms, for the growing number of information and capital-intensive industries. The lack of timely and relevant information available to decision-makers raised the fundamental questions pertaining to MAP as it failed to adapt to the "new" enterprise. This was attributable to the fact that financial accounting gained prominence under regulatory requirements which led to accounting educators indoctrinating the mindset of future business managers (Johnson and Kaplan, 1987).

In recent years business organisations of all sizes have been motivated to make radical changes to their traditional business thinking and operational systems. Some changes are due to economic changes, for example the 'think lean' philosophy (Becker, 2001; Meier, 2001), related to the competitive environment the business operates within. Other changes have been influenced by the globalisation of businesses, especially those who use e-commerce. Technology has also been a huge influence on the way a business organisation organises certain systems. Not only through the introduction of e-commerce; 'shop-floor' methods have also been altered and adapted to utilise technological changes. Likewise 'support' systems, including the accounting function have also felt the winds of change brought about by the increasingly available technology, from hardware to the more advanced software facilities that are within reach of almost any businesses finance budget, including those of the smallest business. Organisations of all sizes are thus led today by ideas of lean operations in order to survive and succeed in the face of fierce and in many cases global competition. Consequently new manufacturing and ultimately MAP have been considered, introduced and implemented to assist organisations in this rapidly changing environment. It is claimed by their advocates that if implemented, these new theories can help a business measure its performances processes better, reduce uncertainty within its business operations and become a more successful business, giving the business that successfully introduces the techniques the competitive edge over those that don't – whatever the size of the business or function. Management accounting being seen as one of the mechanisms for the adaptation and survival of the small firm in particular (Perren and Grant, 2000). Albeit that standard cost systems were designed originally for cost control rather than cost reduction (Fleischman and Tyson, 1998) and it is only over time that their uses as a management decision-making tool has emerged. Management accounting has been evolving for decades (Drucker, 1992; Kaplan, 1984; Kaplan, 1994; Burns and Scapens, 2000). With each decade, new theories, techniques, or applications appear, developed for the large organisation. Some replace older methods, others are considered new with their intention being to give businesses another 'angle' to consider. For example;

1. Performance Budgeting, used in the 1950s as a method of linking budgeting to performance, both in the UK and USA, and in both private and public sector businesses, was commended to the world by the United Nations (Ferris and Graddy, 1998; McGill, 2001; Melkers and Willoughby, 2000).

2. Planning Programming and Budgeting Systems (PPBS), introduced in the 1960s as a budgeting system, perceived as a way to bridge the gap between budgetary planning and decisions to achieve both long-term and short-term objectives. It is still used in parts within the US Navy (Lyden, 1971; U S Coast Guard, 2005).

3. Zero-based budgeting appeared in the 1970s attempting to rationalise the input-output link underlying the budgeting process (Montanari and Wetherbe, 1979).

4. Activity Based Costing (ABC) emerged in the 1980s, was quickly followed by the budgetary system Activity Based Budgeting (Cooper and Kaplan, 1988; Cooper et al., 1992a; Cooper et al., 1992b; Innes and Mitchell, 1990).

5. Activity Based Budgeting (ABB) accredited to consultants Coopers and Lybrand Deloitte and management consultants Brimson and Antos (1994) as being a merger

of well-proven management techniques and practices such as TQM and ABC. ABB is seen as a technique for planning and controlling expected activities of an organisation in order to achieve a cost-effective budget that meets forecasted workload and agreed strategic goals (Antos and Brimson, 2005; Brimson and Antos, 1994).

Considering the above, performance budgeting was fairly quickly seen as a failure and thus displaced. PPBS and zero-based budgeting were seen as 'successes' in part because they formed a link between budgeting processes and organisational objectives, but their implementation and operation, at the time of 'invention' was relatively costly and highly labour intensive. If they had been introduced to industry in today's highly technological environment, they could have become much more widely implemented since today's technology would make these techniques more organisation friendly. However, in their day, organisations tried the techniques but many moved back to the more traditional budgeting systems, which are still in operation today, despite their perceived inadequacies (Drury and Tayles, 1995).

ABC, although not widely seen until the 1980s, can been seen in earlier stages of its development as far back as 1960 when General Electric pioneered its use (Johnson, 1994; Johnson and Kaplan, 1987). Its real emergence is credited to be in the late 1980s and early 1990s with the technological advances, the changing manufacturing methods, cheaper and more available information technology and stronger competitive marketplaces requiring business organisations to seek better costing systems to aid their competitiveness (their success or even survival) (Cooper, 1989; Cooper et al., 1992b). ABC is an example of a costing system being developed for the large organisation but even this proved cumbersome and bureaucratic and a leaner ABC approach has subsequently been developed (Kaplan and Anderson, 2007).

Systems and procedures like those seen above serve to attest to the adaptability of the techniques considered within the definition of management accounting. Some techniques were short lived, even within the larger organisations that they were 'devised' for. Others were little implemented at their initiation. Many were adapted from techniques already employed within large organisations under Kaplan's (1994) concept of studying, and thus emulating, the most innovative and successful subjects. Whereas others were constructed from theories devised within academia. All were constructed from the perspective of the large organisation and adaptability of technology, their application and appropriateness to the small and medium sized organisation often being overlooked.

The role of management accounting to aid decision-making

Management accounting processes are utilised to facilitate optimal decision-making to improve the wealth of the owner and to monitor principle agent's efficiency in a modern firm. Further, it is a system of measuring and providing operational and financial information that guides managerial action, motivates behaviours, and supports and creates the cultural values necessary to achieve an organisation's strategic objectives (Ansari et al., 1997). According to Shank and Govindarajan (1989) accounting exists to facilitate the development and implementation of business strategy. It appears though that there is a fundamental shift throughout the accounting world from accounting to management. In 2001, Chartered Institute of Management Accountants (CIMA) considered that accountings development stood at a crossroads highlighting the fact that the term "accounting" had been removed even from the brand names of both large and small firms of "accountants" within public practice, which at that time outnumbered other professional groupings in British top management (Allott, 2001). CIMA itself considered expunging the term 'accounting' from its own name, to be replaced by 'financial'. However, after deliberations, including voting by its members, it decided to remain the Chartered Institute of Management Accountants.

In the early twenty-first century a plethora of articles emerged highlighting the fact that management accounting continuously evolves, with the emphasis shifting from a cost determination and financial control focus, to the provision of advice to aid decision-making and strategy formation (Burns and Scapens, 2000; Perren and Grant, 2000; Sharma, 2000). Accounting professional bodies have influenced the mechanisms and techniques used within businesses, supporting their vision that management accountants must play a wider role in business than ever before, making it necessary to acquire a broader range of management and technical skills (Allott, 2001) enhanced and enabled by the increasing use of technology aiding its transformation and usefulness (Drucker, 1992).

Examining the techniques holistically called management accounting can be considered using various approaches. Agencies offering support to businesses on processes and procedures can be viewed, as can educational sources and those offered by academic research. Business Link (2004) states that decision-making management accounts can be used for pricing, capital investment and marketing; evaluating market and product profitability; and evaluating the financial effect of strategy and plans. Furthermore, they highlight the fact that management accounts are invaluable in helping owners and managers make timely and meaningful management decisions about their business. They state that there are no legal requirements to prepare them *"but as most businesses would agree, it is hard to run a business effectively without management accounts" (ibid, 2004) webquote.* Their claim is that businesses produce them on a regular basis (monthly or quarterly) dependant on their size. However, since there are no formal requirements to complete management accounts, and in the same vein no requirement to then monitor, evaluate or even file and keep them, there is no real evidence of what is actually being produced, using what technique, if in fact a 'formal' technique is being utilised, and/or for what purpose they had been constructed.

The American Accounting Association consider that management accounting includes the process of identifying, measuring and communicating economic information to permit informed judgments and decisions by the users of the information (Ryan et al., 1992). The Institute of Management Accountants (IMA) (2005a) highlight that management accounting is performed inside organisations. They consider that it is the internal business-building role of accounting and finance professionals, who design, implement, manage and report on internal accounting systems that support effective decision support, planning and control over the organisation's value-creating operations. Management accounting and finance professionals directly support an organisation's strategic goals, creating value, not just measuring it.

Extensively used educational texts provide a more concise definition *"Management accounting is concerned with the provision of information to people within the organisation to help them make better decisions"* (Drury, 1996) pg. 7. Another states *"management accounting measures and reports financial as well as other types of information that are primarily intended to assist managers in fulfilling the goals of the organisation"* (Horngren et al., 1999) pg. 2.

The conventional view is that management accounting comprises that branch of accounting that seeks to meet the needs of managers. It could be said that management accounting was first practiced when managers began to receive information regarding their business. However, general use of the term 'management accounting' is comparatively new (Ryan et al., 1992) evolving since the Second World War, being more specifically *"the provision, for management, of statistical information for the purposes of planning, decision-making and control"* (Edwards and Newell, 1994) pg. 412. The term 'cost accounting' has older origins - concerned specifically with the *"identification and accumulation of costs and, as such, provides much of the basic information required by management accountants"* in contrast to financial accounting's primary aim being to provide *"external users of accounting information, such as shareholders, employees and the government, with a historic overview of the trading position of a firm"(ibid,* 1994*)* pg. 412. To further differentiate between costing and management accounting and consider the different adoption approaches by small businesses, it is necessary to consider the historical context, including how the differing techniques have evolved. Littleton (1933) commented that knowledge of history can be utilised as a springboard toward a better understanding of enterprise's accounting today.

Historical context

"Those who do not remember the past are condemned to relive it."

(Santayana, 1905) p.289

Though there has been debate taking place as to the effectiveness of business management effectiveness (Cooper, 1987; Drucker, 1963), no major innovation has taken place to improve the importance or functioning of cost accounting or where there has been some innovative practices, these have been short lived (Mercereau, 2006). The attitude of practitioners appears to support Cooper (1987) *"if it ain't broke, don't fix it" pg. 46.* Such an approach assumes cost accounting is static and potentially not fit for purpose and not sufficiently dynamic to respond to modern business practices.

Contemporary and representative cost and managerial accounting educational literature consider that management accounting is in its infancy having played a secondary role to that of financial accounting (Garrison, 1982). Kaplan (1982) noted that management accounting is a relatively recent phenomenon, especially when compared to the long historical development of financial reporting. He considers that cost accounting was developed to fill a need generated by the financial reporting process and was the first manifestation of the current management accounting system. Cost accounting examines how historical costs were accumulated and assigned to products and departments, not for the forward consideration of business but as a method for inventory valuation and income determination (Horngren, 1982) and as such a by product of the financial reporting process (Garrison, 1982). However, from the mid twentieth century onwards, management accounting's development had been such that by the latter part of the twentieth century it was widely becoming a recognised field of expertise separate from financial accounting (Garrison, 1982) developing from its traditional role of recording full product cost data for external reporting and pricing, towards cost accounting for decision-making and performance evaluation (Deakin and Maher, 1984).

This transition reflects Littleton's (1933) ideas, although it is worth noting his text of 368 pages of history of accounting, only 40 pages, just over 10%, are allotted to the genesis and development of cost accounting. Within this section is the evaluation of the development of cost accounting from the double-entry view as well as the conception of inventory, or stock control systems, and as such, should perhaps have been entitled the genesis of manufacturing accounts. This is not unusual for texts of the day; G S Hamilton's Brewery Accounting (1939) technical text allotted 7 pages out of 134 pages to this topic (Talbot, 2010). The concept that cost accounting is not as old, by several hundred years, as 'financial' accounting, or the mercantile bookkeeping by double entry, is clearly evidenced. Management accounting's origins are not fully documented, possibly since there have never been any legal requirements to produce or keep them. Thus, its original concept, adaptation and evolution cannot be fully tracked. Additionally, Boyns (2005) argues that even though historians make judgments about the cost calculation procedures adopted, they do not appear to consider how those calculations could or should have been used. He continues by highlighting the fact that without a clear definition of what is meant by a 'sophisticated' costing system, the term used by Loft (1990), it is impossible to judge whether the cost calculation procedures found were sophisticated or not, either by historical or present day standards.

Much has been written about cost accounting and its transition into management accounting in the twentieth century. During the first half of the twentieth century the primary focus of accounting within businesses was on the determination of costs (Ryan et al., 1992), particularly product costing and the control of direct labour, direct material and overheads. At this time the innovators of new techniques and procedures were cost accounting practitioners. By the second half of the twentieth century there was an increasing awareness that accounting information should be appropriate to the needs of users, especially managers. It is also considered this was the start of the shifting emphasis, with emphasis now being on accounting information for managerial decision-making with techniques being additionally researched and 'invented' by economists and accounting academics (Brierley, 2001; Fleischman and Tyson, 1998; Ryan et al., 1992).

It is argued that little interest was shown in the analysis of costs for the purpose of making decisions about levels and methods or production, or for the pricing of products, until the arrival of 'scientific management' at the end of the nineteenth century, but it is by no means clear whether this reflects a corresponding lack of interest in costing on the part of the businessmen (Edwards and Newell, 1994). Modern day (financial) accounting was first recorded in a textual format by Paciolo (1494). This was the first text, not the first example of an accounting system, accounting practices being traced back before the invention of writing, not in its modern construct however but in pictographic or symbols (Schmandt-Besserat, 1992). Charge and discharge statements have been dated back to the time of the Norman Conquest (1066) to keep feudal system transactions, which included the leasing of land to tenants and tax collections. There are records such as Staffordshire Account of the Great Roll, 5 Henry II (1159) archived, showing clearly a heading 'Balance Sheet' and the use of Debit and Credit. Likewise, in the Report of the Commissioners of 37 Henry VIII (1546) as to the Gild of Palmers of Ludlow, there is evidence of the first document to state expenses in comparison with actual collections, leaving a remainder (Littleton, 1933).

Edwards and Newell (1994) considered the works of accounting historians such as Paul Garner (*Evolution of Cost Accounting, 1954*), David Solomons (*The Historical Developments of Costing, 1952*) and Sidney Pollard (*Genesis of Modern Management,* *1965*). It being Pollard who made the [in]famous statement that cost accounting was not one of the main achievements of the industrial revolution. They also examined evidence from such firms as Charlton Mills, Lyman Mills and Wedgwood, taking their historical foray as far as English Bread Assize of 1266 before concluding that management accounting is the term developed since the Second World War, being the provision for management of statistical information for the purposes of planning, decision-making and control. The cost accounting term having older origins, concerned specifically with the identification and accumulation of costs and, as such, provides much of the basic information required by management accountants. In contrast, financial accounting's primary aim is to provide external users of accounting information, such as shareholders, employees and the government, with a historic overview of the trading position of a firm (*ibid*, 1994).

Solomons (1952; 1968), one of the first researchers of the emergence of cost accounting, identified 1875 as important arguing that from the early fourteenth century till 1875 activity was mainly within the double-entry framework. After 1875, he states that the broader issue of using accounting to provide information for managerial decision-making is given greater stress and emphasis by organisations, with 1880s and 1890s witnessing a 'costing renaissance'. Solomons considered that all signs pointed to a lack of interest among industrialists in the application of accounting to industrial processes (Boyns and Edwards, 1997a; Edwards and Newell, 1994; Solomons, 1952; 1968).

Another valuable source of cost accounting history can be found in the works of Garner (1950; 1954) who meticulously traced numerous examples of cost accounting for labour and materials in job cost systems in the fourteenth through sixteenth centuries in Europe and thereby established the "provenance" of what was becoming known as management accounting. From his research, he observed that these early cost techniques were not widespread or at least not recorded, perhaps due to secrecy, for such techniques were valuable to managing complex enterprises i.e. Venetian shipyards, the Fugger owned mines in Austria, Plantin's print works in the Low Countries (Elder, 1937). Garner also commented upon the fact that, despite evidence of books published on financial accounting for trade and agriculture, no texts on cost accounting appeared until the mid-nineteenth century, thus limiting the dispersion of cost practices. Cost accounting during the Renaissance arose from the fact that owners of small central workshops found themselves competing now not only against guilds, but also among themselves. More accurate records of costs became necessary as a factor of success. Garner's (1950, 1954) view was that the introduction of more capital-intensive factory based methods gave way to the requirement for cost-consciousness. His conclusion, shared by others, was that this was not reached until the end of the nineteenth century (Edwards and Newell, 1994; Garner, 1950; 1954; Previts and Samson, 1997). Elder (1937), for example, identifies several medieval business records still in existence which show that industrial accounts were used as early as the beginning of the fourteenth century, for example, the Del Bene Company, Florentine importers and finishers of foreign woollen cloths; Francesco Datini, a Pratese merchant and manufacturer of woollen cloth and the Medici business interest's records, which show reasonably comprehensive costings (Edwards and Newell, 1994), being considered 'note worthy' (Garner, 1947).

In an often quoted article, Loft (1986) adapted a phrase from Jenkins (1922) and Lord Leverhulme (1922) declaring it was during the First World War cost accounting *"came into the light" pg. 132.* Whilst accepting that some businesses had developed quite complex cost accounting systems in the late eighteenth century, she later suggested that cost accounting in Britain began to spread only during the late nineteenth century, especially as the result of the Great Depression of 1873-96 (Loft, 1990). Her premise being that cost accountants and cost accounting were brought 'into the light' as a virtually unanticipated consequence of the war-time legislation which was passed with the intention of helping to prevent profiteering and to provide a basis for setting the prices of contracts for items for which there was no clearly identifiable market (Loft, 1986). Cost accounting's transition arose from direct government intervention specifically in the munitions industry imposing government accountants in manufacturing organisations to establish exact product costs to prevent profiteering on the government's contracts. Loft (1986) argues that the post war legacy promoted costing to unprecedented importance as it tied it in with national efficiency and initially it was termed scientific costing (Todman, 1922) piggybacking on scientific management. This transition also enabled costing to be introduced into professional accounting syllabi and the formation in 1919 of the Institute of Cost and Works Accountants (ICWA), later to be renamed the Chartered Institute of Management Accountants (CIMA).

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Stone (1973) and Johnson (1972) amongst others, demonstrated within their respective texts that fully integrated cost and financial accounting systems were in operation at the Charlton Cotton Mills (Manchester) and Lyman Mills (Boston, Ma) in 1810 and 1854 respectively. Their work echoes Garner (1950, 1954) in stating it was the rise of the factories that provided the principle stimulus for the development of cost accounting, placing the crucial period of change in the nineteenth century (Boyns and Edwards, 1997b; Bryer, 2000; Edwards and Newell, 1994; Fleischman and Tyson, 1998; Johnson, 1972; Stone, 1973).

It could be envisaged that cost accounting in a format recognised by today's management accountants is a product of the nineteenth century, which has been greatly extended and developed in the twentieth century but owes its initial conception to the traders as early as the fourteenth century, if not before. Prior to the nineteenth century, much of the production of goods was not as much for profit but for consumption, although even international importing and exporting businesses were in existence, with evidence of trade dating back well over 3,000 years, for example the Silk Road (Silkroad Foundation, 1997 - 2000). Further, to be able to consider the construction of management accounting from its fledgling state, it is important to consider the changing socio-historical landscape. With the change from Feudalism to Capitalism came wages (the transition from serf to wage worker (Bryer, 2006)), material costs, expenses and competition leading to a requirement for organisational control. Bryer (2006) argues that the function of management accounting is to allow senior management to control workers, including subordinate managers. In addition to a means of controlling the workforce, the early entrepreneurs (or in a Marxist view, Capitalists) who invested in these technology-led businesses wanted to make a profit from their investment. Thus there was a motive to keep books, to analyse costs, to (thus) make profits (Littleton, 1933). New definitions appeared in accounts, items such as cost of goods sold and stock or inventory (Johnson and Kaplan, 1987). Other items required review, such as the increased capital investment in fixed plant and machinery, maintenance charges, lighting, heating, power and wages for labour including supervisors, which had never been a factor of the family orientated 'home-industry'. Departments started being formed and the term 'overheads' appeared which then had to be considered within the profit-orientated business. Costs started to be analysed, especially as the number of businesses grew and the competition became keener. It is disputed this was the first time costs had been analysed (Anthony, 1989; Littleton, 1933) hence the term 'cost accounting' but it appears that the industrial revolution gave way to new ideas and techniques which were now more a necessity rather than a 'good idea'.

The initial of work Chandler (1962), based on general American developments during the nineteenth and twentieth centuries, considered how managerial structures developed in response to strategic changes. He concluded changes within the accounting system were necessitated which ultimately led to a distinction between financial accounting and those of the requirements of the management. Chandler (1977) states that few organisations within the USA were using any form of management accounting in the early nineteenth century, although he acknowledges the Springfield Armory, where cost accounting examples can be seen as early as 1850, but this, he argues, was an exception and that the railroad development held the key to the development of nearly all basic techniques of modern accounting. However, Hoskin and Macve (2000) allege former army officers at Springfield transferred their costing knowledge gained at Springfield to the American railways when they took up management posts there. Chandler's (1977) research linked the increased awareness of the use of accounting information within decision-making processes with the increased profitability that was being demanded within the railroad industry. The work was later considered by Johnson and Kaplan (1987) who agreed in part with the theories but consider that it may have been in the reverse. The development in management accounting, linked to the making of gains internally rather than relying solely on external market-based transactions were in fact the reasons why there was a growth in large-scale firms, this being an example of economic rationalism accounting merely responding to the needs of business, being objective and neutral and having no philosophical/social/political framework. In his later work, Chandler (1994) also outlines what he sees as a three-pronged investment in production, distribution and management, considering this to be the catalyst bringing the modern industrial enterprise into being. He further qualifies the management requirement as being managers in accounting, finance, marketing and general management.

Although authoritative, the view of Chandler (1962; 1973; 1977; 2004) is only one regarding the development of management accounting. Marxist historians link the development to the requirement for a tool in the armoury of capitalists in the class struggle over the distribution of income and wealth (Armstrong, 1985; Braverman, 1974; Hopper et al., 1987). Foucauldian writers attributed the development to the need of a manager to exert control and discipline over the labour force by measuring their outputs and actions in a visible and calculable manner or managing by numbers (Ezzamel et al., 1990). All of these views have a common theme; the requirement to consider an organisations income in one form or another and exert control over this.

With the rise of the industrial revolution, the birth of the corporation and scientific management, accounting came into its own and along with accounting came accountants, which was seen at the time as one of the worst jobs available. An indication of this rise can be found within the listing of accountants in old directories: In 1773, 7 accountants are listed, all in Edinburgh. The first London accountant being listed in 1776, who appears fairly short-lived since by 1834, 80 accountants were listed, all in Edinburgh. 1840 lists 107 in London plus 52 in Manchester. This profile had altered again by 1870, with 464 listings in London and 139 in Liverpool (Littleton, 1933). This then led to educational resources being written, not just outlining the principles and practices of financial accounting but encompassing cost accounting as well. In the 1870s, works by Scottish accountant Carter, and Manchester public accountant Battersby, addressed certain aspects of costing (Boyns and Edwards, 1997a). Garcke and Fells (1887) published their work on cost accounts; *'Factory Accounts'* is perhaps the first modern and comprehensive treatment of the subject in Britain written specifically for accountants and manufacturers. Rather wider in application is '*The Commercial Organisation of the Factory*' (Lewis, 1896; 1980) which is considered the first true management textbook in the UK this being followed by *'Factory Administration and Accounting'* (Elbourne et al., 1914; 1979). Dicksee (1893); Lisle (1899) and Pixley (1908) introduced cost accounting into general accounting texts (Boyns and Edwards, 1997a; Littleton, 1933) Pixley describing cost accounting as *"a new branch of the science of accounting" pg. 131.* Nicholson and Rohrbach (1919) summarised the introduction and use of cost accounting texts by claiming that more than 90% of the literature had been published in the nineteenth century and fully 75% in the last five years (c1913-1918) (Boyns and Edwards, 1997a).

Along with the educational resources, professional bodies were formed. Commencing with the Audit Committee (1846), Institute of Accountants in Edinburgh (1853), Institute of Accountants in Glasgow (1853), and in England, Manchester Institute of Chartered Accountants (1871) (Institute of Chartered Accountants in England & Wales, 2005). The first reference to cost accounting as a profession was The Institute of Cost and Works

Accountants, founded in 1919, its objective being to provide the range of information needed to plan and manage modern business and to support the new area of cost control work arising from the First World War (CIMA, 2005; ICAEW, 2005). A table of British professional accountancy bodies in existence at 1930, indicating date of incorporation and membership can be found within the appendices of this work.

In the USA, the New York Institute of Accounts was founded in 1882, bringing together public accountants, bookkeepers and businessmen interested in accounting. The American Association of Public Accountants, formed 1886, also in New York City, being followed quickly by each US state granting the title of Certified Public Accountant (Miranti, 1996). "*The adding machine was invented; ... (text)books were written; conventions were held; cost/management accounting was*" pg. 9, 10 (Littleton, 1933).

The above serves to attest to the concept that with formation of the 'new' corporation, *bookkeeping* (Paciolo) transformed into *accounting* (in a much broader sense). Limited liability businesses brought with them certain restrictions, for example the legal obligation to retain in the business the amount of the capital contribution. Incorporation also brought economic obligations to maintain the productive power of the enterprise, thus accurate records were required. Thirdly, corporations had investors, and potential investors, who required records of their profits. This meant that statements needed to be clear and comprehensible, not only open to interpretation and scrutiny but also to comparison with other businesses. It is interesting to note however that it wasn't until 1967 that companies were required by law to publish a sales figure in the profit and loss account (Institute of Chartered Accountants in England & Wales, 2005).

The significant development which took place in British industrial costing procedures from the end of the nineteenth century seems consistent with the persuasive 'demand/response' theory of accounting development, which sees accounting as a 'social technology' continually responding to changes in business requirements. "*The germ of cost accounting lay in the factory system of production. But it needed the soil of the industrial revolution to help it grow toward it fruition*" pg. 368 (Littleton, 1933). Solomons (1952) indicated 1875 as the deciding turning point whereby management accounting came into its own. However, there is additionally a growing body of evidence that appears to shed a new light on the development of management accounting before 1850 (Edwards and Newell, 1994).

Pre-1875

Boyns and Edwards (1997a; 1997b) concluded there is clear evidence that changes to accounting systems were undertaken to facilitate strategic decision-making and these changes were evolutionary rather than revolutionary. This confirms studies by Bromwich and Bhimani (1989) regarding the development of contemporary British management accounting practice and Scapens (1991) assessments of internal accounting systems used pre-World War II. This is perhaps not surprising since at the time there were no prescribed management accounting methods, there were no textbooks that business could consult, and no management accounting consultants that they could employ to help them find solutions to their problem. Thus any system or technique had to be constructed from a practical rather than theoretical viewpoint. This could be an indication of why there is a gap in modern day management accounting theory and practice, where business owners and managers have simply continued in the same fashion of finding ways to develop management accounting systems to meet their needs rather than consulting texts to find out the theoretical approach to tackling such a problem. This was acknowledged by Boyns and Edwards (1997a) who added that overall, the literature provides something of a confused picture. Hopper and Armstrong (1991) considered the independent influence of accounting professionalism on corporate practice may well have been minimal. This work had been undertaken mainly in response to Johnson and Kaplan's (1987) view that, within US corporations in the late-nineteenth century, the decline in competitive performance had been due to the lack of new development within the cost accounting environment, with corporations still using techniques that were developed more than 60 years before. Hopper and Armstrong (1991) argued that regardless of what new techniques accountants put forward, the existing management accounting techniques had a greater management advantage over the newly developed techniques; that of control over the labour process.

To further consider the developmental link to the industrial revolution, it is necessary to investigate the nature of business before this. Prior to 1780, firms tended to produce single items (Edwards and Newell, 1994). In this respect it is true to say that (in essence) cost accounting, especially cost allocation to different products, was not required; the majority of businesses being 'single activity organisations'. Where a business was multi-product, evidence can sometimes be seen of their acknowledgement of the requirements of considering costs, especially in respect of the cost allocation process. One of the most common examples used by accounting historians is that of Josiah Wedgwood who, it has been recorded, used cost accounting in his pottery works in 1770s (Edwards and Newell, 1994; McKendrick, 1970). Wedgwood discontinued or de-emphasised crests, figurines and painting based on cost analysis (Euphemia, 1973) and undertook a cost-benefit study of constructing a Staffordshire canal (Fleischman and Tyson, 1998).

Tracing the origins and developments of cost accounting is exasperated by the fact that any documentation in respect of cost accounting, if undertaken, was not necessarily retained by the organisation. Loft (1990) comments that management accounting history is open to many interpretations because of the paucity of surviving records. Chandler's (1977) studies considered it was responses to strategic changes that managerial structures developed, which necessitated changes within the accounting system, ultimately leading to a distinction between the financial accounting information/systems and those of the requirements of the management - management accounting/systems. Boyns (2005) commented that without clear definitions of what cost accounting was, it was difficult to consider what, if any, type of costing was taking place. Costing was undertaken usually by owner/managers who it was considered were much better placed to make any necessary calculations and who were also very keen to maintain a high degree of secrecy. An example being the cost calculations undertaken by copper smelter H. H. Vivian in 1840s which were kept in a private business diary under lock and key in the business safe. These have fortunately survived and are now archived in the National Library of Wales [Vivian Papers, E18, Hafod Smelting Charges] (Edwards and Newell, 1990; 1994).

Cost accounting techniques viewed through a historical lens suggest there is a plethora of evidence that decision-making was supported by effective use of financial data. Costing records covering 1330 to 1773 in respect of iron-making in Wealden have survived showing not only estimates of costs but also the calculations provide information on which a decision could be taken, such as whether or not to continue operations (Edwards and Newell, 1994; Fleischman and Parker, 1992; Straker, 1969). The English Bread Assize of 1266, stated that bread prices were fixed but the baker was allowed to vary the weight of loaves in response to changes in the price of grain, according to a set scale of weight and grain prices. It adds that costs had to be documented to support a claim for an increase in the allowance made for production costs (Edwards and Newell, 1990).

The above examples, along with other surviving examples of cost accounting techniques being employed within businesses, show that not only is costing an older technique than some consider (Solomons (1968) and Garner (1954), for example), but that cost accounting is not a factory led technique. Lee (1991) within his investigation of colliery accounting in sixteenth century England, found rare precursors of modern industrial accounting among the colliery records of the Willoughbys of Wollaton, Nottinghamshire (1597-1633). He states he found evidence of a wider range of calculations, possibly imported from Germany, used for the purpose of planning, decision-making and control (Lee, 1991). Further, those accounts analysed output, sales and production costs and supplemented the traditional charge and discharge accounts (Oldroyd, Undated; 2007). Most, however, do not indicate how the accounting data was used, except what it implicitly indicates, to estimate and calculate actual costs incurred and indicate overall profitability, but it could be inferred that since these techniques were being actively employed, there was also a strong interest in planning and a desire to monitor general profitability (Edwards and Newell, 1994).

Edwards and Newell's (1990; 1994) research also includes the Tredegar (ironworks) manuscripts [1746] showing the record of a lease or buy decision which continue so far as to identify the amount required to cover interest payments on the loan required. They consider this a credible, early attempt to apply the opportunity cost concept to industrial decision-making. Additionally, the Mona Mine Co [1820], which smelted or sold ore in copper production, includes in its financial records an example of sensitivity analysis in 1828. Both Cambrian Smelting Co [1822] and Mona Mine [1830] give information concerning overheads being recharged to departments and products using the 'direct labour hour' method and 'prime cost' method respectively. Charles Vignoles, a civil engineer, recorded a very early example of capital investment appraisal in 1833, whereby he used a technique to explore the possibility of laying down a railway for horse-drawn wagons from the Parys and Mona mines to the port at Amlwch, which showed a payback period of within about three years (Edwards and Newell, 1994).

Whereas Edwards and Newell's (1994) research is based within the UK, the work of Johnson and Kaplan (1987) is US based. They attribute the birth of cost accounting to the cotton-mills, which started appearing around 1812. Their research shows that amongst the earliest manufacturing cost records as investigated by US historians are those of the Boston Manufacturing Company, Waltham, Massachusetts, who as early as 1815 reveal a remarkable sophisticated set of cost accounts. Their methods became known as 'Waltham system' and were adopted by other New England textile companies as can be seen in the records of the Lyman Mills Corporation in the late 1840s (Boyns and Edwards, 1997b; Johnson, 1972; Johnson and Kaplan, 1987).

Johnson and Kaplan (1987) accredit management accounting's birth to the origins of hierarchical organisations in the early nineteenth century, more specifically showing that with the rise of certain industries, came certain cost accounting techniques, starting with textile mills in the early nineteenth, the railways in the mid- nineteenth and the steel industries adopting the techniques in the later part of the nineteenth century. Here, they state, was the starting point for cost accounting. The goal of the system was to identify the different costs for the intermediate and final products of the firm and to provide a benchmark to measure the efficiency of the conversion process. It was also used to provide incentives for workers to achieve production goals. By the middle of the nineteenth century, distribution (of businesses and products) over larger areas had become effective. Effectual management accounting systems were necessary to efficiently coordinate the logistical conversion and distribution activities of these enterprises, providing a summary measure of performance for decentralised and dispersed managers. Examples within the records of the railroad companies of the time give some of the best examples of how (cost) accounting was used to rationalise the business (Johnson and Kaplan, 1987).

Hoskin and Macve (2000) argue they found the genesis at the US Springfield Armory in records from the 1830s and 1840s. Springfield Armory is also highlighted by Chandler (1977) as showing an accounting system which was designed to summarise financial transactions, track the physical flow of goods and establish accountability for material loss or waste (Chandler, 1977; Fleischman and Tyson, 1998).

Developments came from all areas. Johnson and Kaplan (1987) and Chandler (1973) record that Marshall Field in Chicago was monitoring his stock turn as early as 1870. Chandler (1973) commented that for these 'new' mass marketers, such as Marshall Field, Montgomery Ward, Richard Sears and Alvah Roebuck, stock turn calculations were seen as a basic criterion of performance. High stock turn permitted high volume of sales with the same plant and personnel, cut unit costs and permitted a higher profit at lower margins. Thus it was imperative that they had all the information at hand to be able to constantly consider their performance in this area.

Andrew Carnegie, one of the shrewdest entrepreneurs of nineteenth century, used management accounting within the Carnegie Steel Company. Chandler, his biographer, stated that costs were Carnegie's obsession (Carnegie Corporation, 2005). One of his favourite dicta was "*watch the costs and the profits will take care of themselves.*" He also stated Carnegie had "*a fetish of using cost statements*" *web quotes.* Carnegie's background is interesting; one of his first jobs was in a cotton-mill, from there he moved to a factory, where he moved from the shop floor to becoming a clerk (due to his excellent penmanship). Next he became a telegraph operator and finally, before his 20th birthday, onto the railroads (as a telegrapher initially to the superintendent of the Pennsylvania Railroad's western division and moving into management later). Here he learnt all about the running of the railroad business and by 1861 he was already making large sum investment's in railroad, telegraph and oil. Carnegie had thus already seen cost accounting techniques operated in various successful industries before starting his own business empire (Alderson, 2005; Carnegie Corporation, 2005). Further, in respect of the insight Carnegie had in respect of cost accounting, he would have experienced innovation in the field of management techniques, in general. One of the first key players in Carnegie's development was Whistler, a former army officer on the Western Railroad, who adopted a "*modern, carefully defined, internal organizational structure*" (Hoskin and Macve, 2000) pg. 2. Another was the Pennsylvania Railroad (PRR), where the separation of financial and operating functions was achieved; "*of all the organizational innovators…the Pennsylvania Railroad made the most significant contributions to accounting*" pg. 109 (Chandler, 1977; Hoskin and Macve, 2000; Schmenner, 2001). Both are railroads that Carnegie worked within whilst the changes were being implemented.

Percy Longmuir, an American engineer published "*Recording and Interpreting Foundry Costs*" in the Engineering Magazine, September 1902. In it he outlined his 'novel way' of using information about material and labour standards to control actual costs by plotting both standard and actual weekly costs on a graph, showing instantly degrees of good or bad working. This being the first recorded use of variance analysis (Solomons, 1952). The technique was written up by Emerson and Harrison in 1918, being the first publication of the equations for the analysis of cost variances (Johnson and Kaplan, 1987). G Charter Harrison designed and installed the first complete standard costing system in 1911 for the Boss Manufacturing Company, Illinois, USA, makers of work gloves (Solomons, 1968). F. W. Taylor, the father of scientific management, introduced manufacturing cost systems to monitor physical labour and material efficiencies, not to monitor financial costs (Fleischman and Tyson, 1998; Johnson and Kaplan, 1987).

J. Maurice Clark, of the University of Chicago, was one of the earliest and most influential writers to advocate distinguishing *"the portion of expenses that rises and falls in direct proportion to changes in output from costs that are unaffected by increases or decreases in production"* pg. 154 (i.e. fixed costs) (Johnson and Kaplan, 1987). Clark's work dates to around 1911, his main text being *"Studies in the economics of overhead costs"* published in 1923. Clark is also credited with identifying the relevance of different costs for different purposes indicating there is no one correct usage, usage being governed by the varying needs of varying business situations and problems (Buckley and Chapman, 1998; Johnson and Kaplan, 1987). The London School of Economics 'opportunity cost', associated with the 1930s, is very similar to Clark's contributions. Ronald Coase, an economist, reinforced the relevance of variable costs for economic decisions and introduced the opportunity cost concept into accounting thinking. His 'modern cost accounting systems' were those existing in the 1930s and were still relevant in the 1980s when Johnson and Kaplan (1987) commented on his contribution to management accounting theory.

Taylor and Emerson were scientific management experts; Longmuir, an engineer; Clark and Coase being economists; Taylor, a management consultant; Field, Ward, Sears, Roebuck, and Carnegie, all entrepreneurs of their day. All have a place within the development of management accounting history. Of all, it is possibly the 'entrepreneurs', whether themselves or through the personnel working within their industries, who appear to have had the most impact on the techniques being employed within today's organisations.

The final developments in management accounting systems, according to Johnson and Kaplan (1987) occurred in the early decades of the twentieth century to support the growth of multi-activity, diversified corporations. This is reflected upon by Chandler (1973) who considered that after 1850 the 'new' large multi-unit enterprise, operated by managers rather than owners, appeared. With it came different decision-making requirements, where the use of new technologies permitted high-volume production and where the new transportation and communication systems encouraged high volume distribution. A prototype of this new organisational form was The Du Pont Powder Company, formed in 1903 as a combination of previously separate family-run or independent companies. Du Pont is credited with operating and budgeting activities and return on investment (ROI) measure (Johnson and Kaplan, 1987).

By the 1920s General Motors was a large, diversified enterprise, with multi-divisions. Their management introduced internal accounting systems, aimed at efficiency and aided operating managers to pursue the same corporate goals. In 1924, Brown, an employee of General Motors, developed the concept of *"the highest return consistent with attainable volume in the market"* and published a landmark article *"Pricing Policy in Relation to Financial Control."* In 1927, he set forth fundamental financial management principles in a paper entitled *"Decentralized Operations and Responsibilities with Coordinated Control"* (General Motors, 2007). These imply not only that technicians working in the field were considering new methods for improving the effectiveness of a business but also the concept of researching and publishing findings were embedded into the rationale of certain large businesses (at least within the USA). Fleischman and Tyson (1998) describe how in the mid 1880s articles describing ways to improve businesses performance first appeared in US journals sponsored by engineering societies. These were intended to spur owner/managers to adopt new and innovative administrative procedures. Authors were typically industrial engineers who promoted a variety of rational and systematic management procedures in trade publications and academic type conferences.

One of the main conclusions that can be drawn from the above is it appears the financial aspect of accounting's role is intensified with the (increasing) separation of ownership and management, such as in the Du Pont case (Johnson and Kaplan, 1987). This could also be concerned with the (increasing) change of ownership, the individual capitalist entrepreneurs being replaced by passive, dispersed shareholders (Hoskin and Macve, 2000; Yamey, 1977).

Another observation is the use of cost accounting information intensifies during crises, or when owners/managers suddenly discover a need to get control and find out what is going on, as in Wedgwood's pottery (McKendrick, 1970) and Pennsylvania Railroad (Chandler, 1977). It is not always clear how intensively the information continued to be used after the crisis had passed and how far it can be generalised as to the likely routine use of such information by other industrial concerns (Hoskin and Macve, 2000).

Relevance lost: Into the twentieth century

Management accounting was progressing swiftly during the later stages of the nineteenth century and early parts of the twentieth. However, around 1925, according to Johnson and Kaplan (1987), accounting history states that virtually all management accounting innovation stopped. Interestingly, researchers use this date in numerous articles; for example Garner (1954) and Loft (1986). Kaplan (1984) stated in his opening to the 1983 Annual Meeting of the American Accounting Association "*virtually all of the practices employed by firms today and explicated in leading cost accounting textbooks had been developed by 1925 ... there has been little in the innovation of design and implementation of cost accounting and management control systems*" pg. 391. It appears that by this time systems were in place and there was a relatively high credence placed on financial accounting; audit and standards. Cost accounts of labour, material, overheads; budgets for cash, income and capital; flexible budgets; sales forecasts; standard costs; variance analysis; transfer prices and divisional performance measures were all in place albeit in a rudimental stage. Significant innovations for project management were made in 1950s and 1960s in the aerospace and defence industries, including project accounting, cost-benefit analysis, program budgeting, zero-based budgeting and accounting for matrix organisation, however these appear to have had limited impact outside the industry (Johnson and Kaplan, 1987). Within Loft's (1995) recollections of interviews held, one from an interviewee who had been a cost accountant between the two World Wars recalled "*if the business was making a profit they weren't concerned with all my records ... in my time, I gathered a lot of statistics which have never been used*" pg. 22.

Progress didn't stop altogether; it came from different sources and sciences. Since the 1920s, most of the writings in management accounting was by academics developing their theories by logic and deductive reasoning. However, this entailed the hypothesis of likely problems since at this time academics theorised within the confines of their educational establishment. Thus potentially non-existent problems were 'solved' by using models, often based on very simple firms (one or two products), within a simple managerial structure (Johnson and Kaplan, 1987). Other sciences also started to become involved in management accounting development. In 1938, Eugene Grant, an engineer, introduced a basic concept around the time value of money (Grant et al., 1990). This was not a new idea, appearing since the early nineteenth century in actuarial literature and by the early twentieth century it was beginning to be used within political economy literature but it was new within the accounting world (Johnson and Kaplan, 1987).

During the 1950s, management decision-making became the focus of research for academic scholars in business schools. This resulted in academics from other sciences becoming involved with the concepts that surrounded the management accounting terminology. Microeconomic advances, along with the new area of operations research, introduced a plethora of new technological and analytical tools, which were applied to help managers in making a broad range of decisions. Capital budgeting, product mix, product profitability analysis, transfer pricing, cost control and divisional control and evaluation were all starting to emerge as management accounting techniques (Johnson and Kaplan, 1987).

Discounted cash flow came into full force in the accounting world in 1954, when Joel Dean published an article in the Harvard Business Review (Dean, 1954c) along with other associated texts (Dean, 1954a; Dean, 1954b). Dean had been writing and presenting his findings on cost techniques for some years, including his theories on break-even charts and cost structures (Dean, 1948). Having previously discounted the concept (Dean, 1951), three years later Dean's work triggered much academic activity, including consideration of historical developments of the technique (Parker, 1968). In 1956, The Engineering Economist was founded to encourage ideas and their dissemination on this new technique. Today it still "*seeks submissions in a number of areas, including, but not limited to: capital investment analysis, cost estimation and accounting, cost of capital, design economics, economic decision analysis, education, policy analysis (i.e. governmental), and research and development" web quote* (Taylor and Francis (Publishers), 2007). Textbooks and journal articles were soon in publication, eliciting their reader to the finer points of the technique and its uses (Lorie and Savage, 1955).

Vatter (1950) recommended at the time that two accounting systems be considered, with different degrees of completeness and timeliness, but this was not adopted. He wanted management accounting information to be relevant for management decision-making.

Even today's systems, with the use of sophisticated computers, rarely distinguish between the different forms of information i.e. managerial control information, which is needed promptly and the financial summaries, which are provided periodically (Johnson and Kaplan, 1987). Vatter's text, based on his University of Chicago lecture notes developed in mid-1940s, indicated its experimental nature. He introduced managerial accounting with six chapters on budgeting and managerial control (Johnson and Kaplan, 1987; Vatter, 1950). It is possibly one of the first texts of its kind and one of the first recorded use of the term management accounting or more specifically 'managerial accounting' in existence.

It was around this time the term 'management accounting' was being introduced, the term 'costing' disappearing. It wasn't just the name that was changing - management accounting was evolving or being developed from the older field of costing or cost accounting. Management accounting developed as it became recognised that accounting information could be useful for both planning and control. This shifted from the 'cost accounting', obtaining accurate or precise measure of costs, towards 'management accounting' with its emphasis on recognising the appropriate cost for particular decisions (Ryan et al., 1992). Management accounting also developed to help motivation and to provide efficiency (Johnson and Kaplan, 1987).

Transfer pricing appeared in the mid-1950s with decentralised organisational research that was being undertaken at the time, as well as by economists with their work on opportunity cost concept (Dean, 1955; Hirshleifer, 1956; Johnson and Kaplan, 1987). Economists proposed that the transfer-pricing problem should be solved by charging market prices for internal transactions and during the 1950s and 1960s this was the main method used (Baker et al., 2001).

During 1950s and 1960s accountants began devising cost accounting procedures that would be most relevant to particular decisions. The emphasis shifting from external to internal users of cost accounting data (Kaplan, 1982). However it should be noted that in Relevance Lost, Johnson and Kaplan (1987) refute the two central ideas from Kaplan's 1982 text; that management accounting is a more recent phenomenon than financial accounting and that cost accounting was developed to fill a need generated by the financial reporting process.

In the commentary of his life, Professor Anthony (1989) of Harvard Business School considers the differences between cost accounting and management accounting curriculum. He comments upon the fact that when management accounting courses first appeared in academic curriculum (around the middle of the twentieth century) they differed from what was being taught as cost accounting at the time in two main ways. First was the human aspect of the numbers which (the old) cost accounting overlooked. Management accounting took into account the idea that the end numbers were used by people to make decisions including how accounting information could influence behaviour. The second difference was that cost accounting focused mainly on full costing (finding the true cost) while management accounting covered a much broader range of topics.

Between 1960 and 1975, a surfeit of articles appeared in journals and texts showing how operations research techniques could be applied to help management decisions and control problems, especially within cost accounting. Many ideas were based on mathematical techniques, for example using simplex; product mix decisions; limiting factors; probability; computing opportunity costs or losses within optimisation models; methods for allocating overhead costs; joint and by-product costs; regression analysis; and other quantitative-based techniques were introduced into a field that had previously never encountered the like before (Johnson and Kaplan, 1987).

By the late 1970s and early 1980s there was a growing awareness of a gap between the theory and practice of management accounting. At that time management accounting researchers were developing sophisticated mathematical models which practitioners considered too abstract and unrelated to their needs (Ryan et al., 1992).

Today, accountants, managers, textbooks, and professional bodies use both terms, with emphasis on the 'management accounting' phrase. It has also been stated that, in its modem meaning, cost accounting is difficult to distinguish from management accounting (Parker, 1986). While Scapens (1991) noted that the terms cost accounting and management accounting now tend to be used synonymously in educational resources. This ambiguity has been exacerbated by researchers examining the historical development of accounting who have adopted an even wider range of related terms, including cost recording, costing, cost accounting, managerial accounting, and management accounting, some of which have been used interchangeably and others in a specific, discrete manner (Boyns and Edwards, 1997a).

Professional bodies originally constituted under a 'cost accounting' label changed their names in line with the 'new' terminology. The Chartered Institute of Management Accountants (CIMA) was founded in 1919 as the Institute of Cost and Works Accountants, its objective being to provide the range of information needed to plan and manage modern business. The Institute of Cost and Work Accountants changed the name of its journal - Cost Accounting to Management Accounting in 1965 and its own name to Institute of Cost and Management Accountants in 1972. In 1986 the Institute changed its name once more to the 'The Chartered Institute of Management Accountants', recognising the *"importance and commercial relevance of management accountancy" web quote* (CIMA, 2005).

In the USA – the National Association of Cost Accountants, founded 1919, changed its name to the National Association of Accountants in 1958, deleting all acknowledgement of there being a separate field. Their President, Lunnemann in his message of that year stated *"inasmuch as our membership now comprises a cross section of accountants and executives from many types of enterprise, our name no longer includes the restrictive designation of "Cost" accountant" web quote* (Institute of Management Accountants, 2005b). In 1972, the Certificate of Management Accounting programme was established. Its purpose was to *"recognise professional competence in the field of management accounting, and to fulfil the following objectives: To establish management accounting as a recognised profession, to foster higher educational standards in the field of management accounting, and to establish an objective measure of an individual's knowledge and competence in the field of management accounting" web quote* (IMA Saint Louis, 2004). Today it is the Institute of Management Accountants, changing its name once more in 1991 to *"better reflect its membership" (ibid,* 2005*).*

Historical summary

With the publication of Relevance Lost in 1987, Johnson and Kaplan evoked management/cost accountants to re-examine the origins of their discipline which had hitherto been largely ignored in their professional education. This stimulated academic research. From their own studies, Johnson and Kaplan (1987) offer a two stage development of management accounting. Considering the findings of other writers and historians on cost accounting, for example Fleischman and Tyson (1993), an earlier stage of development can be added. Considering further writers such as Ryan, Scapens and Theobold (1992) a final fourth stage can be included. Thus, four stages of development are being considered relevant to this study:

1. Fleischman and Tyson (1993) state that cost accounting practices measured up to the demands and complexities of the economic environment at a given time. During the industrial revolution (1760-1850) they considered cost accounting procedures commensurate with the level of economic activity, thus developing techniques as the requirements of the organisation demanded. Included in this stage is the concept that changes to accounting systems were undertaken to facilitate strategic decision-making, these changes being evolutionary rather than revolutionary (Boyns and Edwards, 1997a). Examples include labour and materials in job cost systems (Garner, 1954), capital investment appraisal (payback) (Johnson and Kaplan, 1987) and basic cost analysis (Edwards and Newell, 1990).

2. Traditional accounting histories mark the emergence of cost management in the mid 1880s, a result of newly developed scientific management principles (Fleischman and Tyson, 1993). The techniques of scientific management (1895-1915) being developed by those who were using the results of their revelations to make decisions, i.e. the managers and practicing engineers (Johnson and Kaplan, 1987). Confirming the work of Wells (1977) who, on reviewing early cost accounting innovations arising from this era, commented on the extensive communication (within the US) amongst the mechanical engineers who, on the whole, were responsible for the new managerial technology. Much of this communication was concerning systems that were already in use and not about theoretical approaches. Here the primary focus of accounting within businesses was on the determination of costs, particularly product costing and the control of direct labour, direct material and overheads. The innovators were cost accounting practitioners (Ryan et al., 1992). Examples here include cost analysis (Carnegie Corporation, 2005), operating and budgeting activities and return on investment (General Motors, 2007), flexible budgets, sales forecasts, standard costs and variance analysis (Ryan et al., 1992).

3. Johnson and Kaplan's (1987) also consider operations research; research undertaken by university researchers and communicated primarily to other academics. They state that researchers paid virtually no attention to working with actual organisations to implement their ideas or even to communicate very effectively with operating managers on the implications of their proposals for practice. Techniques were theoretical and references made to other works were also from the same vein, i.e. the academic writer, economist, operations researcher, and accountant. This was knowledge born not from researching firms but devising models articulated by 'theorists', models that were not developed for or tested on actual enterprises. The techniques offered here were not implemented into business.

4. During the second half of the twentieth century, the increasing awareness that accounting information should be appropriate to the needs of users, especially managers, started to emerge, leading to a fourth development stage. The emphasis now being on accounting information for managerial decision-making (Ryan et al., 1992). Developments here include those by practitioners, theorists and academics, both in the field of management accounting as well as other sciences. Examples include break-even charts and cost structures (Dean, 1948), discounted cash flow (Dean, 1954a), budgeting and managerial control (Vatter, 1950), activity-based costing (Cooper, 1987; Cooper and Kaplan, 1987), backflush accounting (Foster and Horngren, 1988), throughput accounting (Galloway and Waldron, 1988) and lifecycle costing (Berliner and Brimson, 1988). Some were implemented fairly quickly, others received limited implementation. Many of such innovations were advocated on the basis of their potential benefits within a theoretical framework. As empirical evidence emerged, their validity was assessed and techniques were further implemented (Bromwich and Bhimani, 1989).

Although the above serve as a vantage for this research, it must be noted that recent reviews of the history of cost and management accounting confirm the scope for future research in this field and participation in ongoing debates (Walker, 2008; Carmona, 2007), for example Carmona (2007) suggests the importance of socio-political and religious influences when seeking explanations for costing implementation in continental Europe and additionally calls for considerations into the periodicities of extant historical literature.

Research undertaken by Carmona and Mahmoud (2007) considers accounting, including a consideration of costing methodology, as early as 8000 – 3700 BC in Mesopotamia, considering the impact of economic trade activities between neighbouring tribes, which they consider led to some time after 5000 BC, to treasury functions, with tokens being developed to assist with tax and tribute assessment and collection. It should also be acknowledged that the main focus of this work is not the historical context of the techniques, nor the history of management accounting per-se, but the uses of management accounting techniques to aid decision-making in SMEs. However, pertinent relationships have been identified between techniques potentially utilised in SMEs and their historical backgrounds. This may be considered for future research, dependant on the outcomes of the research. A British technical accounting literature genealogy, outlining the development of management accounting can be found within the appendices.

Changing role of management accounting

The management accountant's role today includes the analysis of recent historical performance and usually includes forward-looking elements such as sales, cash flow, and profit forecasts, often matching budget to actual figures and considering variations. However, as can be seen by the plethora of modern day management accounting techniques, their role within a business has expanded greatly whereby the management accountants take a very active role in the running of the business. The work a management accountant produces will vary dependent on the requirements of the business they are employed within. Specifically, factors such as positioning of the firm, years of experience, the size of the company and the environment within which the company or business operates will be of influence. This is of more importance if there is a division of duties, with a business employing a separate management accountant. Many SMEs don't employ a full time (financial) accountant or bookkeeper and are thus unlikely to employ a management accountant, the role often remaining with the owner/manager.

This changing role of the management accountant has been intensively researched (Bromwich and Bhimani, 1989; Burns and Scapens, 2000; Gupta and Gunasekaran, 2005; Perren and Grant, 2000). However, rather than change being in the management accounting technique being adopted, it is often in how the technique is being used (Burns and Scapens, 2000; Perren et al., 2000). Some of this change can be attributed to the competitive economic situation of the late twentieth century, including mergers and acquisitions favoured by organisations during the 1970s and 1980s, followed by de-mergers and outsourcing of the 1990s and global competition. In addition, the advance in information technology which has taken place in recent years has meant that many of the cumbersome, time consuming collection of data has been made cost-effective. Furthermore, the development of the role of the management accountant within a business as a specific entity is evidenced through research as well as by the growth in the bodies catering for their professional development (Burns and Scapens, 2000).

These developments are not limited to the UK. A study undertaken by the Institute of Management Accountants in the USA highlighted a list of 30 work activities undertaken by the management accountant in the mid 1990s (Institute of Management Accountants, 2005b). Their research started by consulting management accounting text books, specifications of the Certified Management Accountants (CMA) and Certified Public Accountants (CPA) examinations and other professional associations within the USA and Canada, from which a list of several hundred work activities were identified. Interviews were then held with curriculum experts at colleges and universities across the USA and then through into the workplace itself whereby these 30 work activities were highlighted as the most important and most frequently used of management accountants within North America. These activities were then clustered into nine general categories which included; general accounting, management and cost accounting, business planning, business analysis and decision-making, control and organisation change and development.

In 1999, again in the USA, the Financial and Management Accounting Committee (FMAC) of the International Federation of Accountants (IFAC) published the sixth in the series of annual theme booklets. This offered readers insight into the activity of management accounting from authors based around the world. The main aim being to continue to shift their [management accountants] role to further enhance the quality and relevance of information, the process of decision-making and the agility of their organisations (IFAC/FMAC, 1999). Within this publication Stewart (USA) stated that management accounting functions can continue to evolve, the author stressing that the management accountants should work closely with managers to refine or redefine the nature of their function and position themselves as knowledge managers. Mevellec and Lebas (1999) (France) explore the evolution of cost management systems, calling for a shift from activity based to business processed based costing to reflect the change of priority in the operations of a firm. Landry and Chan (1999) (Hong Kong, China) highlight the fact, in their opinion, that new customer-focussed strategies adopted by many firms require new management accounting philosophy calling for management accountants to redesign systems, providing new measurements and new forms of information. They state they should move away from traditional functional reporting. Baker and Majid (1999) (Malaysia) proposed a new framework for the management accountant whereby accounting could be used to implement organisation of governance and control and to influence decision-makers. Prieto (1999) (Spain) argued that management accounting is an essential instrument for influencing behaviour, increasing knowledge and enhancing innovation within an organisation.

The overall conclusions were that their authors argued from various perspectives, all recognising that in order for the accounting profession to maintain it's relevance, those involved in the management accounting function should continue to adopt a more proactive, expanded role in enhancing the value creating ability of their organisations (IFAC/FMAC, 1999). However, it should be remembered that this was written from the view that a management accountant being a separate person within a business which is probably not strictly true of SMEs.

Contemporary management accounting research

"Despite the many strides the profession has made over the years, some still believe that management accounting practices haven't taken as strong a hold in organisations as they should."

(Mercereau, 2006) online article

The last decade has witnessed a dramatic growth in research investigating management accounting practice in general and product costing practice in particular. The scale of this expansion could probably be attributed to three main factors:-

1. Prior to the 1990s there was very little evidence available of management accounting practices. This led to Scapens (1991) commenting on the gap in knowledge between management accounting theory and practice, carrying the implication that theory had little influence on practice (Otley, 1985). Research of practice helps to substantiate

the existence and extent of such a gap and identifies possible reforms of the theoretical research agenda (Brierley, 2001).

2. Interests in examining how costing practices are changing because of changes in the business environment of many organisations (Brierley, 2001; Guilding et al., 2005).

3. The enormous amount of publicity in the late 1980s relating to criticisms of product costing practice and how practices had lost their way (Burns and Scapens, 2000; Brierley, 2001).

Research carried out in the UK indicates that companies operate one accounting system but the evidence is mixed as to the extent to which financial accounting dominates management accounting and whether management accountants have the flexibility to produce the information necessary to meet management accountant's needs (Brierley, 2001). It has been found in the past that management accounting information tends to be prepared on a similar basis to financial accounting information (Drury et al., 1993). As an example, 9% of manufacturing units surveyed by Drury and Tayles (2000) had separate costing systems for stock valuation and another for decision-making. However Bailey (1991) found that the financial accounting and management accounting systems were integrated. It was recorded that just over half of the companies in Brierley et al.'s (2001a) study produced product cost information for decision-making that was in some way different to the information used for stock valuation. Findings from a recent document-based interviewing study of 41 UK manufacturing companies revealed that virtually all the techniques developed since the late nineteenth century, and evident in the historical literature, are still in use today. Examples included 'traditional' techniques such as absorption costing, standard costing and marginal costing as well as 'contemporary' techniques such as activity-based costing and throughput accounting (Dugdale et al., 2005). Burns and Scapens (2000) claim that although they found it hard to dispute findings of past research which shows traditional management accounting techniques continue to be employed in businesses, they comment that these surveys fail to identify changes in the way that traditional accounting techniques are now used in practice.

Small and Medium Sized Enterprises (SME)

"Some are eccentrics, others painfully correct conformists; some are fat and some are lean; some are worriers, some relaxed; some drink heavily, others are total abstainers; some are people of great charm and warmth, some have no more personality than a frozen mackerel."

(Drucker, 2001) Pg 40

Multiple definitions of SME ranging from that of the Bolton Committee's 1971 Report on Small Firms (Bolton, 1971) through to the European Commission 1996 (Europa, 2004) are available for adoption in any research programme (ACCA, 2004). The purpose of this section is to consider the range of definitions available and consider the most appropriate to be utilised by this study. It will also consider the literature reflecting the characteristics of those who start their own business as well as the organisations that offer support and advice to SMEs since, although it is possible to classify an organisation using a definition, the term SME belies the diversity of these organisations, they differ by size, industry, ambitions and motivations of their owners (Barrow and Brown, 1997; Drucker, 1963; Mitchell et al., 1998; Stanworth and Gray, 1991; Storey, 1994). More importantly, for the purpose of this research, SMEs differ in their knowledge base, the skills set of the owners and workers and their utilisation of 'accounting' tools to help them manage and make decisions within their businesses (MediaLogic, 2005; Simpson et al., 2004; Storey, 2004). Certain strategic growth objectives of smaller owner/managed and family controlled businesses are influenced by a plethora of issues (Perren and Grant, 2000; Perren et al., 2000). Keasy and Watson (1993) state that the smaller, privately held firm is often an extension of the owner/manager's personality and ethos and that this greatly influences the human developments, capital structure, investment decisions and strategic position. The parameters constructed to consider the definitions of SMEs will be utilised during the survey stage of the study. The characteristics and ethos of each SME as well as knowledge base will be considered when analysing the findings from the empirical and case interviews.

Justification of the study of SMEs

Within the EU SMEs represent over 99% of all enterprises and provide around 65 million jobs (Europa, 2004). At the start of 2006, UK private sector enterprises employed an estimated 22.4 million people, and had an estimated combined annual turnover of £2,600 billion (Small Business Service, 2006). In the US, small firms totalling some 23.7 million businesses, employ half of all private sector employees (US Bureau of the Census, (Popkin, 2004). This indicates the importance of SME within both the EU, the UK, and globally.

The Enterprise Commissioner, Erkki Liikanen, commented that SMEs form the back bone of the European Economy. He considered them key to entrepreneurial spirit and innovation in the EU and thus crucial to ensure EU competitiveness adding that a proper definition of what type of enterprise should be considered an SME makes it easier to identify their needs and to develop efficient policies to compensate for the specific problems linked to their small size. Concluding that this is vital for the competitiveness of an enlarged European Union, its growth and employment (Liikanen, 2002).

It is clear to see why there is continued interest in the SME sector. Small enterprises alone accounted for 47.1% of employment and 37.2% of turnover (Small Business Service, 2006). Additionally, they offer a rich source of differentiation for research. From the varied characteristics of owner/manager, a plethora of management styles and skills, ethnicity, gender, educational background, through to the diverse natures of the business ventures themselves. This multiplicity of facets brings with it numerous areas for research which in themselves can often bring problems and limitations. For example, the plethora of definitions of what constitutes an SME and/or the concept of being able to replicate findings from one part of research into another. Where there are so many characteristics, considering a finite solution to research is impossible. However, this in itself can lead to the justification of research into this diverse business world. It is also imperative that any researcher considers the boundaries of the research before embarking on the study, including a pertinent definition of what constitutes an SME.

Definition of SME

"The small firm sector is extremely large and remarkable heterogeneous ... Their diversity is even more striking than their number.... There is also extreme variation within the sector as regards efficiency, methods of operation, the nature of the market served and the size of the resources employed."

(Bolton, 1971) Preface

There is no single definition of the small firm, mainly because the wide diversity of businesses. One definition available is from the Bolton Committee 1971 Report on Small Firms; *"a small firm is an independent business, managed by its owner or part owners and having a small market share" pg. 13* (Bolton, 1971). The Bolton Report also adopted a number of different statistical definitions recognising that size could be relevant to sector, however, it commented that a firm of a given size could be small in relation to one sector where a market process is large or where there are many competitors, however a firm of similar proportions could be considered large in another sector with fewer players and/or generally smaller firms within it. The Bolton Report also recognised that it may be more appropriate to define a business by the number of employees in some sectors and or to use turnover in others, a method often adopted by the UK Government.

Alternatively a small or small / medium size business can be defined by utilising the UK Companies Act (2006). Here a business is "small" or "small or medium size" in a period of accounts if it satisfies at least two of the conditions outlined in Table 1 for the period of accounts or the proceeding period of accounts.

Table 1: Definition of SMEs (Companies Act 2006)

	Turnover (not more than)	Balance sheet total (not more than)	Number of employees (not more than)
Small company	£5.6 million	£2.8 million	50
Medium-sized company	£22.8 million	£11.4 million	250

(Source: Companies Act 2006)

The Department for Trade and Industry (DTI), now know as Department for Business, Enterprise and Regulatory Reform (BERR) and Department for Innovation, Universities and Skills (DIUS) (BERR, 2007; DIUS, 2007) also considers headcount an appropriate method for defining SMEs, being: micro firm: 0 - 9 employees, small firm: 0 - 49 employees (includes micro), medium firm: 50 - 249 employees, and large firm: over 250 employees.

Additionally, DIUS acknowledges the following set of criteria as being indicative of SME status: An independent trading organisation, with no parent company, with turn-over of less than £11.2m per annum, and with less than 250 employees. DIUS also acknowledge the best description of the key characteristics of a small firm remains that used by the Bolton Committee in its 1971 Report on Small Firms but that in practice schemes which are nominally targeted at small firms adopt a variety of working definitions depending on their particular objectives (*ibid,* 2007).

In February 1996 the European Commission set out a single definition of SMEs. This was updated, including a new definition for micro-businesses, with the new Recommendation (2003/361/EC) coming into force January 2005, being addressed to the Member States, the European Investment Bank and European Investment Fund (Europa, 2004) and is outlined in Table 2.

Table 2: Definition of SMEs (EC)

Enterprise category	Headcount (unchanged)	Turnover	or	Balance sheet total
Medium-sized	< 250	∈50 million (in 1996: ∈40 million)		∈ 43 million (in 1996: ∈27 million
Small	< 50	∈ 10 million (in 1996: ∈7 million)		∈ 10 million (in 1996 : ∈5 million
Micro	< 10	∈ 2 million (previously not defined)		∈2 million (previously not defined)

(Source: 2003/361/EC)

After considering the various definitions available to this study, it has been decided to utilise this set of parameters to identify the target group in this research. However, although it is possible to classify an organisation using a definition, the term SME belies the diversity of these organisations, they differ by size, industry, ambitions and motivations of their owners and this will be acknowledged within the analysis of the survey findings.

Characteristics of SMEs

Small enterprises have an extreme range of forms, operating in every sector of the economy, from computer software to candle-making and from insurance broking to instrument manufacturing (Curran and Blackburn, 2001). SMEs have distinguishing characteristics other than their size. They are unlisted entities, run by owners who, conjointly with family members and friends, provide the equity base. Alternatively, non SMEs are managed by employees (not owner/entrepreneurs) who must report to dispersed owners (Baskerville and Cordery, 2006). According to research by the Small Business Services (SBS), the dominant characteristic of small businesses in the UK is the fact that the majority of such businesses have no, or very few, employees (Small Business Services, 2003; 2005). This characteristic is embedded within the SME sector and appears to change little over time. Considering all UK businesses at the start of 2005, the number of enterprises with no employees totalled 3.2 million, equivalent to 72.8 per cent of all enterprises, with an estimated combined turnover of £190 billion (Small Business Service, 2006). These businesses adopt the characteristics of the owner. As a business grows, either through more employees or owners, its characteristics will become more varied although owner/managers personalities are often seen throughout a business's structure and life. In general, the bigger an organisation, the more elaborate its structure, the more specialised the tasks performed and the more differentiated its units. In addition, the administrative components develop to meet the needs of the expanding requirements (Mintzberg, 1979). Organisational characteristics of businesses differ significantly depending on their size (Blau, 1970); businesses are as varied and individual as the men who founded them (Bolton, 1971).

The share of employment provided by SMEs varies greatly from one industry to the next, varying in proportions over time. At the start of 2003, 86% of employment in the construction industry is accounted for by SMEs while in finance it was only 23%. Of the 2.3 million enterprises with no employees, 25% were in construction sector (Small

Business Services, 2003). The 2005 survey found 72% of businesses with employees were employed in the service sector, 8% in construction and 17% in the production industries (Small Business Services, 2005).

Owner/managers and entrepreneurs

Not only are businesses structured in extreme diverse forms, the entrepreneurs and owner/managers come from different genders, from a wide range of ethnic, cultural and educational backgrounds and from every age group. Some start a business from nothing, others inherit or buy a business, on their own, with others or in family-orientated organisations (Curran and Blackburn, 2001); 67.3% of businesses owners described their business as family owned (Small Business Services, 2003); others are funded by people who have come together solely because they share common goals, complementary skills or access to capital.

The SBS Annual Survey state the most common reason, accounting for 28% (2005), 29% (2003) of new businesses, was a wish to be independent and be their own boss. The 2003 Survey added, of the same 29% also included the phrase "to better themselves" as another reason for their start up; 14.5% cited their wish to make money and another 11.5% wanting to improve their careers and prospects. Of all of these new businesses (set up within a previous 4 years) some 62.3% had previously been in full time employment before starting their own business (2003), which had rose to 71% (77% for new businesses with employees) by the 2005 Survey. Only 6.8% (2003) or 7% (2005) had classed themselves as being unemployed previously (Small Business Services, 2003; 2005).

Another consideration is that of whether there is any difference between the classification of owner/manager and entrepreneur. It is apperceived that the persona of the owner/manager, whether 'labelled' and entrepreneur or not, has a direct influence on the SME, to such an extent that any consideration of SME owner/manager decision-making is in fact an investigation into the decision-making process of the owner/manager. Few concepts reflect more scope and ambiguity than 'entrepreneurship' (Reynolds and Curtin, 2007). Business creation began to attract 'academic' attention in the sixteenth century leading to the observers beginning to write about these social and economic phenomena. It was noticed that some individuals specialised in organising the resources money, people, and suitable locations for a new venture or initiative. This led to the creation of the concept of an 'entrepreneur,' or someone who engages in "entrepreneurial" activities (Reynolds and Curtin, 2008) from the French *entre preneurs*, literally meaning 'between takers', which was the development of a phrase to describe an individual *"who unites all means of production and who finds in the value of the products ... the reestablishment of the entire capital he employs, and the value of the wages, the interest, and rent which he pays, as well as profits belonging to himself"* pg. 29 (Say, 1816), which implies that the entrepreneur bears some risk or uncertainty, including excessive optimism about the extent of a business opportunity (Cantillon, 1730). However, this does not imply that the entrepreneur is a homogeneous grouping and in no way does it imply that the SME, the flagships of entrepreneurship are in any way similar to one another. Sarasvathy (2008) uses contrasting metaphors of making a patchwork quilt and solving a jigsaw puzzle to illustrate differing approaches adopted by entrepreneurs: On the one hand, the entrepreneur can be viewed as someone who solves the complex jigsaw puzzle of a profitable opportunity. The job of the entrepreneur is to discover the jigsaw and put it together. When solving a jigsaw puzzle, one has little discretion in putting the pieces of the puzzle together if the aim is to solve the puzzle (which has a single solution). Alternatively, the entrepreneur may be more similar to a patchwork quilt-maker; the quilt-maker has greater latitude than the jigsaw solver in that the quilt may have a set number of patches (similar to the pieces of the jigsaw puzzle), but the pieces can be joined together in a number of ways that produces different quilts that can be equally desirable. Further, the patchwork quilt-maker has more opportunities for collaboration than the puzzle solver. The quilter may work with others who bring along different patches that can contribute to the quilt. The puzzle solver can also collaborate with others but only with those who have the pieces to the same puzzle.

Literature examining entrepreneurship expanded considerably in the latter part of the twentieth century, reflecting widespread recognition of many contributions from entrepreneurial initiatives (Reynolds and Curtin, 2008). According to SME literature, there is a distinct difference between the small business owner and the entrepreneur; Birch (1987) distinguishing between income substituters (substituting paid-employment income with business income) and entrepreneurs (being committed to the growth of their business). Papadaki and Chami (2002), in their research for Industry Canada, conclude that for entrepreneurial ventures the willingness of the owner-manager to grow is as important as his ability to foster and manage growth. Despite the substantial increase in attention from scholars and policymakers, detailed research on the entrepreneurial process itself has been modest. This gap has reflected both the amorphous nature of entrepreneurship and SMEs; any differential there may be between aspects such as the psychology or persona of the entrepreneur as opposed to an owner/manager and the lack of procedures for producing representative samples of entrepreneurs to scientifically investigate the business creation process (Reynolds and Curtin, 2007). Acknowledgement must therefore be made when analysing findings from this study, as to the differing styles and personas that the owner/manager or entrepreneur and the SMEs researched may have.

Support for SMEs

When considering how decisions are made within a SME, it is important to acknowledge outside influences. Information contained within the SBS Annual Surveys show that 26% (2005) (35.6% (2003)) of new business owners had not sought advice before starting up. 22% (17.8%) had consulted only friends, family or informal contacts. Amongst the other half of these new start ups, 20% (22%) had consulted accountants, 16% (16.5%) banks and 5% (7.3%) lawyers. Only 18% (14.7%) had solicited counsel from public advice (support agency), i.e. the more formal source is seen as professional advice for new start-ups. This is not necessarily reflected in all SMEs. The growing influence of accountants was acknowledged by the Daily Telegraph (6 July 2004), who reported on DTI findings claiming that in addition to basic accountant to services, 72% of accountants in business provide general management advice to the small business sector on a regular basis, as do 52% of practice accountants. However, the SBS recorded that just 24% (2005) of SMEs had sought general advice or information for running their business from any sources. The likelihood of seeking advice increases with the size of the business and also increases with their propensity to expect business growth in the coming two or three years. The most common reasons for not seeking general business advice were the lack of need for it (75%) or the adequacy of internal sources (19%) (Small Business Services, 2005). Further research has indicated that even when the need is great, small businesses frequently do not seek out the providers of services and that they give a variety of explanations for this, including: The need for support is not appreciated and/or they feel that the available support is not appropriate to their needs or is too costly. Owners fear that exposing their efforts to others may lead to their ideas being stolen and/or because owners fear that the experts may despise their efforts and because they believe that they do not have the interpersonal and technical skills to deal with sophisticated advisors. The traditional approach to consultancy is off-putting to many small businesses, with potentially insufficient information about the availability and cost of services to make a rational choice (Bridge et al., 2003).

It is thus imperative to consider outside influences on the SME owner/manger and on their decision-making process. It is therefore considered a necessity to request information concerning these influences from both case study participants and as part of the questionnaire part of this study.

Decision-making processes

Previous studies have concluded that high failure rates among European SMEs appear to be linked to managerial weaknesses (Gibcus et al., 2005; Gray, 2004; Storey, 2004). Very few of these studies however consider the exact area of the weakness, for example considering whether it is linked to the character of the owner/manager or whether it is concerning his/her decision-making abilities. There are many studies that focus on the decision-making process of large firms, but only a few pay attention to small firms (Gibcus et al., 2005). Additionally, the effective use of external support and delegation of responsibilities to subordinates (and their skills development) is linked to the size of an organisation with the smallest firms being shown consistently over time to be generally growth averse and resistant to retraining, staff development and other support initiatives (Gray, 2004; Storey, 2002; 2004). Additionally, external support is often seen as not "very important" by SME owner/managers (Gobeli and Seville, 1989) and is often not employed (Davis et al., 2009).

In general, the decision-making process in small businesses will be less formal and more personalised than in larger ventures. It is vital that decision-makers are clear about their strategy, since it forms the basis for all other decisions (Payne, 2008). In a rational approach, objectives are set, alternatives are investigated and economic evaluations are made of alternatives. In a large business the distance from top to bottom and the consequent number of layers and communication steps, may mean that the message and the rationale behind it, can be distorted. In small businesses, the omnipresence of the owners can mean that everyone in the business hears a clear articulation of the goals and objectives. However the smallness of the business and the potential lack of managerial skills of its owner can also mean that goals are not articulated at all. Clear objectives facilitate rationality, but rational economic decisions often depend on having access to large amounts of information and the employment of sophisticated quantitative techniques to make sense of it. The lack of resources in small businesses and their heavy reliance on information from personal contacts, are unlikely to encourage rational evaluations of alternatives (Bridge et al., 2003).

Strategic decision-making in small firms differs from large firms for various reasons. Firstly, entrepreneurs face a more hostile or uncertain environment in their decision-making activities. They do not have access to extensive information that managers of large firms may have. Managers of large firms tend to be backed up by staff members to continuously scan the environment and gather information (Busenitz and Barney, 1997).

Secondly, the entrepreneurial environment is dynamic and complex. Although this may also apply to large firms, the effects of dynamism and complexity seem to be stronger for smaller firms (Covin and Slevin, 1991). Large firms often develop decision-making routines that simplify the process of decision-making for managers. Entrepreneurs do not develop such routines and often act on the basis of opportunism (Busenitz and Barney, 1997), often based on prior experiences. Intuitive-humanist models of decision-making suggest that intuitive judgement distinguishes the expert from the novice (Rycroft-Malone et al., 2009).

Thirdly, entrepreneurs are often believed to have specific characteristics that influence the decision-making process and are distinct from other people (Brouthers et al., 1998). Entrepreneurs are decisive, impatient, action oriented individuals who are less comprehensive in their decision-making activities than managers from larger firms (Gibcus et al., 2005); the expert does not rely on analytical methodology in order to confirm actions considered necessary (Rycroft-Malone et al., 2009).

The dynamics of financial management processes and decision-making are influenced by many factors, including both internal management issues and external environmental issues. Financial management practices of small firm owners have often been characterised as fire-fighting; dealing with problems as they arise on a day-to-day basis. A recent study (Deakins et al., 2001) found that after observing these owner/managers' practices over a prolonged period, their behaviour occurs in a more evolutionary fashion, with the role of critical events in small firms being important for determining the learning of owner/manager giving rise to an evolutionary approach to decision-making. Critical events could change behaviour which could lead to gradual changes in management practices.

SME entrepreneurs tend not to take decisions along functional frameworks (Gartner et al., 1992; Grant et al., 2001). Instead any management decisions are likely to be intertwined and embedded in decisions concerning the holistic running of the enterprise and research undertaken should try to mirror SME owner/manager decision-making processes (Gilmore and Carson, 1996). Grant et al. (2001) considered how to research SME entrepreneurs' decision-making in the context of their own environment, in order to reach an in-depth understanding of such phenomena. The key findings of their work included the conclusion that SME entrepreneurs develop competencies for doing business through experiential learning. This study emphasised how entrepreneurs made a concerted effort to improve their decision-making by building on their existing competencies and by actively developing their experiential knowledge over time. Deakins (2001) suggested that SME owner/manager decision-making is grounded in the particular contextual environment in which they operate.

Many potential business owners start their new venture on their own, their intentions being to make their own decisions and their own profits (Small Business Services, 2003; 2005). However this is possibly only true when an owner can fund his business. Having to raise finance to run the business brings others into the decision-making process; with more external financing brings more external pressures and as such decisions made by an 'internally funded' owner/manager (in the past) can be complicated by the owners of external funding requiring more 'paperwork' to be developed and presented prior to any required funding being made available and thus any decision being implemented. Brookfield (2001) considered problems accountants may face when acting as accountants or advisors to SMEs linked to their financial requirements. When reviewing his ranking, it is noticed that the further down the 'list' a business moves, (thus the larger the business venture), the amount of information the external provider of finance would require is likely to increase and time spent between idea and implementation would also be increased. This would imply that those owners who would wish to keep more control over their decisions would be more likely to keep their businesses on a smaller scale. Additionally, time horizons for planning, whether formal or informal, will tend to be much shorter in a more owner controlled business. Moreover, decisions are much more likely to be influenced by an owner/manager's emotions and personal interests than by objective analysis (Bridge et al., 2003). This confirms findings that it is the desire for independence that is consistently the most commonly cited career-choice motive reported by SME owners (Bolton, 1971; Gray, 2002; Hakim, 1988) especially when considering these businesses which remain relatively small, i.e. within owner/manager control.

Finally, behavioural theory (Cyert and March, 1963; 2001) considers that those who make decisions are restricted in their decision processes since firms are usually unable to gather all the relevant information and perfectly calculate expected outcomes, therefore the decision-makers have to settle for a less than ideal solution. It holds that individuals make decisions while they are operating within the limits of bounded rationality, whereby the definition of a situation is likely to be incomplete: It is impossible to generate all alternatives; it is impossible to predict all the consequences of each alternative; and final decisions are often influenced by personal and political factors (Huczynski and Buchanan, 2007). The neo-classical view is that the firm enjoys perfect information and certainty about environmental outcomes, with no control or adaptability problems. A neo-classical firm maximises its profits and suffers no dysfunctional internal resource allocation problems. Further, the neo-classical model did not recognise firm heterogeneity, strategic behaviour and performance (Pierce et al., 2008). As can be seen from the above considerations of decision-making within SMEs, the neoclassical view of organisations would not apply, since by their very nature, SMEs are individual, usually based around the persona of the owner/manager, they can offer contradiction and diversity, are not homogeneous and most look for survival not profit maximisation (Baskerville and Cordery, 2006; Sian and Roberts, 2009).

A fundamental part of this research is to consider how owner/managers of SMEs make their decisions utilising management accounting techniques. It will be important not only to consider their decision-making techniques in general, for example whether they could be defined as fire-fighter or a gardener (a gardener considers long term, strategic planning; the owner/manager considering their businesses from a strategic view); as well as the techniques employed to aid those decisions; the management accounting techniques in particular. The size, age, financing, structure and external support should also be considered, alongside the concept of entrepreneurial spirit.

Contingency theory

Contingency theory, like situational theory, contests that there is no one way that is better than another with regard to leadership styles; one style being effective in some scenarios but not in others. Whereas situational theory focuses on the behaviours that the leader should adopt in order to be an effective leader, allowing for situational factors, contingency theory takes a wider view to include additional factors such as the leaders capabilities and other factors that may influence the scenario. Contingency theory infers that a leader, or in the case of an SME an owner/manager, may be highly effective in one situation but if s/he were moved to an alternative situation, their leadership style may not be as successful. Additionally, if factors around them change, for example when the business grows or changes direction, their leadership qualities may not be a good match for the new set of factors. The assumption is that the owner/manager's abilities are contingent upon situational factors. These factors include the external influences; various situational factors including the economic environment, technological aspects, the legal environment, the organisations stakeholders influences, and the behaviours, beliefs and capabilities of their employees (followers), as well as internal (to the person) factors; the capabilities of the leader him/herself, age, sex, educational background, and their preferred style of management, for example

Vroom and Yetton's (1988) Decision Participation Contingency Theory (Normative Decision Theory) considers contingency theory within a decision-making situation and states that how effectiveness the decision procedure is will depend upon a number of aspects of the situation:

- The importance of the decision quality and acceptance.
- The amount of relevant information possessed by the leader and subordinates.
- The likelihood that subordinates will accept an autocratic decision, or the likelihood that subordinates will cooperate to make a good decision if they may participate.
- The amount of disagreement among subordinates with respect to their alternatives.

Considering this from the SME owner/managers context, all decisions taken within the organisation will be important, thus the information required will need to be of a quality sufficient to make relevant and timely decisions. In general, staff within the organisation will, by the nature of their employment, be respectful of the decisions made by the owner/manager even though they may not agree with them and enact directives of the owner/manager in respect of the decision made. They are also likely to participate in the decision-making process if called upon to do so, either by the owner/manager or the situation. In this respect, although contingency theory is considered relevant to the decision-making process, it has been considered within this review and acknowledged as a factor but no further investigation into its effect/influence on the decision-making processes of the SME owner/manager is to be undertaken.

Management accounting and the SME

Otley's (2001) viewpoint is that much management accounting research appears to have lost its way from real issues and problems facing managers in small, medium and large companies. This is confirmed by Jazayeri and Cuthbert (2004) who considered the current research in management accounting, concluding that small and medium sized firms research was lacking stating that during the first 10 years of publication of Management Accounting Research (1990 – 2000), only one special issue was devoted entirely to management accounting in the small firm.

Little research has been published on accounting and financial management in SMEs, although this is changing, slowly. Sweeting et al. (2003) found the dominant consideration for the small businesses they researched was that cash and tax are king and that these businesses had a relatively sparse understanding of organisational costs leading to the relatively low use of business relevant techniques and practices including a limited use of cost information in budgeting. They concluded that the results were also disturbing because they indicated that owner/managers seemed unwilling to access information from the accounting profession or other advice agencies. This research confirmed the findings of Berry et al. (2002) would found a large number of owner/managers in SMEs do not regard cost information as important in key business processes. Another study, based on financial accounting, found that considerable variety exists in the financial management practices of small firms, with some owner/managers capable of adopting sophisticated approaches including full strategic and financial planning methods (Deakins et al., 2002). Earlier financial management research had also found that owner/managers considered quality of inputs and outputs and intangible indicators more important than some more 'traditional' methods of performance indicators and that monitoring of cash was more important than profit to consider the success of their business (Jarvis et al., 2000).

This study offers to redress some of the gaps in the research by offering an insight into the uses of management accounting techniques to aid decision-making in SMEs, although caution is advised in the use and generalisation of emerging results due to the small sample chosen from a restricted area of the UK.

Parameters of the study

From the literature review, a set of clear parameters have been constructed to assist with the collection of relevant data. These can be seen in table 3 below. These align to the research questions posed, being an investigation into the main (financial) decision-making processes adopted by SMEs, with an additional consideration of who would be the main decision-maker. An identification of the management accounting technique considered relevant to this decision, with an emphasis on the background of that technique, and an investigation into whether the historical background of a management accounting technique has an influence on its use within the decision-making processes or an SME owner/manager. It can be noted that due to the limitations of the questions to be asked of both empirical study and case interview participants, the definition of SME is restricted to a head count – the other defining areas considering what is potentially considered to be confidential information, especially to an SME.

Table 3: Study parameters

Definition of SMEs (EC)		Management accounting techniques: Background / historical context		SME Organisation
Enterprise category	Headcount	Academic	Engineer	Owner/managers Characteristics
Medium-sized	< 250	Mathematician	Entrepreneur	Influences
Small	< 50	Economist	Technician	Entrepreneurial 'spirit'
Micro	< 10	Scientific Management		Size
(Source: 2003/361/EC)				Industry

Conclusion

In conclusion, this review has explored the existing literature in the fields of management accounting and SMEs. In addition, it has considered the decision-making processes adopted by businesses. It has noted the absence of a definitive and agreed definition of SME, acknowledging the diversity of definitions and considering those pertinent to this study. The historical context of management accounting has been considered in great depth since it is considered this area has great influence on the techniques being adopted by SME owner/managers in their decision-making processes.

Whilst undertaking this literature review, other sources of research were considered and although not all are explicit within this review, all will have some influence on the researcher and as such need to be acknowledged. These additional studies considered the role of the entrepreneur within business; techniques adopted by SMEs in other areas of their business, for example marketing, research and systems development. Financial accounting techniques within SMEs is another rich source of prior research which has been considered alongside the plethora of information sources available to SME owner/managers to aid in their decision-making processes, from organisations such as Business Link, through to bank managers and accountants.

From this literature review, areas of significance have been identified as important to this study:

The background to the management accounting techniques being used, specifically its historical context:

Management accounting techniques became more widely adopted by those working within the fledgling industries of the Industrial Revolution. Over time, others, such as mathematicians, academics, economists and technicians added to the portfolio of techniques available. One area of this study will consider those techniques being adapted to aid decision-making aligned to the historical background of the method.

The definition of an SME being adopted for this study:

It is important to have clear parameters to any study. In order for prior research to be considered in line with this study, the parameters of those studies must be considered in line with the parameters of this study since any variation needs to be considered as to its material effect on results. For the purpose of this research it has been decided to utilise the EC definition outlined in Table 2 as discussed previously in this chapter.

Characteristics of SME owner/managers, including entrepreneurial 'spirit':

It is important to acknowledge that some SMEs are little more than the owner/manager, whereas others have a depth and breadth of influences. The differing techniques being adopted within an SME will reflect this and thus to be able to bring understanding to why some techniques are being adopted, it is important to consider the characteristics of the owner/manager alongside this. Likewise the historical background of the owner/manager needs also to be explored since factors such as previous business failures, education, knowledge of business techniques, and knowledge of the industry can all have influence over the owner/manager and their decision-making processes.

The support available to owner/managers when making decisions:

Aligned to the previous area, the support mechanisms available to each owner/manager need to be considered since this can expand the influence on the decision-making processes. An owner/manager with a bookkeeper or accountant for example, may be more likely to use management accounting data when making decisions since it is (potentially) more readily available, to one who does not have the data at hand.

These areas will all be considered when constructing the conceptual framework for this study, as well as the questionnaire pro-forma and considering the case participants. Additionally, prior research methodology will be considered aligned to the research requirements of this study and an apposite methodology will be considered and appraised within the methodology chapter.

Chapter 3: THE CONCEPTUAL FRAMEWORK

Conceptual frameworks are the keys to fruitful codification; the step that raises the inventory beyond simple accumulation toward real significance.

(Hill and Hansen, 1960) p.299

Introduction

The conceptual framework for this study will be developed alongside both the review of the theoretical literature and initial research into methodology as well as being considered as part of and in parallel with the interpretive process of the research; a convergence of theories and concepts. The initial conceptualisation will be a consideration of the evolution of the interpretive themes relevant to this study; the decision-making process within an organisation and the factors that inform that process, especially within the SME. This will assist in highlighting the different aspects of the study, allowing for greater clarification through diagrammatical analysis. Each of the emerging themes will then be considered, converging within a grounded-theory conceptualisation considering the influences on management accounting techniques used to aid decision-making in SMEs which will be considered within the conclusions of this study.

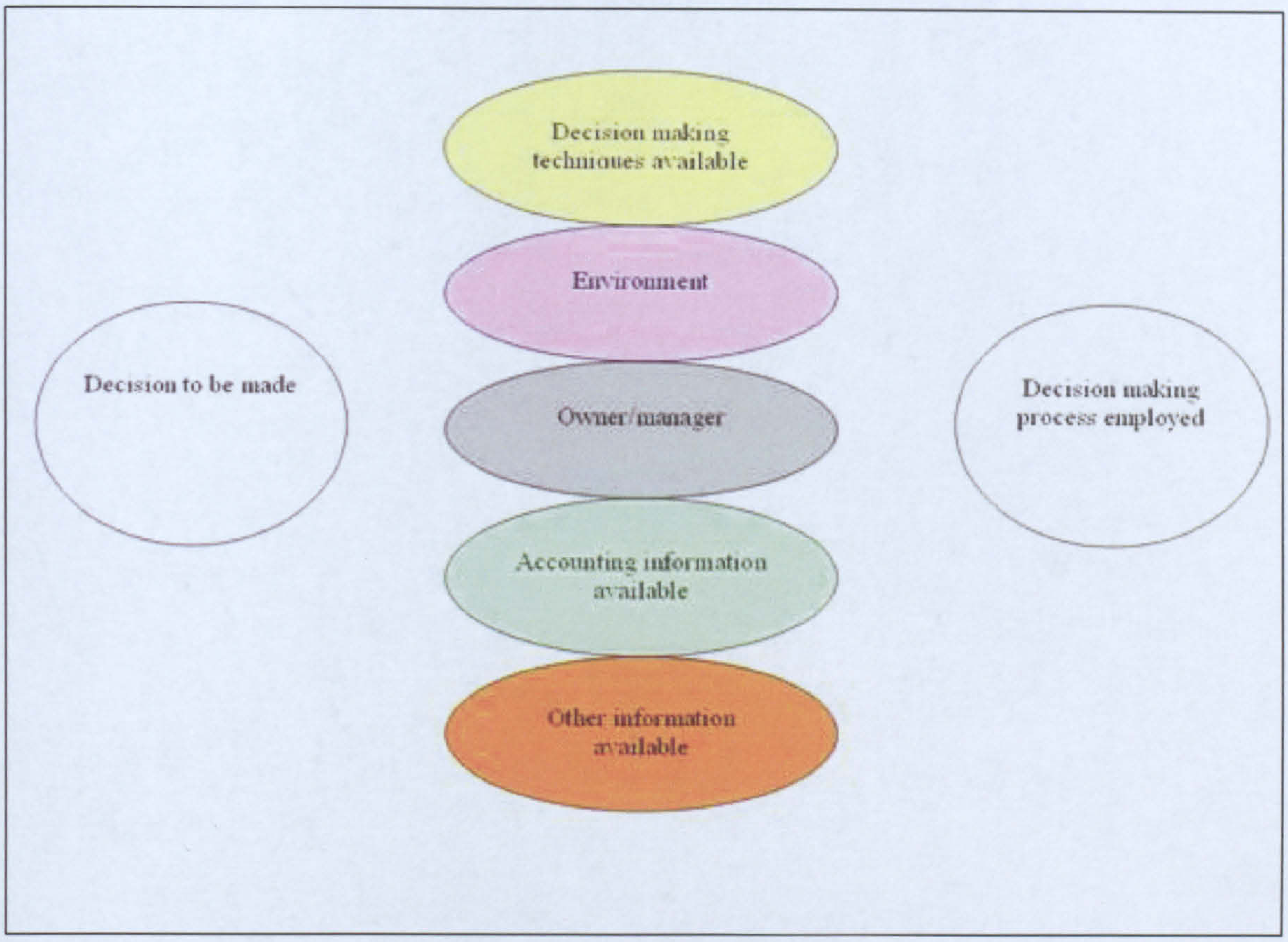
The purpose of a conceptual framework is to act as a map to give coherence to empirical enquiry, allowing the convergence of theories and concepts with real practices by highlighting the key factors, constructs or variables and postulate relationships between them. Frameworks take different forms; graphical or narrative form; rudimental or elaborate; theory driven or commonsensical; descriptive or causal (Miles and Huberman, 1994) depending upon the research question or problem. For example, within the field of accounting, a conceptual framework seeks to identify the nature, subject, purpose and broad content of the general purpose of (financial) reporting and the qualitative characteristics that financial information should possess (Deegan, 2005). Within the appraisal of art, a series of conceptual frameworks can be constructed that assist in critical analysis (artist, artwork, audience, world).

Frameworks built on careful, thoughtful and reflective review of the literature, provide a road map for the researcher to investigate key issues and focus on how to collect and analyse data pertinent to their study (Shields and Tajalli, 2006). The conceptual framework for this study has been derived from in-depth literature review, to underpin the proposed research questions, aims and objectives, outlined within the introduction of this work. The framework complements the initial interpretive processes of the research, informing the methodology, including how to collect and analyse data necessary for the fulfilment of the research question. Further, the concept of a working hypothesis, being a provisional and working means of advancing an investigation, created from the literature review and the researchers own experiences, can lead to the discovery of other critical factors (Dewey, 1938) as well as aiding the structure of the analysis and conclusions drawn from the research (Shields and Tajalli, 2006). The hypothesis and conceptual framework constructed for this study are therefore complementary and should be considered together.

Evolution of the interpretive themes

From the literature review, the review of methodologies employed by earlier researchers, and the researcher's own experiences, three broad yet significant and related areas of interest were identified, which through the construction of 'theme specific' frameworks, led to the development of an overarching framework. The initial stage for the construction of the framework was to consider the emerging themes for the study. These themes are shown diagrammatically as a conceptual model in Fig. 1 (below), a rudimental 'bins approach' model constructed to highlight the interpretive themes for this study. It demonstrates the barriers a decision must overcome between the discovery of a problem or aspect which needs a decision and the identification of the decision-making process to be employed. Most theories concerning the decision-making process gravitate around pre-described models of decision-making (Gibcus et al., 2005; Papadakis et al., 1998) which comprise of the entrepreneur (or in this study owner/manager), the environment and characteristics of the (strategic) decision itself. A critical factor identified through the literature review and considered potentially key to this study is that of the historical background of the techniques being investigated, which will be recognised within the decision-making techniques available in this embryonic framework and included as a separate theme. The framework thus considers separate entities for further interpretation, none of which should be considered in isolation or take any higher, or lower precedent over another and are thus considered in a non-chronological ordering.

Figure 1: Evolution of Interpretive Themes



(Source: Authors own)

These themes provide a framework for the continuation of the study as well as the elementary interpretive structure to be used in the narrative case studies, as they are considered to be relevant, broad and robust. The framework considers the journey a problem/decision could take and how ultimately a decision-making process is adopted. A variety of factors have been considered fundamental to this process, others have been discounted as either irrelevant or outside the scope of this study. It is acknowledged that each decision made within an organisation will not travel the same route, but in general all will have similar considerations, these including the decision-making techniques available to the owner/manager and the information available, either of a financial or non-financial nature. Additionally, the owner/managers understanding of decision-making processes, which could be based on personal, social or educational choices, needs to be highlighted as an important factor within any decision process. Consideration of any legal/regulatory requirements was discounted since there is very little regulation in respect of management accounting techniques to be found within businesses, although an acknowledgement of the environment outside a business needs to be highlighted as important since this can have a plethora of influences on the decision-making techniques employed in business decision-making processes. The factors influencing the decision-making process are considered a barrier between the decision to be made and the process employed. As outlined above, no two decisions will take the same journey through this barrier, even within the same organisation. Factors influences will vary from time to time, person to person, business to business and decision to decision, making the consideration of the decision-making process so challenging. However, the above rudimental outline gives an initial reflection on this process, allowing the researcher to focus on areas identified as potentially more influential on the SME owner/manager in their decision-making process. It is acknowledged that only certain areas have been considered for investigation and thus included on the initial conceptualisation. None are being highlighted as any more or less important as others and as such the structure of the barrier, the listing of the factors, should not be seen as indicative of any weighting of influence.

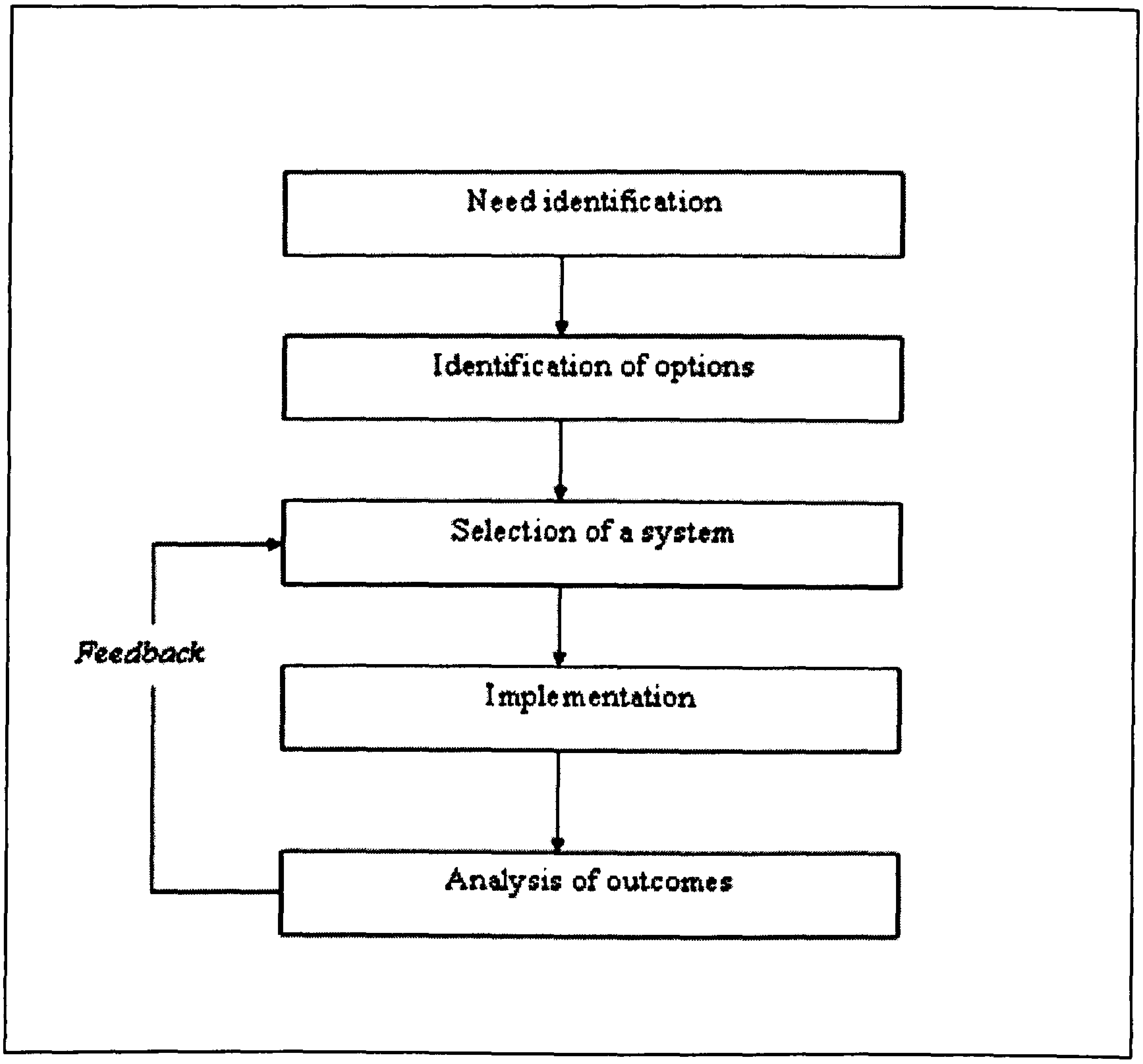
The rudimental conceptual framework above considers a generalist approach to decision-making within SMEs, highlighting the influences that may affect the process. Two of these are intertwined within this study, decision-making techniques available and accounting information available. Conjoined, these lead to a consideration of the management accounting techniques that could be utilised within the decision-making processes of an SME. A primary stage into understanding this area is to consider potentially how decisions are made within an SME. This then leads onto considering where decisions are supported by accounting information, more specifically in this study, management accounting information. The consideration of what management accounting information is available is linked to the management accounting techniques that an owner/manager may be aware of and may be able to use within his/her business.

Decision-making

Decision-making within an organisation is complex, interlinked and involves human interaction and consideration. Business decisions require facts, options, outcomes and consequences to be carefully considered. Processes that an owner/manager might take before making a decision also need identification, clarification and analysis. As previously stated within this chapter, the process of information gathering and analysis in the SMEs is often chaotic and opportunistic (Mador, 2000). Additionally, decision-makers generally are not looking for the best or optimal, but for a satisfying solution of a decision task. Owner/managers goals vary, but it is suggested that so long as sufficient profit is being made, providing an adequate internal finance, owner/managers can pursue objectives, and thus make decisions, which reflect their own interests (Bridge and Dodds, 1975). Baumol (1959) argues that (large) firms don't have to maximise profits in order to survive, arguing that sales revenue is likely to be a key managerial goal in the short term and growth of sales in the long term. Thus, they may try to simplify a complex decision by anticipating only a small part of all possible outcomes (Ivanova and Gibcus, 2003). Owner/managers often have problems to select and process the needed data from the constantly intense environmental flows (Loasby, 1998) especially since entrepreneurs simply do not have the time to go through a thorough, rational decision-making process (Busenitz and Barney, 1997). These factors being further frustrated by the suggestion of Thompson (1967), who considered that in cases of high uncertainty, managers act in an 'inspirational' manner, by making obsolete any formal procedures and rules usually followed. In addition, entrepreneurs with high levels of expertise do not to approach problems or situations in the same way as novices, whereby expertise development takes time (approximately 10 years) although this can be decreased by exposure to entrepreneurial situations through simulations (Ucbasaran, 2008). However, it is considered people closest to the action are able to make the best decisions (Mary Parker Follett, in (Roos, 2008)) and thus owner/managers by their very nature are best suited to be the lead in the decision-making process.

In general, most decisions take a set route, from the identification of a need through to the action taken. In some cases this will be a very short process; a 'once in a life-time' deal, only open for the next minute – the car-crash scenario, for example. In other cases, a longer lead time from identification to action may be available, for example where new equipment may be required within a business – the mapping of a journey. Fig. 2 indicates the potential steps taken by the SME in both initial and subsequent decisions in a rudimental 'no-risk' conceptual framework (Miles and Huberman, 1994). However, this is only one concept of decision-making, Sarasvathy (2008) states that in the effectual model, the decision-maker does not start off with a predetermined goal, end or market, rather, the decision-maker identifies his/her given set of means (e.g. who and what they know) and proceeds to take advantage of opportunities as they appear as well as fabricating new ones. Additionally, decision-making is not only undertaken by businesses. A highly structured approach to decision-making being, for example, the Military Decision-Making Process (MDMP) (Innocenti III, 2001): The MDMP is an adaptation of the U.S. Army's analytical approach to problem solving. The overall process has seven steps. Each step builds upon outputs from the previous step. The seven steps are: (1) receipt of mission, (2) mission analysis, (3) course of action development, (4) course of action analysis, (5) course of action comparison, (6) course of action approval, and (7) orders production. Less structured decision-making processes are used personally and by businesses. Some simply list advantages and disadvantages of each option, a technique popularised by Benjamin Franklin. Others consider each alternative with the highest probability-weighted utility;: accept the first option that seems like it might achieve the desired result (satisficing); choose by flipping a coin, cutting a deck of playing cards, and other random or coincidence methods (flipism); defer to others expert advice; or even trust in divination - prayer, tarot cards, or consulting astrologers, for example. Additionally, the subject of the decision-making requirement, the problem or situation to be 'solved' will also be influential on the decision-making process to be adopted. As outlined about, the car-crash situation through to the car-journey planning; content can be as influential as context. Conjoined to this are factors such as risk and opportunity, and the decision-makers abilities, time, resources, and influences, for example, factors that will need investigation later in this chapter. However, since this research is deliberating on the uses of management accounting (and thus potentially a value based decision) within SMEs to aid their decision-making, it is apperceived that the Miles and Huberman (1994) framework is more appropriate as a starting point when considering the decision-making journey of the owner/manager.

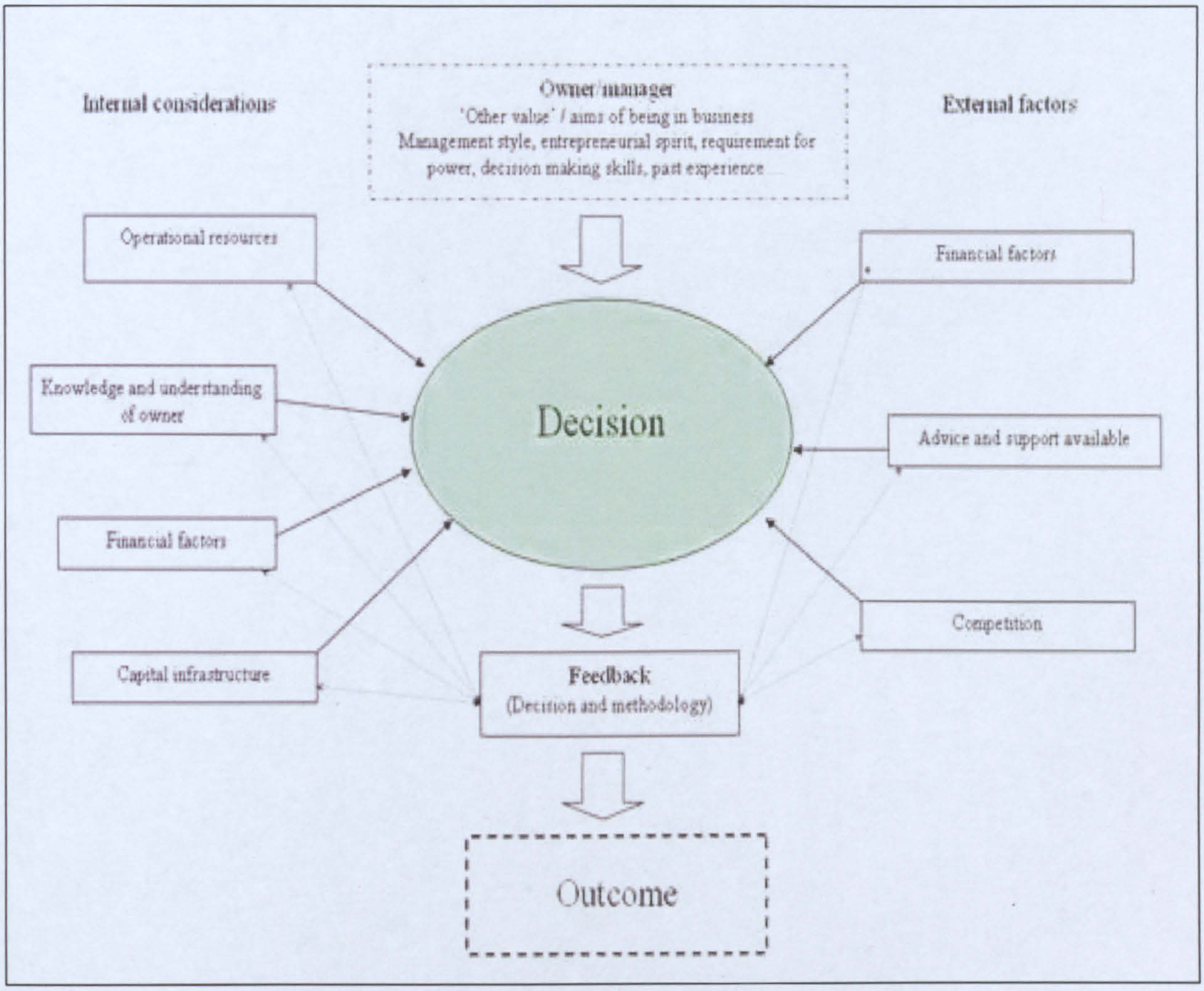
Figure 2: Flow diagram of decision-making



(Source: Adopted from (Miles and Huberman, 1994), *augmented by author)*

As commented on above, Fig. 2 is only one diagrammatical formula of the decision-making process, in one deliberate structure (the feedback loop being incorporated into the diagram by the researcher since it is believed the decision-making process is a learnt one and thus feedback from previous decisions is influential on later decisions). This journey will not be the reality in all (business) decisions or in all situations. For example, although the above may be logical steps to one decision-maker, another may journey a different path: Some may select the system before identifying the options or have a certain system imposed (resource implications); others have only have one option, but it is the selection of the system, or the choice for implementation, for example, that may be the decision. However, this framework has allowed an insight into the basics of decision-making, which needs expansion to allow for the plethora of other influences affecting the small to medium business decision-maker. A conceptual framework allows for this development, as a researcher collects data, frameworks are revised to make them more precise and meaningful. Scrutiny of current literature has expanded the researcher's knowledge of the decision-making processes, more specifically those of the small/medium business owner/manger's processes. The concept of decision-making within a business is multi faceted, with multiple influences on the decision-maker, with an SME this usually being an owner/manager. Strategy should form the basis for all decisions, although often this is not the case. The car-crash scenario, for example: Within this scenario, a short deliberation period is given and often reflex or intuition will play a greater role in the decision-making process than maybe the case with the car-journey decision-making planning. Regardless, it is imperative the decision-maker has a clear strategy, one of the prime sources of emergent strategy being organisational culture. This has many sources, including the corporate mission and the retelling of key events from the organisation's history (Payne, 2008), or more specifically with an SME, the owner/managers history. The start of which is the owner/manager him/her-self; the type of skills and attributes they bring to their business, their entrepreneurial spirit, their management style, past experiences and requirement for power, for example, will all have an influence on how decisions are made. This statement in itself has made a distinction between the owner/manager and the entrepreneur. Mador (2000) considered this aspect within her work, calling for further qualitative study of decision processes in SMEs. In addition to the owner/manager, there are a profusion of internal and external factors that also have influence on the process. Fig. 3 attempts to map these factors into a decision-making framework for the SME. The underlying proposition being that although decision-makers have similar though not necessarily identical needs, the decision-makers themselves are individuals with multiple personality traits and numerous influences. Ucbasaran (2008) summarised that if decision-makers believe they are dealing with a relatively predictable future, they will adopt an approach involving systematic information gathering and analysis of that information, allowing them to make predictions about the future. In contrast, decision-makers believing that the future is relatively unpredictable are likely to gather information through experimental and iterative learning techniques. Consideration of the future, along with other considerations such as risk and reward are indefinable within this framework since they will belong to the owner/managers own concepts and as such are identified within the owner/manager framework.

Figure 3: Decision-making Framework (SME)



(Source: Authors own)

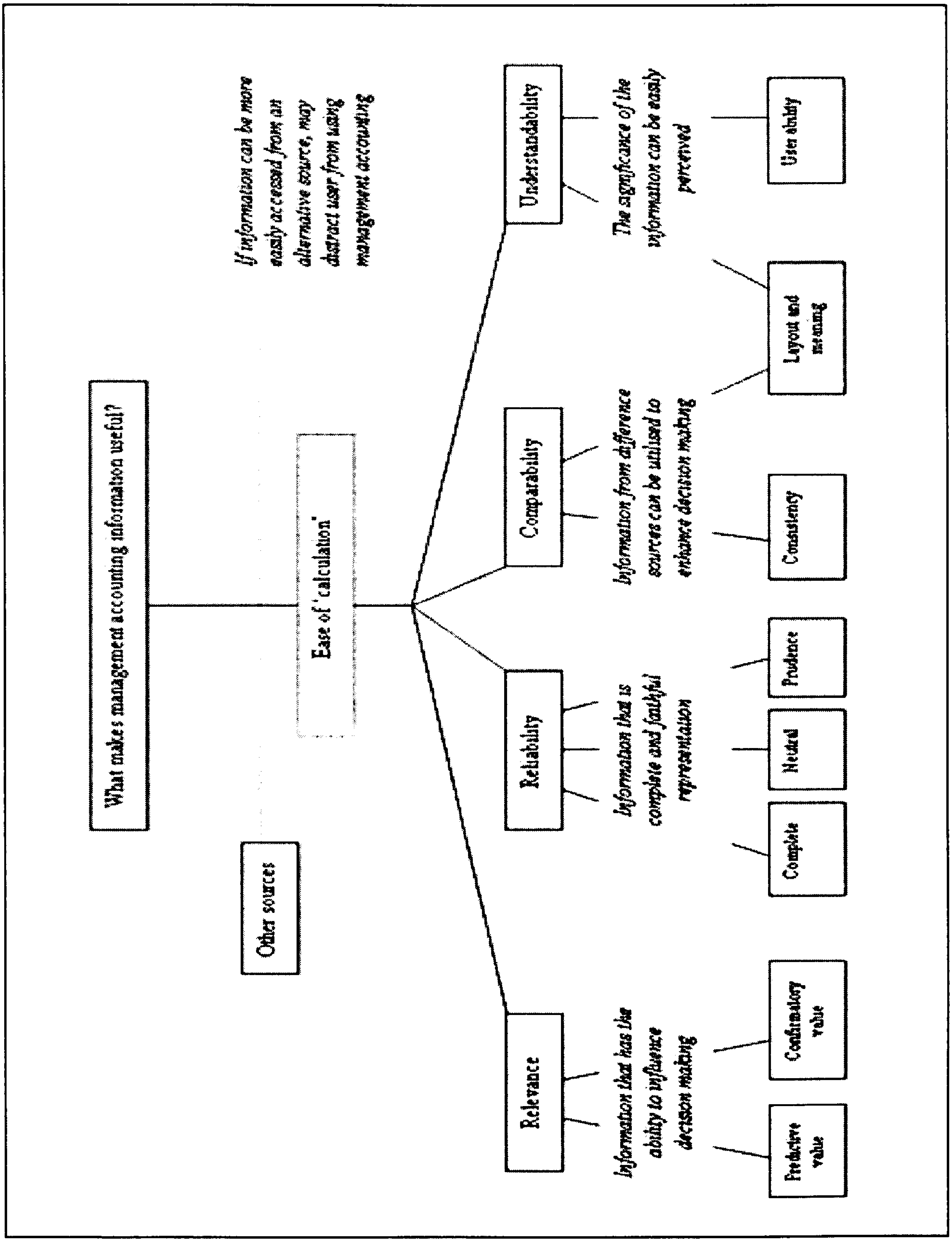
Overarching the decision-making process, as illustrated in Fig. 3 above, is the owner/manager. The type of persona they display, including their reason for being in business, will have an effect within the whole business, not just from the perspective of the management accounting techniques utilised, but also from the strategic and operational running of the business. In itself, an owner/managers persona can be considered as a separate, aligned conceptual framework. Factors within the above framework have been also considered as to whether they exert and internal or external influence on the business. Some align themselves in both, for example financial factors, which would include the consideration of profit. Within a structured framework for decision-making, it is considered the two main issues that managers of any size of business need to focus on are identifying the opportunities for profitable growth and understanding the strategic threats (whether internal or external) (Gould, 2003). Further, there is an economic view that profit maximisation is (or should be) the main goal of all companies (Anthony, 1989; Gélinas and Bigras, 2004). Even the Bolton Report (1971) comments on the main requirement for the survival and growth of the business are to make profits; management accounting techniques in general are often seen as cost reduction thus profit maximisation tools (Gordon and Shillinglaw, 1974). This is not a modern phenomenon, historians comment that past records do not indicate how accounting data was used except to estimate and calculate actual costs incurred and indicate overall profitability, although they add that it could be inferred that they were utilised in planning with a desire to monitor general profitability (Edwards and Newell, 1994; Fleischman and Tyson, 1998; Garner, 1950). However, Greenbank (2001) contends that the vast majority of micro-business owner/managers indicate little inclination to maximise profit or pursue growth, commenting that owner/managers often specified that they had no desire for further growth once they had reached a certain size, thus SME owner/managers may frequently make choices not to maximise profits, but may consider some other value of importance (John and Heleas, 2000). Having an understanding of what this 'other value' may be would aid any observation of the decision-making process since it would indicate their rationale. Likewise, any management accounting technique utilised would have to take this 'other value' into consideration rather than profit maximisation to be useful or effective as a decision-making aid.

Management accounting employed

As has been explored within the literature review, certain accounting techniques and outputs are considered to be 'financial', others are considered to be 'managerial'. Ask any conventional (financial) accountant "what do these figures mean?" and he will tell you how they were derived. Ask a management accountant what the same figures mean and he will tell you how they are used to influence managerial decisions (Goetz and Birnberg, 1976). Characteristics that make certain techniques within the (management) accounting framework appropriate for decision-making need to be considered, which includes whether they can be adapted from a profit maximisation view to the 'other value' as previously mentioned. Further, the accessibility to information from other sources, as well as the comparable ease of calculation, needs also to be explored. Decisions made within business, especially SMEs, are often undertaken in an environment in which the goals, the constraints and the consequences of possible actions are not known precisely. The owner/manager usually employ the concepts and techniques of probability theory and, more particularly, the tools provided by decision theory, control theory and information theory (Bellman and Zadeh, 1970), albeit often without knowledge of employing such techniques. In a perfect world, decisions would be made only after all of the possible alternatives had been fully explored and evaluated, meaning that the decision-maker would be in possession of all the facts, the pathways, and the final destinations. Many decision-makers will defer taking decisions until all options have been considered and all data collected, including all prospects of future data. This may not be a conscious delay and is often linked to the risk of the decision, conjoined to the risk aversion of the taker. An alternate view would be that of the benefit perceiver; those who see the benefits clearly are more likely to make the decision before seeing all of the data. However, the concept of seeing all past, present and future data concerning a decision is impossible to achieve, even with all the techniques that modern computers and technological theories can offer in support of the decision-making processes. Recent advancements in management information systems (MIS) have increased the ability of managers to progress towards optimal decision-making by reducing the two constraints identified by Simon (1979): time (computational processing power) and memory (information storage and retrieval). However, most entrepreneurs meet difficulties in selecting the correct information and taking a decision in the short term (Ivanova and Gibcus, 2003). As time passes, the decision environment continues to grow and expand as new data and new alternatives appear. Mador (2000) indicated that the process of information gathering and analysis in the SMEs is often chaotic and opportunistic. Management accounting techniques employed within SMEs are only one tool that can help the owner/manager in the decision-making process. From the literature review, two areas have been considered fundamental to this study. The first is the qualitative characteristics of management accounting information and how these can be aligned to information theory, the second being the historical context.

Fig. 4 provides a diagrammatic interpretation of the qualitative characteristics of management accounting information, based on the Accounting Standards Board's (ASB) qualitative characteristics of financial information (Accounting Standards Board (ASB), 1995; Eccles and Holt, 2005). The ASB Statement of Principles identifies four principal qualitative characteristics that should be present in financial information which can also be considered appropriate for the study of management accounting information.

Figure 4: Qualitative characteristics of management accounting information



(Source: Adopted from (ASB,1995)*, augmented by author)*

(1) Relevance;

(2) Reliability;

(3) Comparability; and

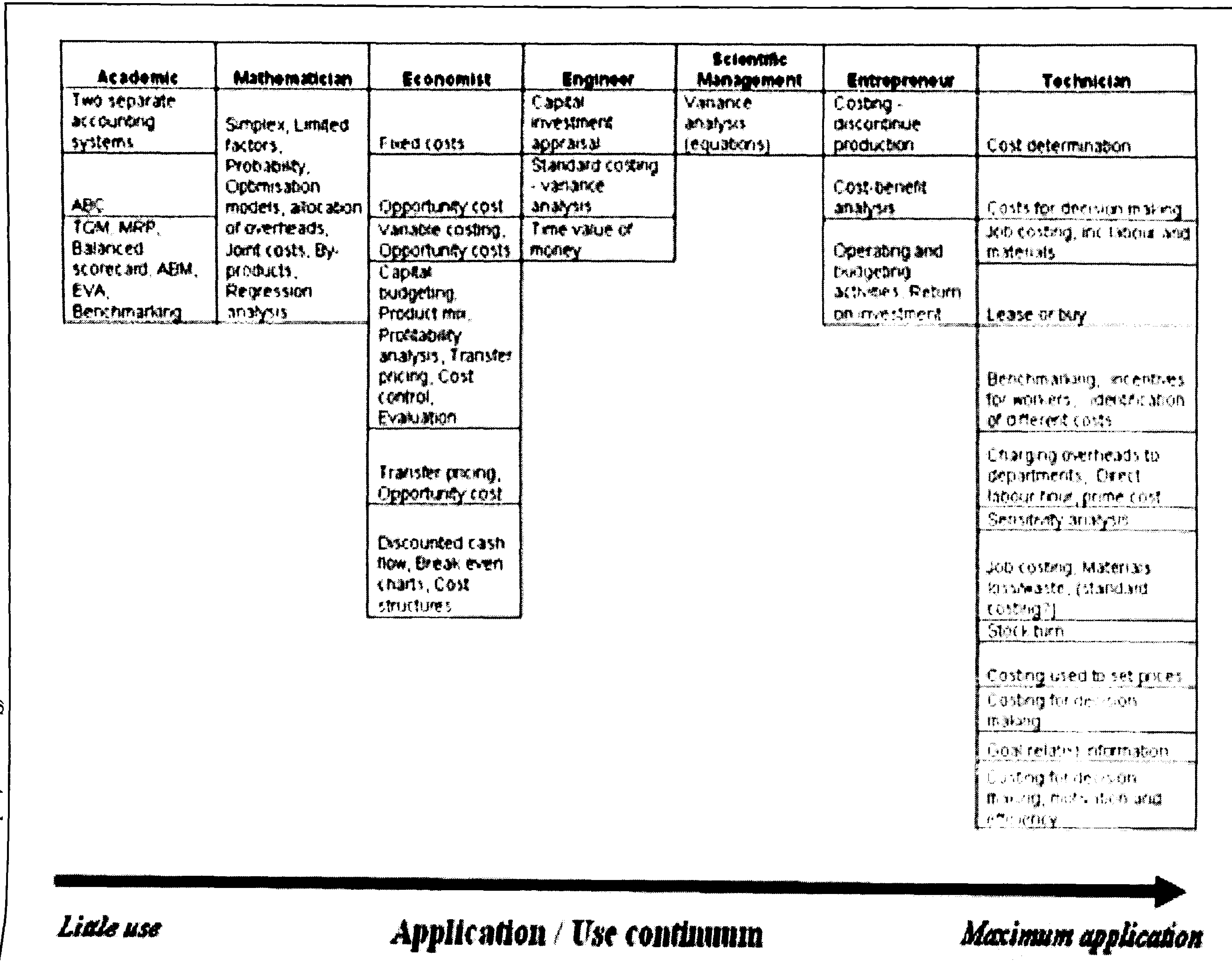
(4) Understand-ability.

These four areas align to those of information theory, which also considers the costs involved with the gathering and analysis of information. Additional characteristics have been developed into the framework; the 'ease of calculation' being one such addition. This area has been considered relevant not only aligned to the educational background or abilities of the SME owner/manager but also when considered in parallel with the historical context. Some management accounting techniques, often those theorised by academics and non-industry personnel, are complex in nature and as such would possibly be outside the educational scope or capabilities of the owner/manager; or their calculations are of such a complex nature that their cost would far outweigh any benefit they could afford a decision. Holmes and Nicholls (1989) indicate that rarely do small business owners or managers have access to the necessary information to conduct many business activities efficiently. They attribute this to four external environmental factors: Business size, the amount of time under current management, the industrial sector and the business owner's or manager's education level. Another addition is that of 'information from other sources'. Decision-makers generally are not looking for the best or optimal, but for a satisfying solution of a decision task (Gibcus et al., 2005). Thus, they may try to simplify a complex decision by anticipating only a small part of all possible outcomes (Ivanova and Gibcus, 2003). Moreover, the social psychology literature strongly emphasises the view of people as 'cognitive misers' (Fiske and Taylor, 1991), thereby suggesting that people try to minimise cognitive effort whenever possible. Additionally, although consideration of the decision process is essential, often the concept of the activity, linked with the concept of capability take precedent (Loasby, 1998). Although capability is a mute point when considering the actual knowledge of the owner/manager; their financial skills may be very limited and hence, understanding financial requirements/techniques and how they can use financial information for performance purposes may also be very limited (Dyt, 2005). It is with this limited knowledge and understanding in mind that a consideration of the historical background of the management accounting techniques is considered.

Historical context

In addition to a reflection of qualitative characteristics of management accounting, the historical context needs further exploration. The historical background of a management accounting techniques may potentially influence, albeit subconsciously, the SME owner/manager as to whether the technique is utilised within the decision-making processes employed within the businesses. It is hypothesised that those techniques implemented directly into the organisation by the management accountants/technicians themselves have potentially more influence on decision-making processes than those 'invented' outside the working environment. The following framework outlines a synopsis of the historical background to costing/management accounting techniques. Conceptual frameworks are more traditionally constructed graphically, however a textual framework was considered more appropriate in this circumstance.

Figure 5: Synopsis of background to costing/management accounting techniques



(Source: Authors own)

Fig. 5 above attempts to map the historical background (as outlined in the literature review chapter) of each technique into a certain classification, which has in some cases proved relatively simple, for example variance analysis being accredited to Longmuir, an engineer, by Solomons (1952). Likewise, Vignoles a civil engineer, recorded a very early example of capital investment appraisal in 1833 (Edwards and Newell, 1994), which is arguably the first instance of this techniques being employed in a decision-making process. Other techniques are more problematic, Clark identified fixed costs within his academic work in 1911 (Johnson and Kaplan, 1987), however this has been accredited with the Technician category above since there is compelling evidence that prior to Clark, organisations were already identifying and collecting cost data, dating back potentially as far as English Bread Assize of 1266, if not before. Within the Mathematician category are techniques such as simplex, which although not directly accredited with a primary source, have been generalised into the Mathematician category due to their high use of mathematical techniques. The above synopsis of management accounting techniques incumbent to their historical background will be tested within the empirical studies to consider potential links between the historical background and the technique being utilised within SME owner/manager decision-making processes. However, as mentioned in the previous section, the knowledge, understanding and capabilities of the owner/manager have to be considered aligned not only the management accounting technique being employed, including a consideration of its historical context, but also aligned to the persona of the owner/manager.

Owner/manager

Overarching any decision made within an organisation is the persona of the owner/manager. Augmenting this is the concept of entrepreneurship and whether or not the SME being investigated is led by someone that could be classified as an entrepreneur. Owner/managers and entrepreneurs are frequently cited as having identifiable characteristics (Stokes, 1998). All owner/managers are not entrepreneurs however and entrepreneurs may exist in much larger organisations, not just within SMEs. Many researchers (for instance; (Baron and Markman, 1999; Carland et al., 1984; Kets de Vries, 1985; Vesper, 1980) have tried to identify both single important traits and clusters of characteristics which define the entrepreneur. Vesper's (1980) view is that several types of entrepreneurs exist, implying that different entrepreneurs may possess different characteristics. However, Carland et al. (1984) quickly undercut Vesper's (1980) notion of entrepreneurial types by conceptualising that a continuum along which several 'types' of entrepreneurs exist and then insisting that the entrepreneurs along the continuum differ, not merely by possessing different characteristics, but by displaying different degrees of intensity of the set of characteristics which makes a person an entrepreneur. Stokes (1998) notes that the sheer variety of people who are identified as entrepreneurs indicates a limitation to the demographic approach, whilst Greenbank (2001) makes a distinction between entrepreneurs and small business owners, reinforcing the original concept of Schumpeter (1934) that the objectives of entrepreneurs tend to be growth related, while those of small business owners normally relate to personal goals. Since the object of this research is to consider the decision-making techniques applied through management accounting within SMEs, it has been considered that, although potentially relevant, the definition between the different class of owner/manager is outside the scope of this research, although should be acknowledged within any findings.

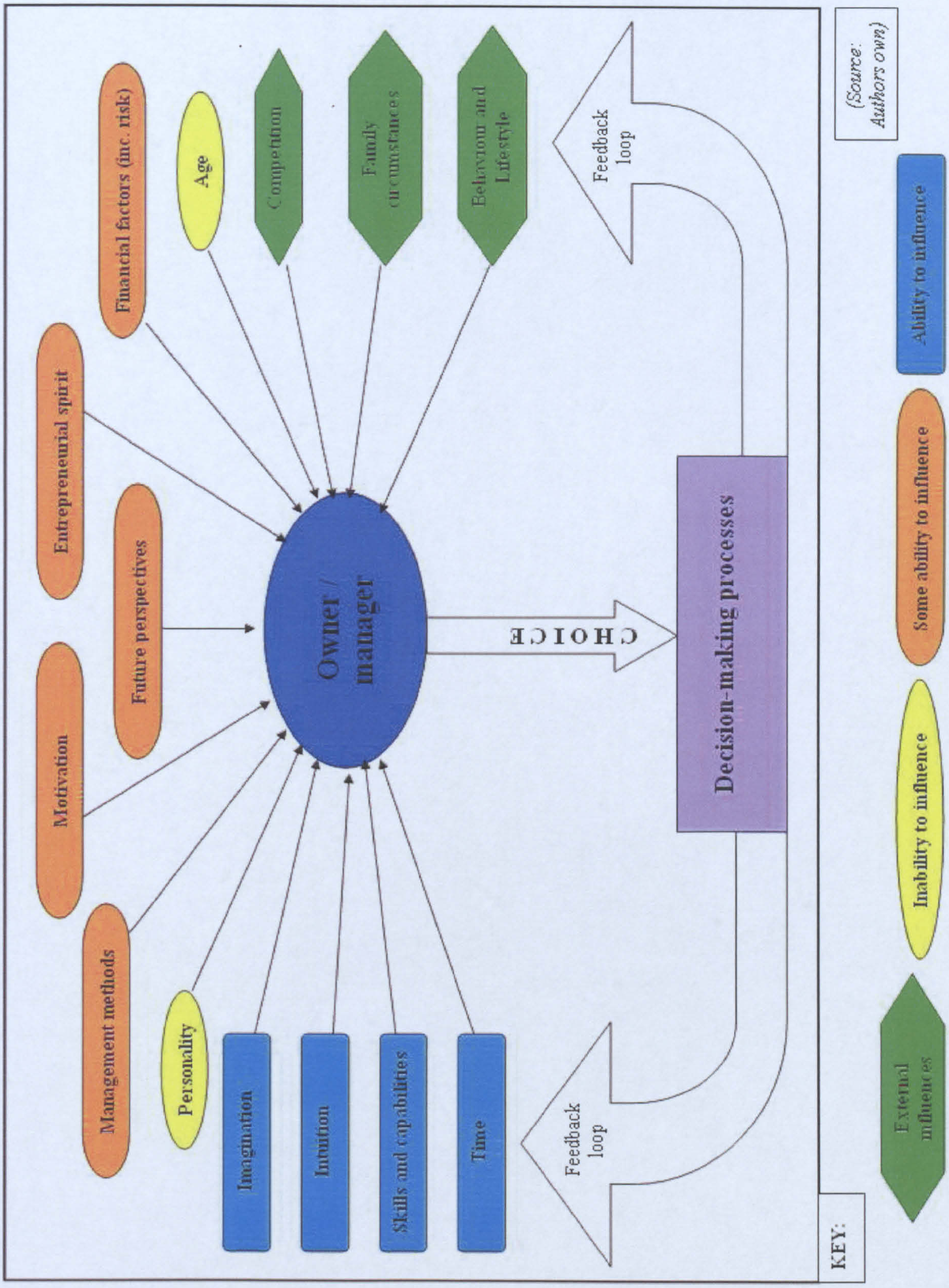
Managerial style, requirement for power, risk preference, financial ability, decision-making skills, education and past experiences (for example) all have influence on how decisions are made and the management accounting techniques that may be used. Additionally, into all decisions comes imagination (Simon, 1976). It is the imagination of the decision-maker that helps them make the bridge between the information (current knowledge) and what they would like to know or what they ought to know to be able to make a 'perfect' decision. It is into this imagination that comes all of the past experiences, the values, the ethical considerations, and the judgements of the decision-maker.

Thus a key contingent factor concerning SME owner/manager decision-making processes could be aligned to the background and attitude of the owner/manager. Additionally, it could be considered in conjunction with the ability of the owner/manager to take action which could ultimately influence other factors such as education, time and funding. Owner/managers may be fully aware about the product/services their deliver and the markets that their businesses may be based but are not normally trained or proficient in business management skills, including accounting skills, especially when starting up the business. An owner/manager can influence this knowledge through education or by employing a specialist to aid in these processes, which can affect or influence his/her ability to make decisions and ultimately the decision-making process. Other factors cannot be as easily influenced, time for example. The financial management is expected to be simple and largely cash flow based, the preoccupation with running the business leaving little time for the owner/manager to consider the management of their business (Berry et al., 2002). The funding for start-up businesses typically comes from the entrepreneurs themselves, with any bank finance being secured on personal assets, with few other sources of funding at the early stages of business growth. Thus there is no external pressure to explicate the rationale for their businesses in a business plan that would link both strategic and operational issues (Keasey and Watson, 1993).

As businesses survive and develop, the range and sophistication of different managerial techniques and practices adopted tends to increase, influenced by the owner/manager his/her-self as well as from external factors, such as the requirement of financial institutions that may have an interest in the performance of the business. The points in time at which different types of practices are implemented often can be mapped against the business life cycle; growth, maturity and decline (Miller and Friesen, 1984) with each phase showing some consistency of internal characteristics, including the decision-making techniques adopted within a phase. An alternate way to map these factors would be to align them to the characteristics of the owner/managers professional activity. For example, Bauer (1995) considered that all decisions an owner/manager made within his/her business was the product of a triple rationality; economic rationality, political rationality and family rationality. It is thus imperative for any research to make a clear consideration of these factors. Fig. 6 considers multiple factors within the owner/managers persona that may influence their decision-making abilities and the techniques they employ when making decisions aligned to their ability to influence these factors and aligns these to those factors that may be influenced by an owner/manager and those whereby s/he can exert little or no influence. Fig. 7 uses the same template of influences but attempts to align with Bauer's (1995) three-headed man concept.

It is important to note that at different times within the lifecycle of an owner/manager and that of his/her business, different influences will have more precedence than others. For example, a decision taken during the early stages of a business lifecycle may be influenced by the owner/managers requirement for steady growth, with a risk taker's strategy. Later, the owner/managers personal circumstances have altered; family for example, may mean that a more risk adverse, initiative decision-making, based on past experiences, will be evidenced.

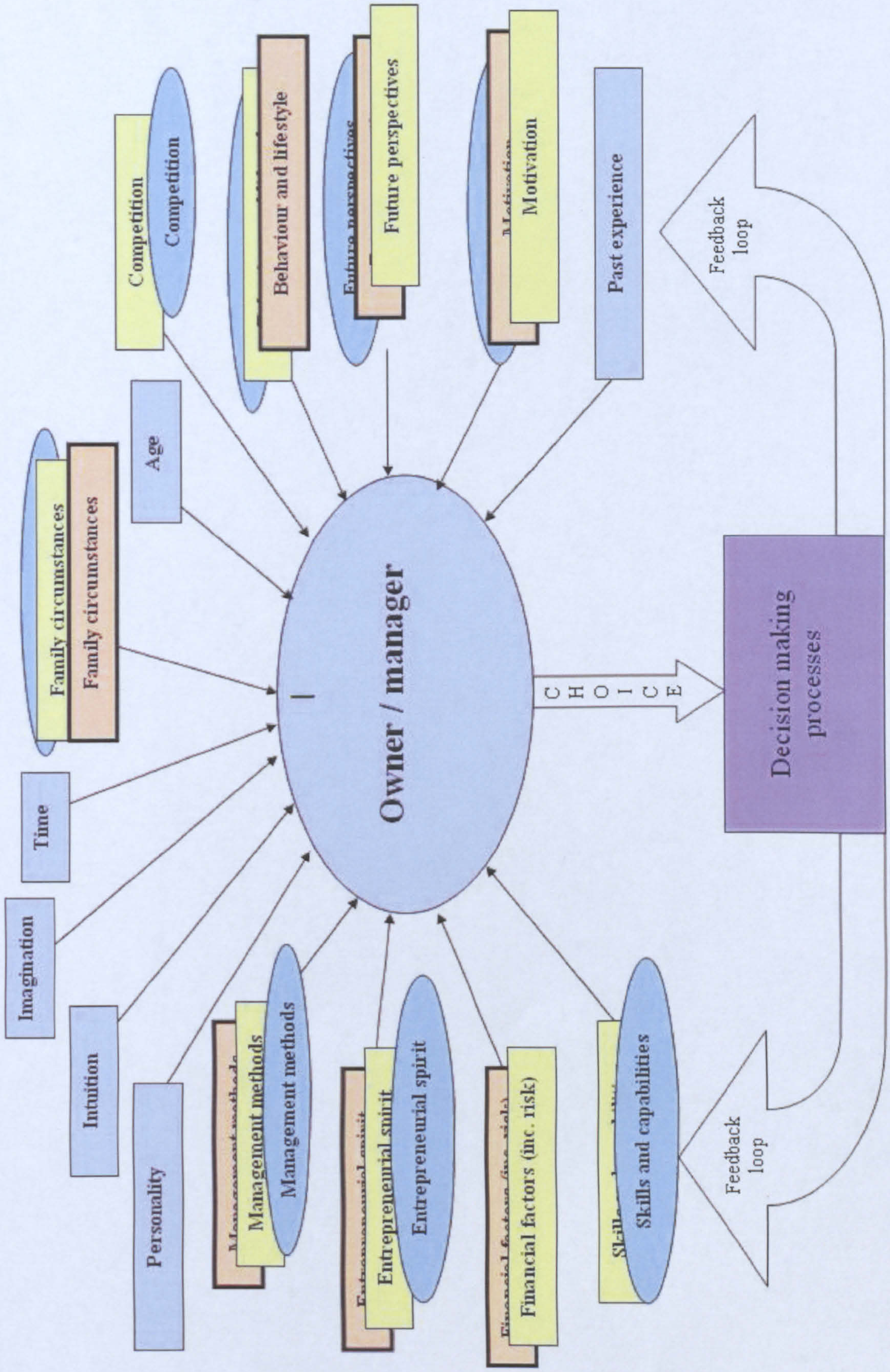
Figure 6: Influences affecting owner/managers



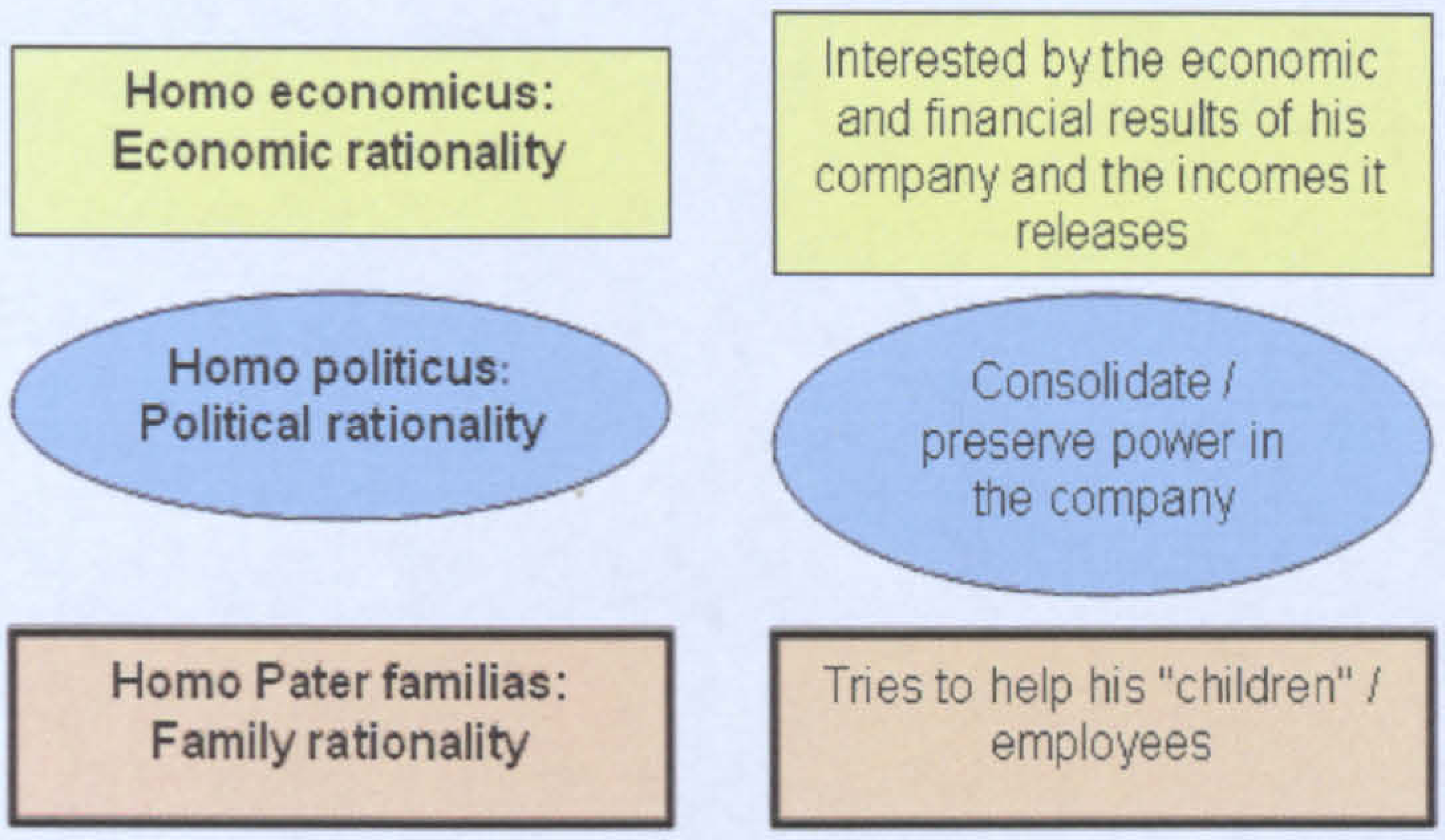
The above diagrammatically indicates that some factors can be influenced by the owner/manager him/her-self, for example their ability to gain higher skills and capabilities by further training. Others may be influenced, although these could be outside the owner/managers scope. For example, is it possible to alter a person's entrepreneurial spirit, motivation or their managerial style? Are the skills that make an owner/manager an entrepreneur inherent or can they be learnt? Are entrepreneurial skills just another term for experiential learning? Certain factors are deemed external to the business; family circumstances and behaviour and lifestyle have been put into this category, although these could be very directly linked with the business (for example a family orientated/owned business) and these may alter due to the owner/managers direct intervention. Another factor within this category is considering the influence of the competition on an owner/managers decision-making, here it would be unlikely that an owner/manager could directly influence the competition affecting their business, although not impossible. The remaining factors of personality and age were considered unalterable. Time was also specifically included since time can in itself influence many areas of the decision-making process although it is also inherent within other factors, such as past experience, future prospects and even skills and capabilities. For example, the time to undertake decisions and how those decisions are staged is influenced by the time available to the owner/manager, which would include the time to collect and analyse data.

The consideration of whether an owner/manager can influence a certain factor is only one facet however. As mentioned above, Bauer (1995) considers the SME leader as a three-headed man; s/he is not only guided by economic rationality but follows a triple rationality: economic rationality, political rationality and family rationality. Thus s/he can act according to these three logics of action that are sometimes contradictory but able to coexist. Bauer (1995) also considers that the size of each head and the conflicts and contradictions that exist between them, can characterise the behaviour of the leader. These constructs have been examined and used to further develop the previous framework: Fig. 7 is identical in its outline of potential influences affecting the owner/manager in decision-making processes, but a further analysis into which of these influences may be further affected by one or more of Bauer's (1995) 'heads' is illustrated (see key on following page to diagram).

Figure 7: Influences affecting owner/managers (Bauer 'Heads')



Key



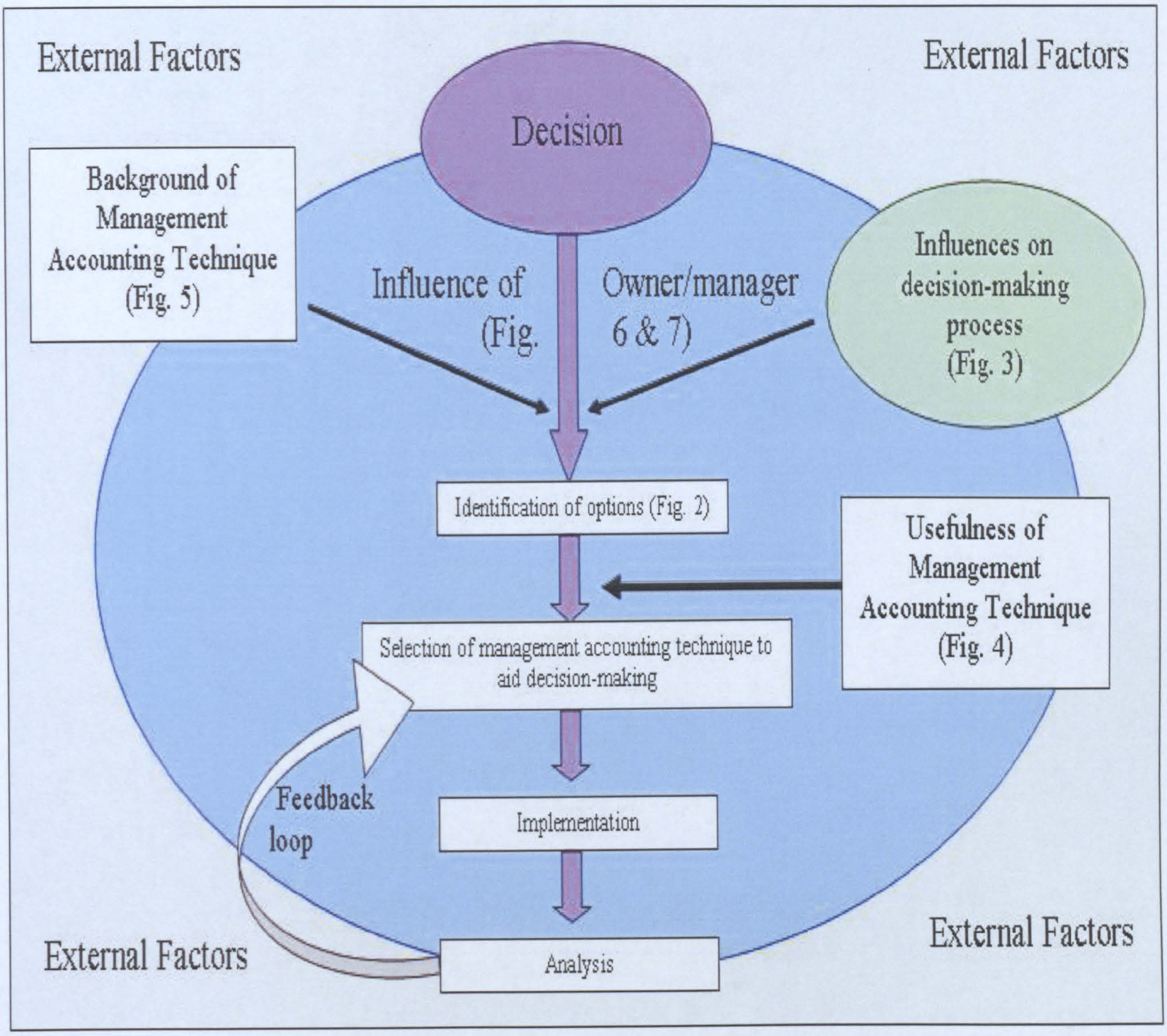
In applying this concept to the influence framework, it became apparent that in various areas, coexisting can be clearly seen. Wherever this was evident, an attempt was made to potentially highlight the dominant factor, although it is considered this will be highly influenced by the characteristics of the owner/manager. For example, family circumstances was considered more influenced by the family rationality, although it was also felt that the economic (i.e. to consider the economic wealth and stability of the family) would also influence, as could the political (especially where the business is a family orientated one). Entrepreneurial spirit was considered to be more influenced by the political head, closely followed by economic, although this could very easily be reversed dependent on a variety of influences or even time. However the family rationale was also aligned to this factor since it was considered an essential part of an entrepreneur's ethos. One of the most complicated factors to consider was that of motivation, which in reality is influenced by the characteristics of the person, thus the dominant 'head' would alter in each case. Motivation is an influence on all humans in varying degrees. In its own right, motivational theory applied to the decision-making processes of entrepreneurs / owner/managers would be a valid area for investigation. Maslow's Hierarchy of Needs (Maslow, 1954) is an excellent model for understanding human motivation, but it is a broad concept, covering many facets, like Fig. 7 above. Additionally, a persons' motivation in their private and businesses lives can vary at any one given time, as well as changing over time due to the fluidity of their circumstances. It has therefore been decided that, although motivation is an important facet of the decision-making process of SMEs, direct consideration of its impact will not be considered within this study.

Testable framework

A conceptual framework of accounting seeks to identify the nature, subject, purpose and broad content of general purpose financial reporting and the qualitative characteristics that financial information should possess (Deegan, 2005). It thus has the potential to connect to all aspects of enquiry, including the literature review, methodology, problem definition, purpose, data collection and analysis. From the consideration of the literature review, the frameworks above have sought to highlight aspects and themes pertinent to this study, becoming in effect problem definition frameworks. From these an overarching, framework has been constructed (Fig. 8) to guide and inform the empirical study, giving the latter stages of this research purpose, as well as informing on methodological issues, including data collection and analysis.

Fig. 8 outlines the testable framework, grounded in prior literature. It considers the transient journey of the decision, influenced by factors such as the background of the management accounting technique that may be applicable, through the management accounting techniques usefulness and influences on the decision-making process. Inherent in all of these factors are the owner/manager's influence and the external environments influence. The research pertinent to this study will consider these influences, aligned to their representative framework from this chapter, as noted in the above framework, to determine if there are any patterns which could show that one influence has a higher weighting over another and as such could be a linchpin to the decision-making processes within an SME. Since this study is primarily concerned with a consideration of the management accounting techniques implemented within the decision-making processes it is these that have been highlighted within the framework, however it is considered that the above is a synopsis of any decision-making experience and as such would be transferable to any study of decision-making within an SME. This framework also highlights key factors which require investigation through the empirical research.

Figure 8: Conceptual Framework: Influences on the decision-making processes of an SME



(Source: Authors own)

Testable Hypothesis

The defining characteristic of science is the concept of the testable hypothesis, predictions that can be validated by independent observers which includes examples of what is *likely* be observed if the hypothesis is true and of what is *unlikely* to be observed if the hypothesis is true.

The literature review undertaken has outlined the influences potentially pertinent to this study, of which the historical background of the management accounting technique appears to be a dominant factor. 'Internal' influences, such as the characteristics and background of the owner/manager; and the influence of the industry and size of the business will have an effect on the choice of technique, as will 'external' influences, such as legal, social and environmental issues. Many of these influences are hard to quantify within the decision-making process since even the decision-maker may be unaware of their impact. It has thus been considered appropriate to concentrate on a potentially quantifiable aspect, the historical background.

The testable hypothesis relating to this study being:

"The management accounting techniques originally 'developed' within industrial backgrounds are of more importance, and thus utilised more, within an SME decision-making process."

Thus, those techniques developed by the technician will be evidenced throughout SME businesses decision-making, whereas those developed by the academic and mathematician will either be only marginally employed or not in evidence at all within the decision-making process.

"There is a clear link between the management accounting techniques origins and the size of the SME, with larger businesses operating more sophisticated management accounting and decision-making practices."

Since the historic backgrounds of the techniques are linked to the size of an organisation, there will be an association between the size of the business and the development of decision-making techniques utilising management accounting. Further, since the size of a business is often linked to its maturity, as an organisation matures more reliance to results from management accounting calculations will be made.

"The persona and omnipresence of an SME owner/manager will be consequential on the decision-making practices, including the use of management accounting techniques and results, within the organisation, regardless of its size."

Although the concept of entrepreneurial spirit has been considered outside the scope of this research, the presence of the owner/manager and the effect this will have on a businesses decision-making processes must be acknowledged. It is hypothesised that SME owner/managers will have a direct effect on management accounting techniques utilised within the decision-making processes of their business. This effect can be caused by a plethora of factors; from conscious decisions and influences through to unconscious and/or 'gut-feeling' consequences, their use of structured or unstructured decision-making strategies, their risk strategies, their home environment, their motivational factors, education, support, for example.

Conclusion

This chapter has considered the decision-making journey of an SME, identifying themes pertinent to this study. From the review of the literature concerning management accounting through to the consideration of the multi faceted SME, including owner/managers and leading to an overview of the decision-making processes, the above frameworks have been constructed. These varied frameworks have allowed the researcher to organise the knowledge gained from literature reviews, giving substantive meaning to the research problem, allowing for definition and consideration of the various themes pertinent to the study. The constructing of these frameworks has allowed for a consideration of the current state of knowledge about the areas being considered, including an overview of previous research from both methodological and analysis of prior findings. It was considered necessary to construct differing frameworks to be able to identify the many facets of this research in some detail, allowing for new or further description/definition of the various concepts pertinent to understanding the problem; to search for relationships between the differing concepts; and for manipulation to discover if causal relations may exist between concepts. Once constructed, these frameworks were considered individually as well as holistically, culminating in an overarching framework which will lead this research, through the decisions of methodology to be employed, the questions to be answered from the field work, ultimately into the analysis and conclusions to be considered.

Chapter 4: METHODOLOGY

The etymo-logical and traceable meaning of methodology (from the Greek methodos = meat hodos) is 'the way along which', in other words aimed at following a certain route. In this case methodology implies the way (or route) the researcher will need to take in order to achieve a certain result (knowledge, insight, design, intervention, solution)... In more everyday language it means "a system of methods and principles for doing something"... It assumes there is a logical order the researcher needs to follow in order to achieve a certain predetermined result. Defining and defending the logic of this logical order is what methodology is all about.

(Jonker and Pennink, 2010) p.32

Introduction

This chapter discusses the research approach used for this study, the sources and methods of data collection, and the limitations and problems that impacted on the research. Methodological as well as philosophical assumptions upon which the various strategies for this research are based will be considered, assessed and justified. There are various methods which could have been used and the relevance of methodological approaches employed to study decision-making processes in SME using accounting information will be assessed. Consideration of the methodologies employed is relevant to assess their effectiveness and limitations of conclusions drawn. Analysis of triangulation of information and how this has been managed will be completed. A description of the selection process for research sites and other documentation collection will follow. Consideration of case studies and the use of questionnaire survey's and their application within this research will be discussed. The research design is an extension to the literature review and limitations of the research undertaken and conclusions of the methods adopted must be considered within this context. The following sections are pertinent to the consideration of methodologies to be employed within this study, with initial identification and reflection of the type of data required to aid this research.

Methodologies (general consideration)

By the early 1990s, academics from across Europe had started investigating the issue of management accounting change. Research projects were, and still are today, funded by many differing bodies into what and why this change has occurred, as well as the results of those changes. Research based on the theory of 'studying, and thus emulating, the most innovative and successful subjects' (Kaplan, 1994) and 'best practice' in leading western and Japanese companies (Anderson, 1995; Monden and Hamada, 1991) was initiated, changing the research from theoretical based to a more field study approach; the result being an agglomeration of articles based on the studies of management accounting (change) in 'large' organisations, for example (Burns et al., 1999; Burns and Scapens, 2000; Gould, 2003; Jazayeri and Cuthbert, 2004; Mercereau, 2006).

An appropriate choice of research strategy relies primarily on the research in question and the circumstances surrounding such research. Consideration should be made as to the limitations that would naturally apply to the research, for example based on the reasons behind such research, personnel involved (both people and institutions), and any time and/or other resource constraints (for example finance). There are many classifications of research methodologies (Allison et al., 2001; Alvesson and Skoldberg, 2000; Cahoon, 1987; Haslam, 1998; Newman, 1998; Ryan et al., 1992; Tashakkori, 1998; Weimer, 1979; Zikmund, 1997). Allison, et al. (2001) concluded that there are seven principal methodologies surmising that whilst most research projects adopt one methodologies in the main, they invariably draw upon others. Today, in order for a research project to be undertaken (in any field of study), authors and researchers argue that wherever achievable, a mix of several methods should be used since it provides more perspectives on the phenomena being studied (Easterby-Smith et al., 1991; Gable, 1994).

An investigation into robust triangulation of information, which must be undertaken to ensure the reliability of research results, also needs to be accomplished. Triangulation being the building of checks and balances into the research design through multiple data collection strategies (Patton, 1987). Birley and Moreland (1998) consider triangulation occurs where the researcher repeats the study using alternative; data collecting instruments, investigators, methodologies, units of analysis, theoretical perspectives thus strengthening the case for multi mix methodology as outlined above.

Qualitative vs. Quantitative

Organisational research in the 1960s and 1970s was dominated by the use of quantitative methods. Morgan and Smircich (1980) stated there was a call for more qualitative techniques. Ultimately this led to the concern that qualitative methods were being favoured over quantitative techniques. A mix between qualitative and quantitative is a more acceptable solution to the dilemma of choosing one rather than the other. In practice, a high proportion of small business research employs mixed research designs, which include quantitative and qualitative elements (Curran and Blackburn, 2001). Miles and Huberman (1994) write that the back and forth banter among qualitative and quantitative researchers is essentially unproductive, the two research methods being interdependent. However, since the two paradigms do not study the same phenomena, quantitative and qualitative methods cannot be combined for cross-validation or triangulation purposes, however they can be combined for complementary purposes (Sale et al., 2002). Further, Campbell (in Miles and Huberman, 1994) states that all research ultimately has a qualitative grounding and Trochim (2006) argues there is little difference between qualitative and quantitative data, stating that qualitative data typically consists of words while quantitative data consists of numbers. He justifies by adding that all research is quantitative because everything can be counted, even if this is a case of putting items and responses into similar groupings rather than specific outcomes; and all research is qualitative because answers to even the firmest numerical questions may conceal a variety of meanings. Thus, if quantitative data is collected and (for example) tabulated, results are interpreted. Interpretation is based on the researchers own viewpoint, their past experiences and even based on the hypothesis they have been collecting data to prove (or disprove). Therefore it is based on a subjectivist's viewpoint and part of the qualitative methodology. These results are then subjected to consideration of the whole – if an analysis of SMEs has shown that 90% don't use management accounting techniques, the researcher could then consider this as a meaningful indication that 90% of SMEs don't use management accounting techniques. This may or may not be the actual case.

Perry (1998) states there should be justification for the methodology in terms of the research problem and the literature review; Trochim (2006) states it is more applicable to choose quantitative methodology when most of the following are applicable: Research is confirmatory rather than exploratory – i.e. a frequently researched topic and numerical data from earlier research is available. The researcher is trying to measure a trend. There is no ambiguity about the concepts – there is only one way to measure the results. The concept is being measured on a ratio or ordinal scale. Considering these points in relation to SMEs and their uses of management accounting techniques, the research is trying to measure a trend and the concept can be measured as a ratio. There is some prior research. However, there could be ambiguity, for example one owner/manager may feel that he uses budgeting as a management accounting tool, but his concept of budgeting and the researchers, or for that matter another owner/manager's may be completely different.

Trochim (2006) states that is more applicable to choose a qualitative methodology when: The researcher has no existing data, the unit of measurement is not certain, the concept is assessed on a nominal scale, there are no clear demarcation points, and the research is exploring reasons why people do or believe something. Thus it could be seen as more applicable to utilise the ideas about what the actual techniques (say for budgeting) are through qualitative techniques since there is no existing data (expect for the theory of budgeting), the unit of measurement is uncertain, it is based on words and to a lesser extent numerical techniques, and there will be more emphasis on why an owner manager is doing it this way rather than another.

Gage (1994) in his studies of education and teaching, gives some insight into the processes involved in qualitative and quantitative research methodologies. From his work guidelines can be constructed to help focus this research. He considers quantitative research requires procedures that are public, use precise definitions, and that are systematic and cumulative—all resulting in knowledge useful for explaining and predicting. Qualitative-interpretive research calls upon researchers to avoid "evidentiary inadequacy" in the amount, variety, requiring the use of triangulation, or the analysis of data from different perspectives on the same phenomena.

Qualitative research is open-ended and unstructured, whilst quantitative is close ended with structure. Both have their own place in research methodology aligned to their relative advantages and disadvantages. A qualitative methodology requires a research problem involving people's constructions of meanings which have not previously been explored (Hassard, 1990). Quantitative methods facilitate the discovery of quantifiable information (Carr, 1994). Patton (2002) summarises the relative strengths and weaknesses of qualitative and quantitative methodologies considering that qualitative methods permit the evaluator to study selected issues, cases or events in depth and detail; data collection is thus not constrained by predetermined categories of analysis contributes to the depth and detail of all data. Quantitative methods use standardised measures that fit diverse various opinions and experiences into predetermined response categories. Quantitative methods tend to use structured questionnaires with standard questions and limited responsiveness to context; little face-to-face contact between respondents and primary researchers (questionnaire administered by trained interviewers); use of large samples; results subjected to statistical analysis (Association for Qualitative Research, 2007). The advantage of the approach is that is measures the reactions of a great many people to a limited set of questions, thus facilitating comparison and statistical aggregation of the data giving a broad set of findings which can be utilised to make generalisations. By contrast, qualitative methods typically produce a wealth of detailed data about a much smaller number of people and cases, having the following characteristics; direct face-to-face contact between the primary researchers and those being researched; in-depth examination of small-scale samples or small numbers of observations; unstructured interviewing guides which are responsive to context and may be amended throughout the project; the researcher and his/her interpretative input is key to the process (Association for Qualitative Research, 2007). Qualitative data provides depth and detail.

Considering the works of both Trochim (2006) and Gage (1994) as a guide will help the author give credibility to the research findings as set criteria have been acknowledged and used. Additionally, by utilising a mixed methodology approach, exploiting both qualitative and quantitative methods, the research aims to corroborate and compliment research findings wherever possible. This study will therefore adopt a mixed methodology approach; within the empirical study, questions will be written to generate both qualitative and but mainly quantitative data. The interviews will give a rich source of qualitative data which can be further analysed and considered in case studies.

Methodological issues

Methodology is concerned with the tools and techniques of research whereas ontology and epistemology are both branches of philosophy that try to explain the existence of an entity or something. Ontology to do with assumptions about how the world is made up and the nature of things thus indicating the study of how something existed, its nature, or being, usually answers the question “what”. Epistemology is often considered as the theory of knowledge, in which we know something exists, and it answers the questions “how” and “what” to do with our beliefs about how one might discover knowledge about the world. These three form relationships to each other whereby the epistemological and ontological positions have bearing on the methods selected for research. When a person’s ontology is conjoined with their epistemology it informs the theoretical perspective; each perspective embodying a specific way of understanding *what is* (ontology) and a specific way of understanding *what it means to know* (epistemology). Additionally, there are three main epistemologies:

> Objectivism: meaning, and thus meaningful reality, exists apart form the operation of any consciousness.
> Constructionistism: there is no objective meaning/truth waiting for us to discover it. Meaning or truths are brought into existence because of a person’s engagement with the realities in the world. Meaning is not discovered, but constructed.
> Subjectivism: meaning does not come out of interplay between subject and object but is imposed on the object by the subject. The object makes no contribution to the generation of meaning (Maynard, 1994).

Considering the ontology of this research, what are the main (financial) decision-making processes adopted by SMEs involves the identification of the existence and presence of a certain topic; the financial decision-making processes adopted within SME businesses. The research aims enhance on this by requiring a consideration of what management accounting technique would be considered relevant to this decision. Ontology, being an analytic philosophy, concerns the determining of whether some *categories of being* are fundamental and asks in what sense the items in those categories can be said to "be". Thus, the consideration of what techniques is more appropriate within the SME owner/managers decision-making, focuses the researcher on the “what” – the purpose of the research.

The epistemology within this research is considered to be of a constructionist basis since within constructivism, a researcher does not *create* meaning they *construct* meaning. This infers that they have something to work with; the world and objects in the world. However it needs to be acknowledged here that different people may construct meaning in different ways, even in relation to the same phenomenon. Within this research, knowledge that SME owner/managers use accounting is already in existence. For example, when considering "how does the historical background of a management accounting technique influence its use within the decision-making processes or an SME owner/manager?" there is an inference that there is already knowledge about the decision-making processes and the use of management accounting techniques, the meaning or truth this research seeks to add to existing knowledge is how the historical background of an accounting technique may have a influence on its use as part of an SME owner/managers decision-making process.

Once the ontological and epistemological contexts have been clarified, methodology can then be considered since the epistemological and ontological positions have bearing on the methods selected for research, for example research with a constructionist epistemology affiliates itself with qualitative methods, but it is possible for either qualitative or quantitative methods to be employed, or both, as long as it is justified by the research to be undertaken. Thus, when the methodology for this research is considered, a consideration of both qualitative and quantitative methods needs to be undertaken. As previously discussed, a mixed methodology, collecting both quantitative and qualitative data is to be employed. A consideration of the various methodologies employed to collect and analyse this data is now required.

Literature review

The starting point of any dissertation is the process of reviewing what has been said before, categorising authors' findings and opinions and it is the result of this review that further research will be undertaken. The literature review forms an evaluative overview of information, including data from past research and authors own opinions and constructs, found in the literature related to the selected area of study. This review gives a theoretical base for the research and aids in the determination of the nature and parameters of this research.

A full exploration of literature sources will be utilised throughout this process to interpret prior research and to aid in the consideration of different perspectives. Works which are outside the scope of this research will be discarded, although it is acknowledged that all works considered will have some affect on the researchers perceptions, whether conscious or not. Those which are peripheral will be critically assessed, evaluated and eventually considered in line with the findings of this research. However, acknowledgement must be made to all works considered since all will have an impact on the researchers own knowledge and understanding of the area, even if later discounted as irrelevant. Research into areas potentially aligned with this study can include material from other schools, such as marketing, engineering and medical, need also to be undertaken to ensure a broad range of initial data is considered. Additionally, methodological issues will be considered, analysed and interpreted from texts written from a variety of these differing perspectives. This interpretation process is often seen as secondary research since it has been written from someone else's viewpoint, including the researcher's personal requirements, concepts or perceptions. Within this study, the interpretation and analysis of written statements made by owner/managers concerning their business and the application of management accounting techniques will be undertaken, this being primary research. From this literature review, a broad base of knowledge and understanding will ensue that will lead the researcher into a consideration of the parameters for study as well as to inform the construction of theoretical frameworks to guide the later parts of the work and eventually to corroborate or refute findings from the empirical studies undertaken.

Frameworks

A conceptual framework occurs when the researcher links concepts from literature to establish evidence to support the need for the research question; a theoretical framework is constructed as a 'map' for other researchers to guide the research questions. Camp (2001) defined theoretical framework as a set of theoretical assumptions that explain the relationships among a set of phenomena. The framework guides research, determining what things will be measured or considered. As such, frameworks are important in all research, including exploratory studies, such as this one, where there is prior research and/or understanding of how SMEs use management accounting techniques to aid decision-making, since it highlights what is already known about the study area, including any preconceived notions/ideas the researcher may have. It is important to reflect on this because not only does this give the researcher the opportunity to outline what is already know, but it also allows them to reflect on what is not know as well as what is outside the parameters of the study, whether implicitly or explicitly. By constructing a framework, which could be in a variety of forms, the preconceived ideas, along with the prior knowledge and understanding become explicit and can then be deliberately consider alongside other frameworks and try to see the organisational situation through different lenses.

Once the framework(s) has been constructed and is aligned to the purpose of the research being undertaken, the questions that are needed to be answered to meet the research requirements can be hypothesised. Following this, other aspects of empirical research such as choice of methodology (survey, interviews, analysis of existing data, direct observation, focus groups, etc) and type of statistical techniques can then be reviewed as suitable or not to aid answering these questions. Thus the framework guides the research, through the methodology, into the collection and ultimately the evaluation of data. However, defining theories and concepts are never ending processes, for instance, at the stage of analysing data; concepts need to be considered in light of new information and wherever necessary should be revised. Frameworks are by thus considered fluid and should be revisited throughout the research programme, considered and revised whenever it is deemed a necessity.

In order to construct the frameworks to guide the later stages of this research, a full investigation and interpretation of literature will be utilised throughout to acknowledge prior research and to aid in the consideration of different perspectives. This will be complimented by the use of phenomenology since the construction of the frameworks will require the researcher to consider her own preconceived ideas and notions concerning the research topic; thus both the construction of the framework and the application of phenomenology will seek, through systematic reflection, to determine the essential properties and structures of the researchers consciousness and conscious experience; her knowledge and understanding of the uses of management accounting within SMEs to aid decision-making.

Empirical study

A central concept in science and the scientific method is that all evidence must be *empirical* or *empirically* based; dependent on evidence that is observable by the senses. 'Empirical' in science and statistics is also synonymous with 'experimental' thus; an empirical result is an experimental observation. Empirical research bases its findings on direct or indirect observation as its test of reality. The researcher attempts to describe accurately the interaction between the instrument (or the human senses) and the entity being observed. If instrumentation is involved, the researcher is expected to calibrate her/his instrument by applying it to known standard objects and documenting the results before applying it to unknown objects (Mitchell, 2009).

A survey, being a research technique whereby information is gathered from a sample, either people (groups or individuals) or, as in this research, businesses, by the use of a questionnaire (Ghauri et al., 1995), is seen as a 'close' alternative to the experiment method. Some management accounting researchers have stated quite categorically that it is not a suitable method. Scapens (1984) argues that because of the superficial view it offers up to the reader of the response where an understanding of practice (within the study of management accounting practices) was the objective, the survey method was not suitable. Flint and Shaw (1981) warn that conclusions derived from a poor survey or a badly constructed questionnaire, producing data with limited statistical significance, are of no value to the practitioner and the interpretation of such research is unsound. However, Drury and Tayles (1995) state surveys are appropriate to provide a broad overview of existing practices which can thus underpin any issues being considered or any claims being made. Furthermore they can be utilised as a means to identify areas that require more in-depth (case study) research. The questionnaire survey has been considered appropriate and is a popular empirical method used by many accounting and SME researchers (Birnberg et al., 1990; Burns and Scapens, 2000; Curran and Blackburn, 2001; Davig et al., 2004; Zaman and Gadenne, 2001; Brace, 2004). Questionnaires are written in different ways, to be used in a variety of different situations and for differing data collecting media (Newby et al., 2003), becoming the instrument in need of calibration through careful wording, pilot testing, re-calibration and ultimate careful recording of results. Additionally, mail surveys are generally regarded as the most efficient and cost effective means of collecting empirical data, which is an important methodological issue for SME researchers (Newby et al., 2003) as well as ensuring that sufficient surveys are delivered to receive a large enough return to drawn meaningful results.

Since both empirical research and case interviews are being adopted within this research, it has been deemed appropriate to use the survey as the initial contact, in order to explore issues and gain insight into decision-making processes within SMEs and then to consider areas for further investigation utilising the case study approach, as discussed by Drury and Tayles (1995). This will also negate some of the failings highlighted by Scapens (1984). Random convenience sampling will be used throughout, however perfectly random samples of people (and SMEs since these are usually influenced by their owner/manager) are virtually nonexistent (Twenge et al., 2008). The advantages of convenience sampling include easy accessibility of subjects, faster accrual, and less expense (Tariman et al., 2009).

Considering the construction of the questionnaire, qualitative and quantitative data will be elicited from the results and a pilot questionnaire will be adopted to consider construction, questions and answers and information forthcoming from the pilot, before the main survey is distributed (Flint and Shaw, 1981). A pilot (Ghauri et al., 1995; Zikmund, 1997) is an important element in the success of a survey since it can determine whether the question is constructed in the most suitable format for eliciting the required information. Any potential failings found at the pilot stage will be reviewed, considered for their impact on results and amended where deemed appropriate.

Most results from surveys can be collected in a quantitative style of recording (Trochim, 2006). However, qualitative data can be collected from a survey, even a written one (Birley and Moreland, 1998) when the questions are written in the correct style. The most rounded approach is to utilise both methodologies to provide standardisation and insight. A survey instrument will be developed for this research to collect data to provide evidence about the current decision-making techniques employing management accounting techniques within SME. Demographic questions will be included concerning the respondent's position in the organisation and about the size of the company and the economic sector in which it operates. The survey will be constructed in order to utilise both qualitative and quantitative data collection, utilising a greater number of close-ended questions since these are relatively easier and quick to answer, thus aiding response rates.

In their editorial review, Baker and Mukherjee (2007) view the chief strengths of surveys as producing data unavailable from other sources and suggesting new avenues for future research. They state that the major weaknesses of surveys are the difficulty of generalising the results and non-response bias. Utilising both qualitative and quantitative data will attempt to negate the generalisation aspect, which will be further complimented by the use of case narratives. The non-response bias is inherent within numerous research methods, Sharma (2001) reported that a questionnaire with cover letter was mailed to random sample of 1500 middle level accounting managers; completed and useable responses were received from 332 managers, representing a response rate of 22%. This factor will have to be acknowledged and considered when identifying sample base and required responses.

The research methodology to be employed within this study will build on those of previous studies. For example, to enhance the usefulness of mail surveys, given the potential difficulties associated with low response rates, researchers have suggested a variety of strategies aimed at improving response rates (Patton, 1987). Using the findings of Newby et al. (2003) the research will adopt the methodology of printing the survey on coloured paper as well as using a follow up mailing when there was a non-response. In addition, the research method will include surveying sufficient numbers of organisations in order to gain responses to make the results as meaningful as possible (Sharma, 2001). If sufficient responses are not forthcoming, snowball sampling (Goodman, 1961; Salganik and Heckathorn, 2004), whereby existing acquaintances of the researcher 'recruit' future subjects from among their acquaintances, will be employed. This is consistent with recommendations made by Zikmund (1997).

Brierley (2001) concluded that it was appropriate to conduct more interview based and case study based research to complement questionnaire surveys aiding in the need to give emphasis to explaining, rather than describing practices in product costing. Modell (2005) relied on triangulation between case study and survey methods within his management accounting research. Drury and Tayles (1995) indicated that further 'field study' should be utilised to provide a more detailed description and evaluation of new systems that had evolved and the factors that had influenced the changes (within an organisation) since the results from a survey following from the implementation of new systems (ABC, JIT, ...) which thus resulted in significant changes to the management accounting system, did not give enough information from which any meaningful results and / or conclusions could be deduced . However, Lillis and Mundy (2005) also consider surveys to be failing researchers and call for more cross-sectional field studies in management accounting to give more insight into the area.

The recording and interrogation and statistical analysis of the survey results will utilise the Statistical Package for the Social Sciences (SPSS) computer program along with other basic programmes, such as Excel. SPSS is amongst the most widely used programs for statistical analysis in social science; used by market researchers, health researchers, survey companies, government, education researchers, marketing organisations and others. Additionally, it is envisaged that all returned questionnaires will be considered 'by hand' for their completeness, allowing the researcher to further interrogate answers, looking for common themes as the surveys are returned.

Considering the limitations of surveys, this research will utilise case study based research to complement the questionnaire results. It is the researcher's intention to make requests of five of the questionnaire respondents to participate in an interview to gain further insight into the decision-making processes utilising management accounting techniques within the business.

Case study

A case study is a research methodology common in social science based on an in-depth investigation of a single individual, group, or event to explore causation in order to find underlying principles (Shepard and Greene, 2003; Yin, 2003). According to Stake, (2000) case studies can be classified into intrinsic, interesting in their own right; instrumental, the examination of a general phenomenon and to build and develop a theory; and collective, a study that tries to illuminate a phenomenon and refine a theory by analysing several cases which provide insight into an issue. Additionally, the collective or multiple case study either includes cases that attempt to gain similar results (literal replication) or consist of cases that are deliberately selected to produce contrasting results in ways that are believed to be theoretically important (theoretical replication) (Yin 2003). Further, the case-orientated comparative approach focuses on a few case studies which are described in detail and which build ideal or idealised types of decision situations explaining how the results of social processes are influenced by different context (Bradshaw and Wallace, 1991). Many accounting researchers, for example, (Berry et al., 2006; Hopper et al., 1992; Ouibrahim and Scapens, 1989; Scapens, 2004; Tomkins and Groves, 1983) have found that the case study approach provides a relatively useful basis to examine how far accounting theories are applied within the business environment and further to then be able to consider their usefulness, effectiveness, areas of application within the organisations operations. Scapens (1990) stated he adopted the case study approach because of the limited prior research and because this research method allows rich insight into new research fields. Case study research is likely to overcome the problems of superficial and ambiguous research results which may be obtained from questionnaire and interview-based research by providing a detailed and richer understanding of (product cost) practices (Ryan et al., 1992). Case studies are also used after literature has been reviewed and results have highlighted areas for further research (Dyt, 2005). Calls for validating empirical research by combining qualitative and quantitative methods have repeatedly been made in management accounting research conducted within the positivist and functionalist paradigms and the case study approach has been utilised to overcome this (Modell, 2005). In addition, case studies can be utilised to investigate the behavioural and dynamic nature of decision-making in small firms, which is largely ignored by survey-based research (Deakins et al., 2002). The present study seeks to illuminate different decision-making contexts in SMEs which are related to their use of management accounting techniques. After careful consideration, it has been decided that using multiple case studies to interrogate the phenomenon and refine theory is the most appropriate methodology to employ.

Stoner and Holland (2004) initiated initial contact by telephone. Their research letter and research questions were designed by surveying the literature on qualitative research and by adapting interview instruments published in this literature. Within structured interviews they found that there was little opportunity for the interviewee to rehearse their answers and as such results were deemed as strong. Pre-booking the interview and requesting that their commentary was not disrupted, they utilised the last ten minutes used to *"mop up unanswered questions necessary for the research."* The case study findings were prepared straight after the interview since they considered the iteration as being an important element of the method. The research undertaken in this work will adopted a similar arrangement; contact to be made face to face or by telephone to ask if the respondent be willing to participate further of the study. Case study involves the creation of the case in imagination; what is and is not within the case or part of the case is determined by the invention of the study (Buchanan et al., 1999). The questions for the interview will be based on results from the questionnaires; areas that required further clarification, areas that had shown a requirement for more in-depth study as well as areas that had been considered as in-appropriate for a questionnaire survey. In-depth interviewing will be used as the main method to collect data for the study since an interpretative approach (qualitative in nature) will be adopted for the investigation, with more quantitative data being collected by the questionnaires. The central concern of interpretative research is understanding human experiences at a holistic level (Berry, 1999). The standardised open-ended interview, with pre-prepared open-ended questions, shall be employed in this research, as outlined by Patton (1987). These require carefully wording and need to be arranged for the purpose of minimising variation in the questions posed to the interviewees, thus harmonising results. Probing should still be possible if the last ten minutes of each interview is set aside to discuss issues that arise during the interview.

It is the researchers intention to hold interviews at the SME offices since this will offer up the most natural and comfortable surroundings for the interviewee, allowing the greatest insight into the 'phenomenon of interest' (Maykut and Morehouse, 1994) namely the decision-making techniques used within the organisation utilising management accounting. The recording of the interviews will also need investigation. Tape-recording is used in case study interviews as a reliable recording method (Sargeant, 2003). Maykut & Morehouse (1994) consider that the data of qualitative inquiry is most often people's words and actions and thus requires methods that allow the researcher to capture language and behaviour. The most useful ways of gathering these forms of data are participant observation, in-depth interviews, group interviews, and the collection of relevant documents. However, tape recording interviews can result in biased responses; often those being interviewed not being comfortable with the situation and thus giving potentially unreal responses. Lincoln and Guba (1985) do not recommend recording except for unusual reasons, basing their recommendation on the intrusiveness of recording devices and the possibility of technical failure. These factors will be taken into consideration both before and during case interviews, reviewing the circumstances on a case by case basis to ensure that accurate and non-biased responses are forthcoming.

Review of methodologies to be employed in this research

Today, literature within management accounting, decision-making and SME research aims to employ a positivist methodology, with many researchers selecting a large survey population, undertaking data collection and hypotheses testing. Post-modern epistemology states however that there are many ways to know. Therefore, a balance of different and appropriate methods should be identified, explored and wherever applicable, used. Research methods intended for this research reflect a compromise between the ideals of research methodology and what is practically possible within the context of both the research environment and the resources available to the researcher (Stoner and Holland, 2004). Resource constraints include limited research funds and researchers time and constrained organisational/management access time. The lack of a sponsor, a name that can be used to help 'open the door', may also prove to be a limiting factor.

Appreciation of the definitions and findings about qualitative and quantitative methodology show that, holistically, qualitative data (typically) involves words and is seen to be inductive; whereas quantitative data involves numbers and is deductive. Decisions about which kind of research method is applicable to any research project is often based on a researcher's own experience and preference, the population being researched, the proposed audience for findings, time, money and other resources available. An examination of whether to use qualitative or quantitative approaches also need be to be carefully considered. Orlikowski and Baroudi (1991) comment that all social phenomena have potentially many ways of revealing themselves and the way they are realised in practice depends on the methodologies employed by the researcher. In choosing a certain strategy, the researcher determines how the phenomenon being studied will be revealed, and indirectly, the consequences of the knowledge thus generated. Perry (1998) states there should be justification for the methodology in terms of the research problem and literature review.

Considering the work of previous researchers in multiple disciplines, for example Liebscher (1998), Morgan and Smircich (1980), and Perry (1998) (Table 4 - overleaf) it is possible to consider and the appropriate research methodology for this research:

Table 3: Qualitative and Quantitative technique comparison

Qualitative research	**Quantitative research**	*Source:*
Core Ontological Assumptions: Reality as a projection of human imagination	Core Ontological Assumptions: Reality is a concrete structure	Morgan and Smircich (1980)
Research problem: How? Why?	Research problem: Who (how many)? What (how much)?	Perry (1998)
Literature review: Exploratory - what are the variables involved? Constructs are messy research questions are developed	Literature review: Explanatory - what are the relationships between the variables which have been previously identified and measured? Hypotheses are developed	Perry (1998)
Methodology: For example, case study research or action research	Methodology: For example, survey or experiment	Perry (1998)
Research Methods:* Exploration or pure subjectivity	Research Methods:* Lab experiments, surveys	Morgan and Smircich (1980)
Complex phenomena; social in nature; do not lend themselves to quantification; and when understanding the cultural context from which people derive meaning is an important element of a study	Quantifiable measures of variables of interest are possible; where hypotheses can be formulated and tested; and inferences drawn from samples to populations	Liebscher (1998)

* included in original as methodology

Thus, when gathering data concerning which SMEs utilise a management accounting technique, or if in fact any management accounting is employed, then quantitative techniques can be employed. When considering why an owner manager or financial manager does not employ management accounting techniques, then a qualitative approach would be more applicable. These approaches are evidenced through the questions used in both empirical survey and case interviews. Kaplan and Maxwell (1994) assert that failure to understand cultural context may deprive the researcher of a real understanding of the problem at hand. Thus the strategy of utilising questionnaires to gather both qualitative and quantitative data augmented with case interviews to assist in the assimilation of understanding is deemed acceptable and has served to address this issue.

In addition, the methodology for this study is consistent with Allison et al. (2001). Firstly, through the reviews of the definitions of small and medium size enterprises, and even those of management accounting, a descriptive research is evident. The consideration and ultimately the clear statement of 'what is', followed by accurate and adequate descriptions for activities, objects, processes and persons. The purpose of this type of research is to give a clear 'picture' of a concept (or object), thus the most appropriate where definitions are to be clearly identified.

It is therefore found appropriate that the strategy for the research will be:

1. A literature review will outline the definitions appropriate, setting parameters for the study as well as offering investigation into prior research.
2. A questionnaire will be constructed and a pilot will be utilised to consider the wording and appropriateness of the questions. A full review will take place after the pilot and any amendments deemed necessary will be made.
3. Sufficient questionnaires will be distributed to ensure at least 100 usable returns are forthcoming. Strategies employed will be constantly monitored and adapted as required. Data analysis will take place on receipt of returned surveys using appropriate methods.
4. Five case studies have been highlighted as appropriate for the further investigation of the uses of management accounting with SME owner/managers decision-making. A pilot has been considered good practice to ensure the question design and recording techniques are robust. Once this has taken place, the questions and recording of the answers will be discussed with the pilot and any amendments necessary will be taken into consideration for the case interviews.
5. Five case interviews will take place, with dissemination of the findings taking place as soon as possible after the case interview. The potential for re-interviews is to be considered once the findings are reviewed and if it is considered appropriate, these will be requested.
6. Case narratives, findings from the empirical study, and findings from prior research will be considered and conclusions drawn.

The use of drafts and supervisors

One of the main concepts about any writing is the idea of drafts. Any piece of work, including a dissertation, will have to go through many drafts (Perry, 1994; Zuber-Skerritt, 1986). The definition of a draft (in its context as a plan) is a piece of text, a formal suggestion or a drawing in its original state, often containing the main ideas and intentions but not the developed form. This idea of first planning, then drafting and then sharing this with a supervisor forms the backbone of all university web-pages on good dissertation writing, the world over (Perry, 1994). Not only do universities highlight this as a process, but academic writers also highlight it and analyse why this is a good process to adopt. Supervisors and other candidates should be involved in the review of these drafts because research has shown that good researchers require the collaboration of others to make their projects work, to get them to completion (Frost and Stablein, 1992) and that social isolation is the main reason for withdrawing from postgraduate study (Phillips and Conrad, 1992). Collaboration of ideas takes away this lonely atmosphere (Conrad and Phillips, 1995) and additionally it gives the researcher a sounding board to help formulate ideas and findings and works as a pressure as to the completion of the work (Malfroy and Webb, 2000). Choosing the right supervisor is thus a very important process from both researchers and universities view (Elphinstone and Schweitzer, 1998). This study intends to drawn on the use of drafts and supervisors to enhance any analysis and to ensure that findings are presented in an academic style. Supervisory roles will include the collaboration of ideas as a means of bringing about a rich narrative as well as aiding the motivation and decreasing the isolation of the researcher.

Review of methodologies employed in this research

The construction of a variety of frameworks, aligned to previous research and consideration of methodologies employed, gave this study a justifiable research methodology. This was based upon post-modern epistemological stance of their being multiple ways 'to know' and also considering the narrative of Orlikowski and Baroudi (1991); by choosing a certain research strategy the scientist influences how the phenomenon being studied will be revealed, and indirectly the knowledge which is revealed. The research methodology identified as appropriate was, in the main, adhered to although it should be acknowledged that certain issues were forthcoming during the research and these had to be considered and dealt with as felt appropriate, keeping in view the original goal of this research as well as having an understanding that any variation from the original methodology may result in different results. An in-depth literature review was undertaken prior to the conceptualisation of the research strategy, which included an investigation into the historical background of cost and later management accounting techniques. From this a framework was constructed which gave focus to the study. A pilot empirical questionnaire was undertaken which led to amendments in the original questionnaire prior to it being launched. The empirical study was then launched, initially distributed to a selected research base. This resulted in nil return of usable responses and led to further amendments of the questionnaire and an alternate strategy of distribution. Further questionnaires were sent using a mixture of delivery methods and from a sample of 1100, 100 usable returns were received. These were analysed utilising a mixture of techniques and conclusions drawn. Initial responses led to a series of questions to be formulated as a framework for case interviews, with the narratives giving additional data towards the overall findings and conclusions drawn from this research. A pilot case interview was undertaken to assist in the case narrative study. Whenever it was considered to add value to the research, follow up interviews were held and the results considered in line with the previous interview findings. Additionally, prior research was utilised to confirm or refute findings, giving a richness of data for the research to draw conclusions from. The methodology considered appropriate within this study had been chosen to give a broad insight into the phenomenon, although due to its relatively small size and constriction of location, generalisations cannot be inferred from its findings.

Review of empirical study

Criticism of questionnaire studies include, but are not limited to, their limitations concerning the type of question that may be asked and the detail of answer available; response rate, including response/non-response bias; distribution methodology, including the lack of easily accessible/up-to-date data bases of SMEs; and the inability for coverage of the whole population.

Appling the above general criticisms to this study, it is acknowledge that the manner in which the questionnaire was formulated did not allow the instrument to discover systems, explore cognitive perceptions or to help identify social or technological problems. However, the formulation of these questions was intended to be acceptable and understandable by owner/mangers within SMEs, thus attempting at least to negate the criticisms of Rhoades (1992). Additionally, this empirical study was only a part of the research methodology. Consideration of previous research, such as that of Scapens (1991) and Brierley (2001), reviewing methodological literature such as the work of Birley and Moreland (1998) and utilising case based research were all intended to compliment the questionnaire survey, providing a higher standardisation and allowing for further insight.

The relationship between respondents' accounts and researchers' interpretations raises problems for qualitative research. Respondents' accounts are the key resource to qualitative researcher and need to be treated as central to any interpretation. Yet it is the researcher who sets the questions and who ultimately interprets the answers (Curran and Blackburn, 2001). This is further exasperated in questionnaire surveys where there is a limited response and no opportunity to corroborate understanding through further interrogation (as in case study research). Part of the questionnaire required ranking of statements, using a rating scale where 1="low priority/disagree" and 5="high priority/highly agree" (Collis and Jarvis, 2002) and although this can elicit clean results, these are subject to the respondents current view and may not allow a full range of responses. Additionally, there may be a bias element considering the expected result, whereby the respondent may answer questions with what they consider the required answers should be rather than considering their own appreciation of the question; or bias can be within the consideration of what ranks as high and what is considered low. This unconscious misrepresentation (Zikmund, 1997) is especially relevant when considering mid-ranking answers.

Terminology and the understanding of the question being asked is also a limitation. One question asked was concerning the use of the master budget; 96% of respondents stated they were unaware of the technique, yet 97% state they use financial data when making decisions; 90% stating they produce a cash flow forecast. This appears to be an anomalous response and as such warrants further investigation. The terminology used within a questionnaire, how it is interpreted by the researcher and the respondent, can differ. Likewise, answers given, even on a nominal scale, are open to interpretation. The nominal scale used within this question ranging from unaware of through to use all the time still offers different interpretations within its scale (for example, how much is some use?). The terminology used throughout the empirical studies could also have meant responses were skewed; 'master budget' may not have been understood and cited "unaware" for example, and although some of these anomalous results were highlighted in the original review, not all were visible through the initial results. There may have also been other considerations as to the results appearing to be anomalous, including both question and interpretation of results being based on the reviewer's knowledge of accounting, being different to those who ultimately partook in the study as well as unconscious misrepresentation.

A main limitation of this study was the low response rate and the methodology which was ultimately employed to achieve this response. Postal surveys in general are restricted due to their high rate of non-response (Ghauri et al., 1995). Additionally, the small business sector has notoriety for non-response to questionnaire surveys (Marriott and Marriott, 2000). The response rate to this survey was 100 usable surveys from 1100 distributed (9.1%). This low response rate is common to such studies, for example Templeman and Wootton (1987), a study sponsored by CIMA, had a 12% response rate. This reluctance to participate poses a problem for all researchers but could represent an important finding. The low response rate may also reflect the perceived sensitivity of the questions: While no financial figures were requested in the questionnaire, the questions may have been perceived as being intrusive (Dyt, 2005) especially since they were concerned with the financial management of the business and potentially included a number of techniques that an owner/manager had no knowledge about (and may not wish this lack of knowledge and understanding to be known).

Response bias is another area of concern. Within any survey there is the probability of respondents with specific characteristics within a selected population being more or less likely to respond (Curran and Blackburn, 2001). Additionally, response from a uniformed recipient may alter results and as such all responses were checked for the status of the writer. In the case of the responses received, the risk of uninformed respondent bias (Beattie and Fearnley, 1995) was minimal since all were completed by the owner/manager themselves. Likewise, unconscious misrepresentation can occur, whereby response bias arises from the question format, question content or some other stimulus (Zikmund, 1997). The low response rate may also suggest that the owner/managers who responded are likely to have more positive attitude towards the topic of the research than non-participants, however this cannot be tested using the methodology employed in this study (Marriott and Marriott, 2000). However, due to the low response rate in general and the close scrutiny of each questionnaire on receipt, it was considered tests for response bias comparing early and late responders (Armstrong and Overton, 1977) would not be required since the questionnaire did not contain suitable key summary variables and previous studies (Olson et al., 2005; Pavlou, 2003; Stank et al., 1999) have recorded no significant variations in early to late respondents replies. In addition, since any response may be biased in some way, by receiving replies from a more or less random population of the whole being surveyed, it was considered the responses received were indicative of the entire group (Wallace, 1954) although since SMEs cannot be seen as heteronymous, the results cannot be inferred to represent all SMEs. SMEs and their owner/managers have completely different personalities, their businesses often becoming highly personalised (McCartan-Quinn and Carson, 2003) and even if a convincingly representative sample was achievable aligned to industry size, and even if the response rate matched the sample, it would not be possible to offer authoritative conclusions about small and/or medium sized businesses generally due to the complexity of owner/managers persona, the heterogeneity of small firms or the special characteristics of localities (Bridge et al., 2003).

As previously stated within this section, aspects such as postal distribution, SME target and questionnaire surveys suffer from low response. Additionally, there are rarely up to date lists available of relevant small businesses from which to recruit a convincingly representative sample. FAME, for example, contains up-to-date and searchable information on 270,000 British companies taken from Companies House, but the requirement of this research was to consider SMEs, many of which are not companies and thus would not appear on this database. Aligned to this is national coverage. When utilising the postal system as a distribution method, a nil response was received and it was only via a personalised snowball distribution that replies were eventually received. This would not be possible if national coverage was required and as such national coverage is not usually attempted in most small business research projects (Curran and Blackburn, 2001). Even if a database was accessible and up-to-date, there is also the heterogeneity issue, as mentioned above.

The questionnaire survey applied the following concurrent techniques to diminish the above limitations, aiming to ensure a robust sample for analysis was received:

1. The questionnaire distribution was increased and the method changed from random mail to personalised snowball, the intention being to increase the response rate (Sian and Roberts, 2003).

2. Five owner/managers were interviewed (case narratives) to provide more understanding of questionnaire responses and to validate conclusions (Cuba and Milbourne, 1982).

3. After sending the original questionnaires a variety of follow-ups occurred since this is recommended as being the most effective way of increasing response rates (Cooper and Schindler, 1998; Sarapaivanich, 2003). These included:

   a. One week (original hand-distributed) - A verbal thank you was made to all recipients (even though there had been none), thanking them for returns and reminding others to complete and mail the questionnaire.

   b. Three weeks after the first snowball distribution – A new questionnaire (Goldstone and Kroll, 1957) was distributed in order to stimulate returns. Although these were given to the original contacts, it was envisaged they would be distributed to some of the original snowball participants.

   c. A hand-delivery was additionally made. It was felt that even though these potential respondents were not personally known, the fact the questionnaires were hand-delivered may attribute them higher standing in the recipients eye.

   d. A final attempt to bring the response to 100 was made by personally contacting several snowball distributors for their assistance in gaining responses.

4. This research also made use of and consider the following variables techniques in order to improve questionnaire response:

   a. The questionnaire was intended to be easy to read.
   b. To provide information about the survey, a cover letter was sent and the snowball distributors were fully briefed.
   c. There was a clear promise of anonymity.
   d. There were clear response directions, including adding an email to either send responses or to request an electronic copy to complete on-line.

Additional areas had also been considered but discounted for a variety of reasons, for example, it is suggested to include return envelopes and prepaid postage. Unfortunately this was outside the researcher's budget, although e-correspondence was offered, which could somewhat negate the cost of returning the complete questionnaire. The specifying of deadlines dates is suggested appropriate, however it was felt this may pressurise the recipient. Additionally, it is suggested that wherever appropriate all communication with the respondent should be personalised. This was somewhat achieved with the snowball and hand-delivered distribution, but the accompanying letters were still of a general nature.

A last consideration in this process was the recording and availability of analytical tools and techniques. Since the researcher only had a limited knowledge of SPSS, its facilities and analytical tools, both before the questionnaire was written and when inputting and analysing results, findings are potentially restricted. However, the low number of questionnaires has meant that a fuller consideration of each questionnaire has been possible. When each was returned, it was scrutinised in depth and from this the questions and areas for consideration from the case study research was constructed. This would not have been possible with a higher return rate and may not have been considered essential if an analytical tool such as SPSS had been used in depth.

Review of case narratives

Criticism of case studies include the lack statistical reliability and validity; this approach can be used to generate hypotheses but not to test them and that generalisation cannot be made on the basis of case studies (Hagg and Hedlund, 1978). Gummesson (2000) reports case studies as being extensively used as tools in education but comments that they are usually considered not robust enough for research purposes however, case study research is becoming increasingly acceptable as a scientific tool in management research.

To underpin the research, every case study should have a good plan and that good research (literature included) is necessary (Scapens (2004) . In this research, literature review informed the questions and methodology assisted in selecting an appropriate approach. The researcher went through the planning stages but the actual implementation was opportunist that led to variability. Additionally, the researcher had conducted literature reviews and had already formed opinion as to the findings from the case narratives prior to the first interview. It could be questioned whether a theory should exist prior to the interview stages, but it should also be considered that even if an interviewer went into an interview without having made specific reading and research, they would already have an opinion influenced by (for example) personal past experience, previous research, and/or papers read. No researcher's mind is an empty canvas, a *tabula rasa;* researchers approach phenomena with some implicit assumptions about what the expected results will be, casting a "net" over the facts they wish to capture (Vaivio, 2008). Thus there will be (potentially implicit) prior theory (Scapens, 2004).

The researcher had considered likely findings and results, including why these may have been so and negates some of the potential criticism here by acknowledging this fact. Additionally, it should also be noted that through the literature review, the researcher's opinion, although not dissimilar from the original idea, had altered and continued to alter during the course of the case interviews.

The different interview settings, coupled with how the case participants were chosen vary considerably. Since this is a significant variation it could add or distract from the research findings and needs to be acknowledged. It may also have an effect on the validity of research results (Birnberg et al., 1990). Convenience sampling is used by many researchers, in a plethora of disciplines (Tariman et al., 2009) including research into SMEs (McMahon, 1998) however, it can limit generalisation and may jeopardize conclusions and the transferability of results (Kraschnewski JL et al., 2010). Another limitation could be the number of case participants. This in part was due to a low response rate to requests to take part in the case research. The SME business sector has notoriety for non-response to all types of surveys. Marriott and Marriott (2000) used interview survey within their research and received 15 out of 228 (6.7%) responses to participate. Additionally, there can be an issue of bias; subjective and selective preconceptions and bias surrounding the background, agenda, and interests of the researcher (Buchanan et al., 1999). Glaser and Strauss (1967) however state that since accurate evidence is not so crucial for generating theory, the kind of evidence, as well as the number of cases, is also not so crucial. A single case can indicate a general conceptual category with further cases confirming the results. However, it is difficult to ascertain general trends from a series of single site studies that often follow very different ways of defining key factors and employ different theoretical approaches (Hopper et al., 2001) and so, although findings and results have been considered from these case studies, these should only be used as indications of how SMEs use management accounting techniques to aid in decision-making. With the limitations in availability of additional case participants and the methods of selection, it is considered that the advantages of convenience sampling, including easy accessibility of subjects and faster accrual (Tariman et al., 2009), coupled with the concept that case studies are subjective and do not lend themselves to generalisation, particularly in the case of SMEs as no two businesses, or owner/managers and their actions will be the same (Deakins et al., 2001), outweigh the limitations.

A final limitation is the consideration of what is the definition of a case study rather than a research interview. In this study it is considered that even the situations which allowed for the interviewer to return to an organisation for a follow-up interview, the interviews did not form a full case study and as such are being referred to as case narratives. The resources required from both researcher and participant exceeds the capabilities of this study and as such, although meaningful results have been forthcoming from the five case participants, these are narratives and not case studies. This does allow for a further investigation, using full organisational emersion, providing richer information to be completed in the future and aligned to this study.

Ethical considerations

(see also appendices 1)

Before conducting this research ethical and legal aspects in conjunction with principles of good practice were considered. These were revisited throughout the research to ensure that the concepts of honesty, excellence, integrity, co-operability and accountability were maintained. Training and skills development were undertaken throughout the research and all procedures were undertaken safely and with dignity of researcher and research subject being paramount. Although not available at the outset of this research, the current Recommended Checklist for Researchers (www.ukrio.org, 2010) were later utilised to examine the ethical considerations of this work.

The ethical considerations include an examination of the proposed research including whether pertinent question(s) will be necessary to investigate the phenomenon and whether it designed either to add to existing knowledge about the subject in question or to develop methods for research into it. It has been considered that the research being undertaken within this study is to consider the use of management accounting within SMEs to aid decision making. Very little previous research has been undertaken in this area indicating that this research may be able to not only add to existing knowledge but also to be utilised to consider methods of research appropriate in the area of SMEs. As part of this research, a risk assessment was conducted to determine whether there were any ethical issues; if there was a potential for risks to the organisation, the research, or the health, safety and well-being of researchers and research participants; and any legal requirements that may govern the research. It was identified that there were certain potential ethical issues involved in the case research since the researcher had prior knowledge of some of the firms. These have been acknowledged throughout the research and analysis processes and mitigation took place. Confidentiality was maintained throughout by the use of codes for names, with all research data being kept safely and destroyed after use thus complying with the Data Protection Act. Additionally, a review was undertaken with the supervisor of the study and it was considered that there was no conflict of interest and as such a formal review was not required. Recognition of prior relationships was made within the study. Furthermore, potential conflicts and limitations have been acknowledged and actions taken to mitigate their influence on the research data. The researcher has taken utmost care in ensuring the accuracy of data and results and has acknowledged the contribution of the work of others. The research has been undertaken within a reasonable time frame.

Conclusions

The choice of an appropriate research strategy concerns itself primarily with the research in question, along with the circumstances surrounding the research. The rationale in choosing one strategy over another is grounded in human nature, epistemology and ontology (Allison et al., 2001; Morgan and Smircich, 1980; Zikmund, 1997). A rigorous and 'good' research design, would lend itself to more valid conclusions and inferences may be drawn from the work (Ryan et al., 1992). Selection of the appropriate research methodology is dependent on the nature of the phenomenon being researched. In particular, the assumptions which the researcher holds regarding the nature of the phenomenon's reality (ontology), will affect the way in which knowledge can be gained about that phenomenon (epistemology), and this is turn affects the process through which research can be conducted (methodology). Consequently, the selection of an appropriate research methodology cannot be done in isolation of a consideration of the ontological and epistemological assumptions which underpin the research in question (Ryan et al., 1992). There is also recognition of the value of, need for, and required sophistication of qualitative studies of small business practice to inform business support initiatives (Sparrow, 1999).

This chapter has given a lengthy and fairly detailed discourse of the research methodology. The mixed methodological research philosophy and epistemology are considered relevant since they enable the researcher to consider, through the use of the empirical study and case narratives as well as a consideration of past research, the SME enterprise and how it utilised management accounting to aid decision-making. In the course of developing this methodology, many approaches, strategies and methods have been considered, explored and either rejected as inappropriate or incorporated into this approach in some form. Additionally, this mixed methodology approach has used, developed, refined and in some ways discarded previous work by the researcher as well as allowing the researcher the opportunity to consider methodology previous employed in research undertaken by academics.

The mixed methodology approach was considered appropriate since it allowed for a triangulation of data as well as addressing certain requirements of research: Yin (2003) states that results should be auditable and preferably employ more than one method of data collection. Statistical surveys aim for a representative sample to answer questions which can then be used to consider trends which can inform researchers to a 'norm' as well as to highlight areas for further consideration (Mitchell, 1983). Results can be transferred from questionnaires into statistical interrogation programmes, such as SPSS, which not only compile results, showing in alternate formats, but also show an auditable trail of responses. Kaplan (1984) and Lev and Ronen (1991) recommend that management accounting researchers go 'into the field' and learn the practices of innovating companies, following the lead of researchers such as Mintzberg, who is known for his small sample, field research. Case study methodology would enable the researcher to probe and to consider a panorama of factors and their interactions (Morgan and Smircich, 1980; Yin, 2003).

Throughout this research, the researcher has come to realise that research methodology is not just concerned with the gathering, selecting and abstraction of data but includes having the ability to adapt and change methodology and approach when appropriate. Certain limitations were envisaged and research methodology was chosen to negate these wherever possible; however other issues, such as the non-return of the original questionnaire distributions, although partially envisaged, required an alternative distribution methodology to be employed. This adaptation resulted in not only a return on the questionnaires under the new distribution method, but also a growth in the researcher's knowledge and understanding of research methodology. Skills must be practised so that confidence in their use is developed allowing the researcher to produce competent research data and ultimately better inform readers. The effectiveness of the methodology and approach set out in this chapter will ultimately be reflected upon and will form part of the concluding chapter of this thesis.

Chapter 5: EMPIRICAL STUDY

By temperament and training, the research worker is the antithesis of the pundit. What he is actively and constantly aware of is his ignorance, not his knowledge; the insufficiency of his concepts, of the terms and phrases in which he tries to excogitate his problems: not their final and exhaustive sufficiency.

(Fisher, 1935) pg 95

Introduction

The purpose of this chapter is to critically consider and evaluate the empirical findings, to compare them with theory and earlier studies and comment on their similarities and differences. Furthermore, the evaluations of results are contextualised in terms of the conceptual frameworks constructed within this study. The chapter will overview the methodological issues relating to questionnaire research, including its limitations, as well as considering the questionnaire responses.

Research practice is influenced by various facets of the researcher persona, for example their philosophy of science, perspective and training (Ghauri et al., 1995). As discussed in the methodology chapter, an empirical study through the use of questionnaires was considered by the researcher appropriate as one approach to data collection for this study. McDonagh and Rosenblum (1965) reported that data collected by mail questionnaire technique can be considered representative of the universe selected, in spite of only partial returns from the selected sample. Further, they claim there were no statistically significant variances between the mailed questionnaire and the structured interview with respect to identical questions. Additionally, since the large-scale survey is more anonymous, the respondent may be more willing to reveal more information than in a direct interview (Emory and Cooper, 1991). Questionnaires can accommodate simple topics, over a variety of sample sizes (from very small to very large), they are not restricted to any one location, including international borders, and can guarantee anonymity (Birley and Moreland, 1998).

However, mail questionnaire's are impeded by generally low response rates and response/non-response bias (Cooper and Schindler, 1998; Dyt, 2005; Zikmund, 1997) and unconscious misrepresentation; the informant interpreting a question or concept very differently from what the researcher's intends thus potentially answering a different question (Cooper and Schindler, 1998; Zikmund, 1997). Thus there is a greater emphasis on the writing ability of the researcher (Birley and Moreland, 1998). Furthermore, the informant might deliberately give a false answer or an answer without knowing, because he/she feels obliged to respond (Emory and Cooper, 1991), which is difficult to detect or negate. Finally, the questionnaire study can be very time consuming and laborious (Birley and Moreland, 1998) thus it is imperative that the questionnaire is written carefully, attempting to avoid response bias, time constraints and to make it as interesting to the reader as possible.

Considering the use of undertaking a questionnaire study challenged the researcher. Core skills identified to be effective in a questionnaire study are; communication skills, including identifying the relevant questions; planning processes and analytical skills. The limitations of the researcher's knowledge and availability of relevant databases from where to obtain SME business suitable to send questionnaires was identified and action was taken to remedy this, including contacting the local Chamber of Commerce. Additionally, the researchers' knowledge of data recording was limited to the use of spreadsheets; the researcher was aware of alternative recording and analysing programmes that were available but she did not have the knowledge or understanding of how to use these. Thus the researcher arranged to attend appropriate workshops in order to gain some understanding and make appropriate choices as to how to record and analyse the data from the respondent questionnaires. In this study, organisations were originally selected which were considered suitable as they met the pre-set criteria and were easily accessible to the researcher. Additionally, in order to avoid response error, the researcher conducted a pilot study, attempted to phrase questions clearly and in an attempt to clarify doubts or misunderstandings, sent a covering letter with the questionnaire.

Questions, recording devices and delivery methods

In accordance with the literature, the researcher made appropriate preparation to conduct the questionnaire study to ensure that all learning from the research had been taken into account. Language and structure had to be considered, along with the length of the questionnaire, the delivery method, and the collection and analysis of the resultant data. It was decided to limit the number of questions, especially considering an alternate form of data collection was being undertaken by means of case studies, to attempt to increase response rate. The use of coloured paper was also employed, primarily in order that the researcher could analyse from which method of distribution the questionnaire returned, as well as attempting to elicit 'an interest' in the owner/manager by use of coloured paper (Newby et al., 2003). Additionally, the recording of the results had to be considered. The researcher had a good working knowledge of excel as a basic recording and analysis application but it was considered a more specialised analysis tool, for example SPSS, would be appropriate, primarily since it allowed for the recording of data as it was received, it is a relatively easy programme to set up, use and interrogate, and there was access to experts within the University. When considering the construction of a questionnaire it is imperative that the response modes as well as analytical tools are also considered. Birley and Moreland (1998) outlined various response modes and from these it was found that a variety of question types would be required (Birley and Moreland, 1998), which included:

1. Nominal scales (e.g. What type of financial data do you record? Profit and loss account; Balance sheet; Cash flow forecast; ...)

2. Ordinal / Likert scales (e.g. Consider the techniques available to aid decision-making: Unaware; Inappropriate; Use sometimes: Regularly use)

3. Interval scales (e.g. What is the approximate balance sheet value? Below £1.5m; £1.5m - £7m; £7m – 35m; over £35m)

4. Ranked responses (e.g. Consider each of the following statements concerning the uses of financial statements. Use '1' in the box for the low priority /disagree through to 5 as high priority / highly agree).

Additionally, the delivery methodology of a questionnaire is important. Response rates from such studies are often low and postal questionnaires are often seen as burdensome to businesses (Cooper and Schindler, 1998; Sarapaivanich, 2003; Zikmund, 1997). The questionnaire structure and form had been considered by the researcher's supervisors and a request for assistance from an SPSS expert had been requested. The questionnaire was constructed around the areas the researcher considered pertinent to the study, drawn from the literature review findings. One area that had been identified as a potential area for investigation was considering the role of external influences on the decision-making processes. When this question was written it became unintelligible and as such a question outlining the decision-makers within the organisation, linked to their educational experiences was asked. However, this was also deleted after the pilot stage since it was seen as too intrusive.

To test the validity of the methodology used, including the form of the questions, the length of the questionnaire and the potential results from the respondents' answers, a pilot study of five questionnaires was conducted. A pre-test or trial run with a group of respondents can be used to screen out problems in the instructions or design of a questionnaire (Zikmund, 1997). The businesses were chosen from existing contacts, businesses that were willing not only to complete the initial questionnaire, but also to later discuss their answers to assist the researcher in ensuring that both parties fully understood questions and answers meanings.

Following the pilot survey, a critical review of the responses was undertaken to examine the functioning of the questionnaire, information gathered and methodological issues including the recording and analysing programmes available. Some questions were deemed too 'personal' and as such it was considered that an owner/manager may refuse to complete the whole questionnaire based on one or two questions. These were considered and in light of the overall findings, they were deleted, with a note to consider them within the case interviews. Additionally, when results were uploaded into a data collection programme (excel), they proved unwieldy. An attempt was made to upload into SPSS, but the researcher's limited knowledge of the programme led to this being abandoned at the pilot stage, although it was intended to further study the facility. The questions were re-written in an alternate style, which made the data handling more simplistic. The revised questionnaire was then discussed with accounting technician students to consider the amended wording, length and complexity as well as the initial pilot organisations. Details of questions deleted are evidenced in appendices 6. The updated questionnaire can be found in appendices 5, with the covering letter in appendices 4.

A variety of procedures for the selection of participants in the survey were adopted. The original intention was that the sample would be representative of companies that conform to the EC size criteria, using a quota sampling method. However, the lack of a suitable database led the researcher to consider alternate distribution channels using convenience sampling (Zikmund, 1997). Initially, a mail shot of 200 businesses (on blue paper), taken from the business pages, was undertaken, in line with Curran and Blackburn (2001) who suggest Yellow Pages as a valuable source. At the same time an additional 250 (lilac) questionnaires were hand delivered to accounting students at a college and 250 (green) questionnaires to management students at the same college. Both of these groups of students were alerted to the reasoning of the study, offered confidentiality and at a later date reminded about the forms return. It was considered this a mixture of delivery methods surveying sufficient numbers in order to gain adequate responses (Sharma, 2000). From this initial run of 700 questionnaires just 2 were returned. Both came from the accounting students and both were unusable since they were from large organisations and have been omitted from any further analysis.

The questionnaire was again reviewed and reduced to aid response rate. A snowball (150 / grey) sample was then utilised, whereby friends and associates were given 10 questionnaires and asked to pass along to SME owner/managers. Of these (initial) snowball questionnaires 21 were returned; of which one became a case narrative. A further snowball distribution (150 / yellow) was undertaken three weeks later. Further, a hand-delivery (100 / cream) to SMEs within several areas of the West Midlands was made, which resulted in an additional 69 responses (43 yellow/26 cream). Table 5 reports on these responses compared to their industrial sector.

These responses were deemed barely sufficient responses to find any meaningful findings from the questionnaire; however, it is possible to consider the result in a different context; that of the response rate to questionnaires. The researcher contacted the local Chamber of Commerce regarding the response rate to questionnaires among their members and was 'informally' told that receiving 2 completed returns from 700 was common. It was considered that most owner/managers of SMEs do not respond unless they have to, i.e. to an official or sponsored survey, or one where they feel they may benefit. The small business sector has notoriety for non-response to questionnaire surveys (Marriott and Marriott, 2000) and as such the response to the questionnaire survey was not uncommon and had been considered by the researcher prior to the research methodology incorporating an empirical study. In addition to the results of this empirical study, previous studies had also been interrogated, not only to align results from the previous investigations to those forthcoming on this research but also to align any response rates to these previous studies.

Before reviewing the results, a further 11 responses were received, mainly due to several reminders, of which 1 was from a large business and thus outside the remit of the study. All were from snowball distributed questionnaires; all were returned on the reminder questionnaire (white) and were considered in line with late response bias (Olson et al., 2005; Sarapaivanich, 2003).

The main emphasis of this last reminding session was on the recommendation of a senior academic who had recommended that 100 replies would be a far better sample than 90 since it would offer better data handling. In total, 1100 questionnaires were distributed, using a variety of methods. Of those returned, 90% had resulted from the snowball method, the remaining 10% resulting from known associates being encouraged to respond after initially ignoring the snowball distribution. The mail shot resulted in a nil response. Previous studies, often sponsored or by know academics, have resulted in a similar response: Keeble et al (1992) received 1,100 responses from 11,000 questionnaires. Dyt (2005) reports that from 1,000 sample, 103 questionnaires were returned to sender, with 156 replies received, a response rate of 17.4%. Of the 156 replies, only 121 small business responses (12.1%) were useable. Sian and Roberts (2009) received 299 (5.5%) usable responses from a sample size of 5,465, distributed over different time frames. Blackburn and Stokes (2000) reported that it took over 100 approaches to business owners to recruit their target of 8 willing to participate in a focus group. Additional research may be warranted to compare a sponsored questionnaire response to that of a PhD students undertaking un-sponsored study, although since this un-sponsored study succeeded in achieving a 9% response rate, this appears to be on a par with (potentially) sponsored studies.

Consideration must be taken to the response rate and any response/non-response bias (Armstrong and Overton, 1977) and thus due to the number of responses received from the sample population it is not possible to make generalisations about SMEs from the following findings. Previous research (Filion, 1975) shows that non-respondents behave like late respondents and non-response bias must be considered (Sarapaivanich, 2003). However, previous research (Olson et al., 2005; Pavlou, 2003; Stank et al., 1999) in a variety of different fields has recorded no statistical differences between early and late respondents. In general, social surveys do not contain any information on the reason for non-response or on characteristics of non-respondents, so that their relation cannot be studied (Dolton et al., 2000). Additionally, there is a probability of respondents with specific characteristics within a selected population being more or less likely to respond, response bias, also needs careful consideration (Curran and Blackburn, 2001). With this study, non-response was high, even after all reasonable attempts to follow-up were undertaken; however, all responses received were complete. Bias could have been reduced by imputation for item non-response (Abbasi, 2000) but this was not required in this study. The main aim of imputation is to produce consistent data without going back to the respondent for the correct values thus reducing both respondent burden and costs associated with the survey. Since the issue was one of questionnaires not being returned (non-response) rather than item non-response, this was not a relevant strategy. Thus alternative methods of considering the effects of non-response were utilised, which included comparing results with alternative sources including previous surveys and the case narratives undertaken for this study.

Findings

Before any questionnaire response was considered, it was checked for conformity to the SME parameters set for this study; that it fell within the European Commission Recommendation (2003/361/EC) as outlined in the literature review chapter of this thesis. Only 3[2] responses were from large organisations and were immediately discounted for further analysis.

General overview

The opening questions within the questionnaire were intended to identify the industry type of the business. The coding was adapted from the UK Standard Industrial Classification (SIC) to allow for greater scrutiny of certain sectors that were felt to be in operation within the SME sector. A limitation here though was a consensus as to SIC coding. Department of Business, Enterprise and Regulatory Reform (BERR) has links to both 2003 and 2007 codes on its website (BERR, 2009) and when considering the weighting of the responses to the industry size, it was impossible to align the BERR statistics with their own coding structure. However, an attempt was made to highlight any discrepancies in industry to response rate.

[2] 2 from original distribution of 700: 1 from last responses of snowball distribution

The highest number of responses overall came from the food sector, with 13% being received from specialist shops, such as butchers, bakers and greengrocers. When this is then added to other 'food' sector industries, such as catering (6%), supermarkets (10%), and fast food (5%), the total sector response is 34%. An abridged version of BERR SIC 2007 can be found in Appendices 7. A complete outline of respondents, linked to SIC and method of contact can be found in appendices 8.

Figure 9: Respondents Sector

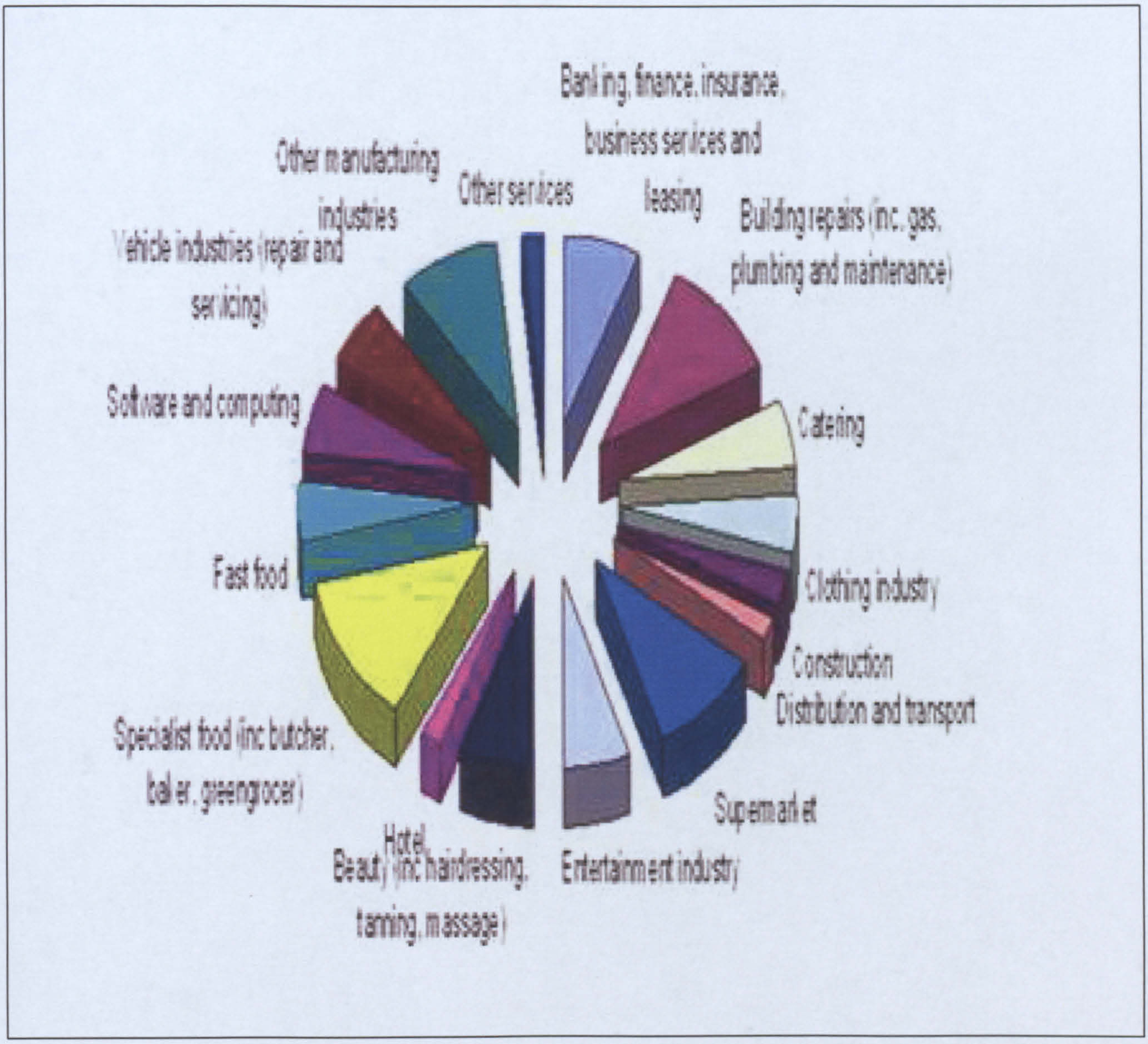


Table 4: Respondents Sector

Sector	*Response* Grey	Yellow	Cream	White	Total %
Banking, finance, insurance, business services and leasing	1	3	1	2	7
Building repairs (inc. gas, plumbing and maintenance)	4	2	3	2	11
Catering	1	3	1	1	6
Clothing industry	3	1	1	0	5
Construction	0	0	3	0	3
Distribution and transport	0	0	2	0	2
Supermarket	3	4	2	1	10
Entertainment industry	2	2	1	1	6
Beauty (inc hairdressing, tanning, massage)	4	3	0	0	7
Hotel	0	2	0	0	2
Specialist food (inc butcher, baker, greengrocer)	2	5	4	2	13
Fast food	0	4	1	0	5
Software and computing	1	3	2	0	6
Vehicle industries (repair and servicing)	0	4	2	0	6
Other manufacturing industries	0	5	3	1	9
Other services	0	2	0	0	2
	21	43	26	10	100

Fig. 9 and Table 5 provide an overview of the responses aligned to the industry and aid visualisation of the variances over the sectors being represented by the questionnaire responses. Although the questionnaires sent out were not targeted to ensure a representative sample, it was considered important to ensure that no one sector dominated results, potentially resulting in bias. Both clearly demonstrate that no one sector dominates, although the range from 'specialist food' with a 13% response to 'distribution and transport' 'hotel' and 'other services' at 2% each is potentially wide and may lead to skewed results. This needs to be acknowledged and any results need to be considered with this factor in view.

When attempting to align responses to industry sectors it became clear certain sectors are over represented in relation to their size in the overall UK business framework (Table 6 - overleaf). The responses have been weighted within SIC groupings in an attempt to reflect results in relation to the SME sector as a whole. When considering the weighted response percentages, it can be seen that certain sectors are not representative of their sector in relation to the SME sector. Construction represents fewer than 9% of responses, but over 20% of SMEs. Likewise, distribution and transport responses are just over 1% of the total responses yet reflect over 6% of SMEs. There are several factors that this could be associated with. Firstly, the snowball distribution was not targeted at ensuring an even distribution and thus the initial sample was not aligned to the business framework. Also, the questionnaire sector categories did not match completely with the SIC codes and thus best match was used to cross reference. In addition, certain sectors may be more willing to participate in such a survey. These are areas that could be considered for further study.

In addition to considering the findings of this survey, prior research has been consulted and mapped to results. However, since the research methods, questions and target recipients are all different and in many cases a full overview of samples and methodology is not evidenced, these can only be taken as general and not specific alignments. Where such information is available and relevant, this is noted within the results comparison. The following sections report on questionnaire results, in no particular order of preference thus no significance should be placed on their ordering.

Table 5: Outline of responses to number of SMEs (2007)

SIC code	*Questionnaire Sector (best match)*	Response %	No of SMEs within SIC	Weighted response %
D	Clothing industry			
D	Other manufacturing industries	14%	7.40%	8.75%
F	Building repairs (inc. gas, plumbing and maintenance)			
F	Construction	14%	20.90%	8.75%
G	Supermarket			
G	Specialist food (inc butcher, baker, greengrocer)			
G	Software and computing			
G	Vehicle industries (repair and servicing)	35%	12.00%	21.88%
H	Catering			
H	Hotel			
H	Fast food	13%	3.20%	8%
I	Distribution and transport	2%	6.40%	1.25%
J	Banking, finance, insurance, business services and leasing	7%	1.40%	4.38%
O	Entertainment industry			
O	Beauty (inc hairdressing, tanning, massage)			
O	Other services	15%	11.30%	9.38%
		100%	**62.50%**	**62.50%**

Management Accounting Techniques used

Techniques were included on the questionnaire in an attempt to align the usage of certain techniques within SME businesses with their background. Results appear to confirm initial concepts of techniques being employed tending to have come from industry itself rather than 'alternate' sources, such as mathematics and academics. This could in part be due to the terminology being employed and wherever possible additional findings will be sought from the case interviews. It was found that:

Academic

Respondents claim they are unaware of concepts such as Activity Based Costing (ABC) (93%), Total Quality Management (TQM) (99%), balanced scorecard (100%) and benchmarking (95%). As part of the questionnaire design, certain questions had been designed to provide corroborating data by asking for similar data in a different way. In respect of benchmarking, for example, when asked about their usage of financial documents, some 10% stated that they use them to some extent to make comparisons with their competitors, which could be an example of a form of benchmarking.

These findings conceivably align to those of prior research, Drury and Tayles (1997a) reported that 4% of their surveyed companies had implemented ABC systems with a further 9% planning to do so. Likewise Berry et al. (2002) found very low penetration of 'new' cost management including ABC (0.26); Management (ABC/M)(0.13). Interestingly, Mercereau (2006) linked the failure of various ABC and scorecard projects (in businesses) to the unwillingness of accountants to see the project through and although with an SME this could be envisaged to be the role of the owner/manager, it also raises an issue of awareness. Zaman and Gadenne (2001) reported that many of the firms they surveyed in Australia were unaware of particular state-of-the-art applications, such as ABC, Just in Time (JIT) or benchmarking. Berry et al. (2002) stated that external advisors may be key agents of change, but their study found that the advisors perceived value was relatively low, thus there was no impetus for change. The concept of SME owner/managers being unaware of such techniques as balanced scorecard appears surprising with the amount of literature extolling its virtues and linking it to use within and its benefits to SMEs (Andersen et al., 2001; Davig et al., 2004; Deakins et al., 2001; Kaplan and Norton, 1996; Monk, 2000) however, these may not be within the reading materials of the SME owner/manager, as indicated by previous research (Hankinson et al., 1997).

Mathematician

Once again, a high percentage of the respondents claim to be unaware of such techniques as simplex (100%), limited factors (97%) and regression analysis (100%). When aligning these results with prior research, it was noted that although there does not appear to be prior research into the usage of mathematical techniques within SMEs, various research studies into SMEs have used regression analysis to consider their findings (Appiah-Adu and Singh, 1998; Dholakia and Kshetri, 2004).

Economist

The concepts implied by economists as 'useful to businesses' had a more mixed response. Two such techniques, opportunity cost (99%) and transfer pricing (93%) again indicated little awareness by the SMEs, however break even analysis indicated that all respondents were at least aware of it, only 2% felt it inappropriate. Table 7 reports to the full results for this question and indicates that break even analysis is in routine use in over 39% of those surveyed. This is much higher than the results of Collis and Jarvis (2002) who reported that 9.6% used it on a months basis; 5.7% quarterly and 6% annually (sample taken from FAME - Financial Analysis Made Easy). However, Berry et al. (2002) reported that 39% of their sample used break even analysis on a regular basis (sample businesses of all sizes and kinds carried out in the Trafford Park industrial area, Manchester, UK). Factors that may have an influence here may include the type of industry surveyed and/or how prices are set, through to an understanding of what the technique is and a concept of fixed and variable costs. The table below indicates the lowest usage of breakeven is within the distribution and transport, however since this only represents 1 out of the 2 SMEs represented, this cannot be taken as indicative of the group as a whole. On further analysis of these two SMEs, the business stating that it did use breakeven prices jobs 'a little less than the competition' and the one not using breakeven uses full job quotation system. On examining the additional question written to indicate some validity concerning how often they utilise breakeven, the business that stated they did not use breakeven analysis stated they use it all of the time!

Table 6: Break-even results

	Use of Break Even analysis %
Unaware	0
Inappropriate	2
Could use	6
Some use	18
Sometimes use	35
Use all the time	39

Table 7: Sector analysis of the use of break-even

Sector	Use break-even	Totals
Distribution and transport	50%	1 from 2
Clothing industry	60%	3 from 5
Entertainment industry	67%	4 from 6
Software and computing	67%	4 from 6
Specialist food (inc butcher, baker, greengrocer)	69%	9 from 13
Banking, finance, insurance, business services & leasing	71%	5 from 7
Other manufacturing industries	78%	7 from 9
Supermarket	80%	8 from 10
Fast food	80%	4 from 5
Vehicle industries (repair and servicing)	83%	5 from 6
Building repairs (inc. gas, plumbing and maintenance)	91%	10 from 11
Catering	100%	6
Construction	100%	3
Beauty (inc hairdressing, tanning, massage)	100%	7
Hotel	100%	2
Other services	100%	2

This led the researcher to consider the test question. The first of the two questions, near the beginning of the questionnaire, asked "Does the business consider break-even points as part of its goal setting?" requiring a simple yes/no answer. The second, towards the end, asked "Consider the following techniques/descriptors (of which break even analysis was one). Please rank them from inappropriate (1) through to regularly use (5). If you are unaware of their use, please circle 0." Both SMEs who considered break even analysis inappropriate indicated that they did not use it. 67% (4/6) and (12/18) who could use or some use stated they did. This increased to 89% 'sometimes use' 'making use' of breakeven analysis and 85% 'use all the time', using it. Of these who state they do use it, after saying the do not, 2 were within specialist food, 1 from each of entertainment industry, supermarket, building repairs and the distribution and transport SME. Questionnaires were checked for accuracy of input. Without further investigation it cannot be concluded whether this was an 'error' concerned with the understanding of the question, a misunderstanding of the technique, or a simple anomaly. As such, this offers the researcher an area for further consideration through the case interviews, the above findings only being appraised with caution until some clarification is forthcoming.

Another aspect when considering break even is the historical context. Although it has been aligned to the economist in this study, it is only true to say that the historical background of the break even *chart* is linked to the economist and it is envisaged that the more simplistic calculations are perhaps more aligned with the technician, but these origins have not been corroborated through literature searches.

Engineer / Scientific Management

The term engineer was deemed appropriate for this section of concepts since the techniques were born from manufacturing industry, more specifically that of engineering. Techniques such as capital investment appraisal and variance analysis were introduced from this sector. However, as noted within the consideration of break even being linked to the economist, a grey area has formed here since although the techniques were originally developed within the industry, the scientific management school later considered and advanced these techniques resulting in, for example, formulae to analyse. This has resulted in some anomalies in considering techniques to their historical background, the full extent of which is difficult to quantify.

When discussing a technique face to face it is possible to elicit from the respondent how SME owner/managers consider their capital purchases, for example, by discussing the techniques employed. This is harder to do with the use of questionnaires since neither party can be 100% certain of the others meanings. Two differing focused questions were asked concerning these techniques, aiming to reduce the effects of unintentional misrepresentation.

Only 39% of those surveyed recorded that they would not use a form of capital investment appraisal, which reflects the 35% recorded by Zaman and Gadenne (2001). Additionally, 96% would consider non-financial information. Table 9 reports on the overall knowledge and usage of capital investment appraisal techniques and indicates a broad spread. Results were corroborated by the use of two different questions: The first of which asked specifically about a business's considerations when making capital expenditure purchases.

This resulted in 31% stating that they would consider alternatives, including looking at the payback of the project. An additional question asked the respondents about their knowledge of differing techniques, which indicates that 35% of respondents have used these and an additional 26% stating they could use capital investment techniques within their decision-making. The two show consistency, although it is interesting to note that the more specific question (including the term payback) resulted in a lower result than the second, technique specific question.

Table 8: CIA results

	Capital Investment Appraisal %
Unaware	21
Inappropriate	18
Could use	26
Some use	18
Sometimes use	8
Use all the time	9

Previous research has also indicated that smaller organisations ranked payback and the Internal Rate of Return (IRR) as most important and intuitive management judgement as the second most important technique to use when making investment decisions. Sarapaivanich (2003) found that unlike large firms, small firms (in Thailand), do not use sophisticated capital budgeting methods, reporting that they are more likely to rely on the payback approach. Berry et al. (2002) also concluded that payback was the most popular method (11%), adding *"if such a small percentage could be described as popular" pg. 14.* Table 10 below outlines a number of previous studies aligned to the results of this study. It must be noted however, that differentials in target size, delivery methods and additional variables, for example location and survey sponsorship, although acknowledged are not reflected in the table.

Table 9 Capital investment appraisal techniques used

	Own results	Berry et al.	Zaman & Gadenne	Drury & Tayles
	2008	(2002)	(2001)	(1997a)
Payback	31%	11.40%	21%	most widely used
NPV	12%	7.10%	13%	*35%**
IRR	2%	4.30%	13%	*35%**
ARR	1%	2.90%		21%
				* either NPV or IRR used

It is considered that smaller organisations place less emphasis on formal appraisal techniques (Holmes and Nicholls, 1988) and staff responsible (owner/managers in the vast majority of cases) for making capital investment decisions are likely to be involved in the initiation process (Drury and Tayles, 1997b). On considering the usefulness of financial statement in general, Sian and Roberts (2009) stated that respondents argued that their businesses were very simple and that other measures were therefore more relevant, with an example of business performance being measured not by profitability but by the number of customers. Owner/managers have detailed knowledge of their businesses and thus the projects/investments they wish to undertake. This may lead to them placing less emphasis on supporting financial data. In these circumstances they are more likely to base their decisions on 'knowledge of the business' and intuitive managerial judgement. The findings of this survey reflect and reinforce previous studies by indicating that most organisations use a combination of financial appraisal techniques to evaluate capital projects (Berry et al., 2002; Drury and Tayles, 1997b; Zaman and Gadenne, 2001). It also reaffirms the concept that managers reject sophisticated and more theoretically 'correct' solutions in favour of more basic (Pike, 1983) and/or satisficing (Simon, 1976) methods and highlighted the "very significant" rating that intuition played in the decision-making process (Hankinson et al., 1997). It is considered that this are needs further investigation through the case interviews.

Variance analysis was another area where two differing questions were asked and results again show some consistency. When asked about their use of financial documents, 30% stated they use them for variance analysis. When a technique specific question was asked as to whether they use variance analysis, 23% stated they used it. The variance in respondents' results could be, like investment appraisal, due to terminology. A simple form of variance analysis could be in use, whereby one set of financial documents are compared and analysed to previous documents. Table 11 shows the full results of the usage of variance analysis as a technique. These results are somewhat lower than previous studies have found, however a differentiated sample (size and/or target for example) may be a factor. Puxty and Lyall (1989) recorded 90% of respondents (423 manufacturing companies) included variance analysis in their periodic management reports. Drury et al. (1993) reported 76% of their respondents (also manufacturing companies) used some form of variance analysis. Collis and Jarvis (2002), a more comparable study of small companies (385), reported that around half those surveyed used a form of variance analysis which is corroborated by the findings of this research.

Table 10: Variance analysis

	Variance Analysis %
Unaware	25
Inappropriate	21
Could use	31
Some use	15
Sometimes use	3
Use all the time	5

Entrepreneur

Within those techniques linked to entrepreneurs are those of operating and budgeting activities. It is interesting to report that 96% of the responses recorded they were unaware of the concept of a master budget. This could be due to terminology, especially when considered with the results below for the technician. Edwards and Turnbull (1994) recorded only 11 companies from their survey results (10%) prepared no budget information whatsoever: Nayak and Greenfield (1994) recorded 34% (sample of 200 UK manufacturing firms that employ less than 10 people) used any form of budgeting; Rue and Ibrahim (1998) found 60% (sample of 253 US small firms employing at least 15 people) used some form of budgeting. Although it has been found that many SMEs engage in some form of budgeting, this does not mean that budgets are always integrated into the formulation of business strategy (Gorton, 1999). The limitations of a questionnaire study mean that the uses and potential terminology differences cannot be further explored here.

Although a background category of entrepreneur has been allocated, the distinction between the technician and the entrepreneur is grey and as such techniques that could have been allocated under this heading have been aligned with the technician.

Technician

The term technician has been adopted for those who work within management accounting in businesses. These tend to be accountants, although within SMEs, not all management accountants are professionally trained accountants. Likewise, the early pioneers within business had little knowledge of what went on in other businesses and so techniques born from this sector were technically unique to each business. Over time, textbooks started to be written and eventually formal educational programmes started. Techniques within this area tend to focus on the costs of products and services derived from the cost of manufacture, including labour and materials costs. Variable and fixed costs, job costing and costing for decision-making, including goal setting are also included within this area.

Again, responses have to be considered in light of the 'questionnaire syndrome' (Rhoades, 1990), including factors such as both parties not being fully certain of the meaning of question or answer or making unconscious misrepresentation (Zikmund, 1997). This is potentially evidenced in the recorded results that 36% used some form of cost determination when setting prices yet 93% state they calculate (at least sometime) variable costs. Table 12 reports the full spread of answers for this area and as can be seen, no business state they are unaware of variable costs, only 1% stating they are inappropriate.

Table 11: Variable costs

	Variable costs %
Unaware	0
Inappropriate	1
Could use	6
Some use	15
Sometimes use	32
Use all the time	46

Previous studies have considered the uses of full and variable costing within business. Cunningham and Hornby (1993) found that 58% of small firms used variable cost pricing and that 42% used full cost pricing. Govender (2000) found that 44% (14/32) of small (under 100 employees) firms use full cost and 56% used variable costs. Which lead him to the acceptance that larger firms are more likely to choose full costs whereas smaller firms are more likely to choose variable costs (his finding being 87% 'large' firms used full costing).

Other results indicate there is much use of 'costing' techniques within SME owner/manager decision-making, 97% use financial data for decision-making, with 61% saying that they use the data regularly. 93% use financial data to motivate, 46% saying it is a high priority usage and 93% also state use financial data to set goals, with 56% saying it is high priority.
Using cost data to motivate was one conclusion drawn by Graham et al. (1992), although it should be noted that this study was of companies and not SMEs. This substantiates the Institute of Management Accountant's (in (Foster and Young, 1997) definition of management accounting, which included the concepts of planning, motivates behaviour, and supports an organisation's strategic, tactical, and operating objectives. Likewise, Horngren et al. (1999) considers management accounting measures and reports are primarily intended to assist managers in fulfilling the goals of the organisation.

Use of financial data

All businesses reported that they regularly produce accounting documentation, consisting of profit and loss account and balance sheet. 90% produce a cash flow forecast, with 91% undertaking bank reconciliation. However, when considering the uses of the data, only 35% undertake some form of ratio analysis and 30% calculate some form of variance analysis. On further investigation, there is no discerning pattern as to those who do not either produce cash flow forecasts or undertake a reconciliation of their bank account and the 35% appears to be fairly representative of all groups and sizes of business who undertake some form of ratio analysis. However, the variance analysis results, whereby 30% claim that they undertake a form of analysis, appears unrepresentative. This result shows that two groups, the clothing industry and the beauty sector, undertake no analysis at all and both respondents who state they are 'other services' both claim to undertake analysis.

DeThomas and Fredenburger (1985) found 81% of small businesses (360 in Georgia, USA) surveyed produced summary financial reports, with only 11% using these in their managerial evaluation, even though 61% felt the information could be used for planning and decision-making. They also found only 2% performed financial ratio analysis and performed historical comparisons of performance and position. Collis and Jarvis (2002) reported that 67% of their surveyed companies used monthly or quarterly profit and loss accounts to monitor profitability, although budget variance analysis, budgeted profit and loss accounts and cash flow forecasts were used at least quarterly by just under half the companies. Some correlation can be seen in these findings, however, it must be noted that the sample of their work was companies and not SMEs. Additionally, Collis and Jarvis (2002) noted a positive association between the use of a monthly budgeted profit and loss account and the presence of a qualified accountant on the staff or board of directors, potentially implying that the regular generation of budgeted information and use of sophisticated tools for financial planning and control is dependent upon the availability of professional financial expertise within the company.

Similar findings can also be seen though in the work of Dyt (2005) within small businesses in Australia; 87% (120 businesses) considered the profit and loss reports useful and very useful (68% balance sheet); although only 69% (53%) said they had this statement. Additionally, cash flow usefulness was 70% yet only 36% received the report. Dyt (2005) concluding that while business owners had a favourable view of these reports, they do not necessarily have or use these reports, which in part corroborates Sian and Roberts (2003) conclusions that small owner/managed enterprises do not utilise cost or expenses information to the extent that they utilise revenue information. The most important use by owner/managers being seen as confirmation of performance for a period, rather than use for planning and decision-making. Additionally, Sian and Roberts (2009) found that few SME owners are able to understand the contents of statutory accounts and rely on their accountant to explain the details to them.

Another consideration of the use of financial data, as can be seen above, is its availability. 92% of those surveyed used some form of computerised accounting (although 65% consider they use some form of coding system). This corroborates other research, Sian and Roberts (2003) who stated the "majority" of their SMEs used a computerised accounting system and a significant proportion used computerised spreadsheets. Zaman and Gadenne (2001) report that 80% of their surveyed SMEs used computerised accounting. Argilés and Slof (2003) considered the prevalent use of computers within Australian small business, further commenting that for financial reports to be worthwhile the benefits must outweigh the costs, both financially and physically. Thus, those businesses where accounting software is already in existence, the generation of financial statements without further costs is self-evidentiary. However, in the businesses with manual recording, the formalising of these summaries to financial statements would be too onerous and thus any benefit would be outweighed by the costs, thus the business would not carry out such a venture. In a more recent survey, Davis (2009) found that only half of those surveyed (US small, retail apparel industry) utilised computerised accounting. This study indicated that those businesses implementing computerised accounts used financial data more in decision-making, for example 84% of small business owners employing computerised accounting utilised it for performance assessment, compared to 68% manual owners; decision-making was aided by computerised data by 59% compared to 35% of manual accounting SMEs and utilising the data for planning indicated 59% of computerised SMEs used it compared to 34% of manual owners. However, another US survey reported that those that do use computerised accounting tools, use them simply to replace traditional manual systems and do not use the information available for decision-making purposes (Bureau of Manpower Employment and Training (BMET), 2006).

Pricing of products

When consideration of how prices are calculated is made against the usage of financial data when making pricing decisions, it is found that 88% of the respondents businesses make use of the financial data, regardless of how they calculate their prices. The questionnaire could not specifically ask how the financial data was used, although it did ask how prices were calculated, results of which can be seen below. However, it was interesting to note that even though 88% of businesses claim to use financial data when considering pricing their product, 96% state they have no awareness of the concept of the master budget (thus, no awareness of the construction of such items as sales and production budgets) This could be to do with terminology and as such, the interviews for the case narratives will investigate this further. Further, 6 out of the 9 businesses who state that their prices are set externally still claim to use the financial data. It can also be noted that the highest percentage of these externally-set prices are from franchise businesses, mainly vehicle repairs and fast food.

Of the 20% who claim to "deduct a little from their competitors prices" to set their own (the highest ranking way of setting prices); just over half still use their financial data, although the questionnaire did not ask for what purposes. The industrial spread of these 20% is weighted towards entertainment, beauty and building, however the response numbers are too small to make any real comment on this.

Of the 41% who use some form of cost determination in respect of overheads, almost 10% state they see financial data as a low priority and 17% stating it is only occasionally used, which does seem to be an anomaly.

There is a spread of differing techniques used for price determination with the highest respondent group being specialist foods, although it is true to say that this is skewed towards cost plus. The second highest respondent group was that of building repairs and of that group, their main form of cost determination was that of considering their competitors pricing, with over half stating they charged either what their competitors did, or a little less. 90% of the third group, supermarkets, considered what it cost to buy and then added either "a bit" or "a percentage" to cover overheads, similar to the specialist food stores. Those businesses that used job/standard costing appear to be within more 'end-product' specific industries; manufacturing, catering, clothing and construction in particular. Cost plus appears to be where multi products are brought and then sold on and a basis of competitors pricing is used where a service is provided.

These findings are consistent with the work of Drury and Tayles (1997a) who considered costing from a 'simplistic' computation hypothesis, finding that that product costs derived from stock valuations are widely used ("often/always"), with 79% respondents utilising total manufacturing costs or total costs for decision-making by merely adding non-manufacturing costs (simplistic allocation methods) to the costs that are required for meeting inventory valuation requirements. This lead them to conclude that simplistic methods were being widely used for decision-making, suggesting that product costs are being derived from cost systems that have been designed primarily for meeting financial accounting requirements, consistent with Johnson and Kaplan (1987). This was substantiated in their later work, where only 9% of manufacturing units surveyed had separate costing systems for stock valuation and another for decision-making (Drury and Tayles, 2000). Emore and Ness (1991) reported similar findings in the USA, whereby 76% of surveyed businesses were using identical product cost information for decision-making and financial statement inventory valuations.

Consideration of who sets prices was also undertaken. 74% reported that prices are set by the owner/manager, 16% by an internal bookkeeper/accountant and 10% of prices are set externally. Zaman and Gadenne (2001) reported that 70% of the SMEs they surveyed relied on an internal 'financial' member of staff to set or advice on the setting of prices. This needs to be considered in line with how many business stated that they employed a bookkeeper/accountant. (The corresponding data is not available in the work of Zaman and Gadenne (2001) to compare.) All SMEs who employed an internal bookkeeper had their prices set by that person. A correlation could also be seen as to the techniques employed when setting the price and who sets the price, with the use of standard costing (8 / 16) and job costing (4 / 16) methods being used by the internal bookkeeper; the owner/manager who employs an external accountant utilising competitors price as a basis (26 / 64) and utilising an external bookkeeper using the same method (6 / 20). None of the businesses who had prices set externally employed an internal bookkeeper, however one business stated that their prices were set externally but also indicated that they were calculated by the owner/manager. This could be an error or could indicate dual pricing. This is fairly well established specialist food shop, employing up to 5 staff (no internal bookkeeper), undertaking fairly sophisticated accounting analysis (including ratio and variance analysis).

Life of the business

Miller and Friesen (1984) state that as businesses survive and develop, the range and sophistication of different managerial techniques and practices that they deploy tends to increase. The points in time at which different types of practices are deployed tend to be mapped against the business life cycle; growth, maturity and decline, their strategies altering and changing with learning, innovation and experience (Deakins et al., 2001) – experiential learning (Grant et al., 2001; Ottens, 2005). Thus, it is important in this research to consider the use of techniques mapped to the age of the business, although this is not taking into consideration previous businesses the owner/manager may have had an as such it could be argued that their managerial techniques are not being investigated to the full.

Considering the pricing of products, the three main techniques were using competitors prices, cost plus and full cost, there appears to be no correlation with the use of competitor's prices and the age of the business (although as seen above there is a correlation with the employment of an internal bookkeeper). 10/32 SMEs in this section were over 15 years old, in comparison 8/32 were between 1 and 3 years old. However, full costing appears to show some corroboration, with 9/13 SMEs being over 15 years utilising this somewhat 'more sophisticated' method. This could be a reflection of the nature of the business; of these 9 businesses 6 classified themselves as other manufacturing services; no other sector had more than 1 representative. Full alignment of these results can be seen in Table 13 below. With low numbers surveyed, and such a wide mix of techniques, this research is unable to confirm or refute Miller and Friesen's (1984) claim.

Table 12: Life of business compared to costing of product

		How much it costs to buy plus a bit	However much our competitors charge	A little less than the competitors price	Each job is individually priced and charged at full cost, including overheads and estimated profit	**Total (all surveyed)**
Lifetime	Less than 1 year	0	0	2	0	**2**
	1 - 3 years	3	2	6	0	**13**
	3 - 5 years	1	3	2	1	**14**
	5 - 10 years	1	1	1	1	**9**
	10 - 15 years	4	1	4	2	**19**
	Over 15 years	6	5	5	9	**43**
Total		**15**	**12**	**20**	**13**	**100**

Conclusions

Due to the number of responses received from the sample population it is not possible to make generalisations about small business decision-making techniques; however it is considered that sufficient responses were received to make meaningful deductions. Additionally, industrial sectors and business types and variations in business ownerships were not all represented in the responses and the number of replies was not large enough to be statistically representative of any one group of small business in general. However, much of the research work in accounting must, by its nature, be inconclusive (Flint and Shaw, 1981).

One main function of the questionnaire study was to confirm or refute the concept of usage being aligned to the historical background of the technique. The initial concept that those techniques 'born' within an industrial background, 'invented' by technicians and entrepreneurs would be seen in greater use than those of the economist, which in turn would be more evident than those written about by academics was tested. The results appear to confirm this initial concept and further evidence has been collated through the use of prior research mapping. This requires alignment to the case narratives within the interpretation chapter.

Chapter 6: CASE NARRATIVES

The case study is a research strategy which focuses on understanding the dynamics present within single settings. . . Case studies can be used to accomplish various aims: to provide description, test theory, or generate theory.

(Eisenhardt, 1989) p. 532

Introduction

Methodology literature emphasises that an ethnographic approach offers the opportunity for researchers to get 'close' to a phenomenon. Additionally, small firm research calls for more grounded data which can be collected using ethnographic approach (Curran, 1989, Grant et al., 2001). Methods chosen for researching entrepreneurs should be specifically adopted to suit the purpose of studying SMEs in the context of their everyday activities and the value they attach to specific actions (matching the method with the phenomena); rather than attempting to 'interpret' phenomena in the context of some theoretical academic framework (Grant et al., 2001). In addition, management accounting is more than just accounting, it requires people who understand the behavioural consequences of numbers and who can link controls to strategy (Mercereau, 2006), considering the behavioural aspects of a business are largely ignored by survey's (Deakins et al., 2002) and thus case study methodology would be suitable when considering the implementation of decision-making in SMEs.

Case studies and case narratives, from a phenomenalistic stance, can be used to demonstrate the deep complexity of accounting and decision-making in any organisation. Phenomenalism is concerned principally with the description and classification (Allison et al., 2001), whereby phenomena is used to define circumstances, happenings, curiosity and even miracle. Thus case studies can avoid the theory-testing processes of positivism and self-referencing characteristics of functionalism (Scapens, 1990) leading towards a development of in-depth knowledge regarding a situation, event or subject. It is the intention within this study to utilise the case interviews to develop further issues transpiring from the empirical study questionnaires, allowing for greater depth and understanding to be gained in highlighted areas of interest, which will be presented as case narratives. It is considered for the purpose of this research, a case study, being an in-depth, detailed analysis, would be obtrusive on a SME owner/manager as well as being outside of the scope of the researcher. A case narrative, an analysis of an SME owner/managers businesses from a single (or wherever possible duo) interview, would be a more appropriate definition. It is considered the process of the data identification, collection and analytical processes in both case study and narrative are identical, thus issues regarding case study methodology are appropriate in their consideration.

Considering the use of case studies challenged the researcher initially, Scapens (1990, 2004) and Yin (2003) both comment on the difficulties of undertaking case study research and comment that some critics consider it to be a soft option. However, having reviewed the literature, literature concerned with case study approach as a research tool (Buchanan et al., 1999; Gable, 1994; Grant et al., 2001; Gummesson, 2000; Myers, 1997; Robson, 1993; Ryan et al., 1992; Scapens, 2004; Sparrow, 1999; Stoner and Holland, 2004; Yin, 2003) and literature that effectively used the case study, more importantly within either SME or accounting research (Deakins et al., 2001; Drummond, 2004; Dyt, 2005; Gunasekaran and Singh, 1999; Tayles and Walley, 1997; Zaman and Geno, 2000) it was considered appropriate to use a case study approach within this research in order to discuss operational aspects of the implementation of management accounting techniques to aid decision-making within specific SMEs and wherever possible and appropriate, to examine further aspects highlighted in the questionnaire research.

Core skills identified to be effective in a case study are; communication skills, identifying the relevant case studies, and the planning processes. The skill requirement of the activity were reviewed against the researchers core knowledge and expertise and an action plan put in place, such as attending workshops, to increase her knowledge in these areas. A further limitation was the potential lack of access to appropriate case study businesses, however, sometimes case study opportunities appear and researchers can use easily accessible cases (Scapens, 2004). In this study, organisations were selected which were considered suitable for study as they met the SME criteria adopted for this work and were easily accessible to the researcher.

Questions and recording devices

In accordance with the literature the researcher made appropriate preparation to conduct the case studies. For example, the language used by the interviewer deliberately excluded technical management accounting terminology (jargon), focusing on what the owner/manager did in relation to various aspects of the business. Simple 'factual and descriptive' questions were used to ensure clarity and which made the interviewee feel at ease (Deakins et al., 2001). Care was taken to avoid leading questions that could influence responses by the interviewee (Grant et al., 2001) whilst eliciting the 'correct' information from the interviewee and putting them at some ease. One of the main issues in this research emerged to be communication, especially when specific information was requested. Communication is one aspect of case study research which is extremely important, both between the subject and the researcher, and with the researcher and the ultimate recipients of their findings, the reader of their reports and papers (Scapens, 2004). Another important element is 'trust' which is essential to a researcher and the participants. More so when the financial management practices of SMEs are explored and financial questions are explored. Here the need for confidentiality is of paramount importance. Unless assurance of confidentiality is provided by the interviewer, owner/managers will not contribute sensitive financial or finance-related data (Deakins et al., 2001). This assurance was given and re-iterated several times during the interview process. Finally, with each participant the researcher had to introduce herself and outline both the research and her abilities to undertake such a project, ensuring that there was an understanding of the credibility of both. This is important not only to gain the participant's trust and input, but also to ensure that the responses were honest and in-depth.

To ensure all aspects were considered and effectively planned prior to the interview, the researcher considered strategies used by previous researchers (Shank and Govindarajan, 1989; Stoner and Holland, 2004). In preparation for the interview, the researcher gathered generic information wherever possible from the firms web-pages and networks using considered information seeking techniques (Carol, 1991), a practice that is gaining acceptance amongst researchers. This approach was adopted to save time in the interview since generic information about the company had already been collected and considered, also helping the interviewers understanding of the business and aiding in the development of an empathy with the interviewee. This enabled the researcher to consider more substantive issues in the interviews; a methodology that is adopted by both researchers and businesses who use the web pages for marketing and communication purposes (Lituchy and Rail, 2000; Siegel, 2000; Young and Benamati, 2000). This is part of the good prior planning approach outlined by Scapens (2004).

To test the validity of the methodology used to gather information through interview, a pilot study was conducted. This was to ensure the preparation for the interview; logistics of recording, the wording of questionnaire and time management issues were experienced in a live situation. The pilot process was aligned with well established empirical studies conducted by researchers (Berry et al., 2002; Dyt, 2005; Ghauri et al., 1995; Gibcus et al., 2005; Malfroy and Webb, 2000; Zikmund, 1997). To ensure the simulation was realistic and challenging, the researcher identified a business that exhibited all the attributes of the target businesses for study, which although willing to give time to the research process was unwilling to participate fully in the case reporting. A senior manager, working within the firm, assumed the part of the business owner. The purpose of this pilot was to test the questionnaire prior to a real interview with an SME. It also gave the interviewer a chance to practice the appropriate terminology; consider how to make the interviewee at ease, specifically when using recoding devices and how to enhance trust, an approach consistent with Berry (1999).

Following the pilot interview, a critical review of the transcript was undertaken to examine the functioning of the questionnaire and information gathered and methodological issues. The approach and techniques were discussed with the interviewee to incorporate his feedback to further enhance the live case study interviews. Aligned with the methodology consideration discussed within the methodology chapter, the questionnaire was refined for the actual case interviews. From research on case study techniques, along with the pilot interview, it was decided that a semi-structured methodology, complemented with an exploratory interview would be used within this study, whereby the researcher has a broad framework for the questioning, thus offering the interviewee the opportunity to reflect on the issues and provide a deeper insight into the structure and functioning of the business. The semi-structured methodology lent itself well to the requirements of this study, an approach well embedded in earlier research such as within a similar study by Marriott and Marriott (2000). The second part, an exploratory case study, is used to explore the possible reasons for particular accounting practices. As such exploratory case study represents a preliminary investigation, which is intended to generate ideas and hypotheses for rigorous empirical testing at a later stage (Scapens, 2004).

Semi-structured questions were pre-printed with gaps between them so that brief comments could be put against each area. Additionally, the use of a recording device was considered to aid basic note taking. Tape recording interviews eliminates the need for the researcher to rely on memory or to have to make notes throughout the interview, which can be distracting for both interviewer and interviewee. Literature suggests that recording contributes to an objective interpretation of data (Deakins et al., 2001). It was envisaged that by the end of an interview, a tape recording of the proceedings, along with notes taken during the interview, would be available for further study and analysis. This would also confirm the authenticity of the evidence. The researcher needs to be sure that the data collecting instrument is both valid and reliable. This methodology gives rise to data protection and ethical issues, something considered by assuring that the data would be used only for this study and anonymity would be maintained. All researchers have to comply with a moral framework to address care, trust and concerns and integrity and wishes of the respondents (Birley and Moreland, 1998). Any tape recording of interviews would prove the responses to questions written on the basis of eliciting non-biased information.

First Opportunity (Case Study Z)

First interview

The first opportunity at gathering evidence for a case study was an opportunity that materialised out of a chance incident. Scapens (2004) comments that selecting suitable cases can be a problem, especially when undertaking PhD research. Adding that the researcher can use easily accessible cases; however this may require some modification of the research questions and/or the theoretical framework. Initial contact with the business was on a non-related matter and when first approached about the participation of the study, the owner/manager was somewhat resistant. However, after further elicitation, an interview was booked, although the research access remained controlled by the owner/manager as gatekeeper, since he was concerned with who would know about his business affairs and as such had a direct interest in the outcome (Whitley, 1984).

Previous literature has shown the importance of not only the ensuring that the setting is conducive to the interview process, but also making sure the interviewee is put at ease (Maykut and Morehouse, 1994). Additionally, it is imperative that part of this process is to explain the purpose and context of the research. On arrival at Z's office, the interviewer set about fully explaining the proceedings, including the research question and although the researcher took time to make the respondent at ease, she decided that the idea of the tape-recording the interview would potentially impose a barrier to the interviewee's responses and decided that note taking was more appropriate. To tape or not is often a consideration that has to be undertaken usually at the planning stage (Hayes and Mattimoe, 2004) but all researchers must use differing communication forms and revise their plans wherever necessary since the plan is not inviolate, modifications may need to be made from time to time (Birley and Moreland, 1998). Therefore, to maintain some reliability and to assist in recall, straight after the meeting, notes were taped and transcribed, additional notes being made on transcript and on proof reading.

During the planning stage, it had been decided to use a semi-structured interview. Notes were taken during the interview, however it is acknowledged that manual taking of notes has limitations on the researcher, who has to not only ask questions and consider the reply, but also has to listen to quite a lot of potentially non related information and have the ability to discount this or consider further implications of the information and ask relevant searching questions to illicit this information. Where there were uncertainties in the comments, these were highlighted and notes made separately to attempt to find out more at a later stage, either by telephone or using the second interview. At the end of interview the researcher and interviewee agreed to follow up after a specified period (Deakins et al., 2001) to clarify answers and meanings.

One of the main limitations of this interview was the ringing/answering of the telephone and the effect this had on the flow of questions and answers. These experiences mirrored those of Hayes and Mattimoe (2004) who observed similar limitations whilst interviewing employees of Irish Hotels, who were answering questions whilst having their lunch breaks and attending telephones. However, it did allow the researcher time to write brief notes whilst the interviewee was talking on the telephone, although there was then a lead time to get back into the interview mode. Overall, it was considered that useful information had been received. Additionally, the interviewer had undertaken her first experience of this form research in a real setting and this aided her confidence. It had given her an insight into the way planned interviews worked in reality, including how such planning, although essential, has to be constantly revisited both on initial contact and during the process.

Second interview

The second interview was easier to commence as at this stage confidence and a rapport was established that made the interviewee more relaxed and accepting. On arriving for this second interview, the researcher was asked whether she wanted a cup of coffee (this didn't happen on the first interview) and when it came, it was in an old chipped mug. Intuitively, it was felt then that the rapport had been secured in the interview process; that such a mug would only be given to the inner circle of business associates. This highlights the issue of trust and acceptance which are well documented in the qualitative research (Birley and Moreland, 1998; Deakins et al., 2001) as well as highlighting the fact that the actual experience develops the confidence of the researcher especially where their methodology mirrors the earlier studies (Hayes and Mattimoe, 2004).

Informality and trust were also evident through the openness of the narrative. The interviewee proceeded to divulge information about the changes to the business set-up and procedures employed including the purchasing of textbooks to help him identify techniques appropriate to his business. Scapens (2004) considers the non-participant case study and this had originally been the intention of the researcher but as the interview progressed it became evident from the responses that the questions discussed in the first interview had potentially lead to change. Consideration by the researcher of the demand effect of a participants behaviour, in which participants behave in a certain way because they believe it is required of them (Birnberg et al., 1990) needed to be made including the fact that the interview process had potential to cause shock which could lead to change. Schroeder et al. (1986) consider the concept of 'shock' on innovation and change. They found that innovation was more prevalent when some major change occurred in the organisation or its environment. Ideas were often generated within an organisation but not acted upon until some form of shock occurred. They consider shocks include such things as new leadership, product failure and a budget crisis. Another possible reason for the altering of behaviour of the interviewee could be due to his preference to be presented in a more favourable light to the observer (Atkinson and Shaffir, 1998). Alternate to or conjoined with the above, could be the effect of the 'conscious competence' learning model (Chapman, 2010), based upon the "Four Stages of Learning," a theory posited by 1940s psychologist Abraham Maslow. The theory is an explanation of how people learn something, progressing from 1. Unconscious Incompetence (you don't know that you don't know something), to 2. Conscious Incompetence (you are now aware that you are incompetent at something), to 3. Conscious Competence (you develop a skill in that area but have to think about it), to the final stage 4. Unconscious Competence (you are good at it and it now comes naturally). Linked to 'shock', there is the possibility that the interviewee was unconsciously incompetent until the interview, at which time they investigated into a specific area and potentially become consciously incompetent or even consciously competent prior to the next interview. (It is considered unlikely that the fourth stage would be applicable since the time passed was limited.)

It is considered in this situation that some of the change had taken place because of the interview, more was related to the consideration of how the business had initially been in contact with the researcher, that of looking to employ a bookkeeper to *"tidy-up the files and affairs and set up some sort of basic procedures to help run the business more effectively."* The response of the interviewee changed the focus of the second interview. The research plan was modified (Birley and Moreland, 1998) from finding out more about the systems (or lack of) in place in the businesses at present, to considering what systems may be implemented in the future and even to why these systems were considered beneficial, since only if there is a benefit should any business consider implementing a new way of working. Another consideration was the demand effect, whereby participants behave in a certain way because they believe it is required of them (Birnberg et al., 1990) and how this had influenced changes. It is considered that to a certain degree these effects came into force after the initial interview.

A manual form of note taking was once again employed since the researcher still felt a tape might impinge any discussion and notes thus had to be kept to aid memory for further analysis of the interview. Confidentiality, in all ways, was again re-iterated and promised. To enhance the relationship, notes taken from the first meeting were given to the interviewee, who scanned them and confirmed of their accuracy and reasonableness (Atkinson and Shaffir, 1998). Straight after the second meeting, notes were taped and transcribed, additional notes being made on transcript and on proof reading.

According to Modell (2005), it is normal when conducting case studies, to employ triangulation of data whenever possible, as this method helps to validate results. With the consent of owner, the researcher had access to the bookkeeper. However, it was considered (by the researcher) not appropriate to discuss the research with her, since in the words of the owner, *"I put what I can onto the computer [in the way of invoices and bills], but that's about it"*, and when asked about her new job, the bookkeeper confirmed *"it's a bit of a mess, he's managed to get things into some order, but I have no real idea what he then does ... give me time though!"* It was therefore considered unethical to discuss any findings or issues or to try to gain any further insight into the decision-making processes of the business from the bookkeeper.

Second opportunity (Case Study G)

Multiple case studies can be used for two purposes; replication and theory development: Similar cases to replicate the theoretical explanations; dissimilar cases to draw out implications from their comparison and/or to extend the theory to a wider set of circumstances (Scapens, 2004). Case studies are subjective and whereas some researchers consider a strength to be that they can offer a generalisation (Buchanan et al., 1999), others consider that the aim is not to 'expose' a general truth, but to facilitate understanding of process through studying a subject within the context of its existence (Deakins et al., 2001). Additionally, the uniqueness of individual cases and contexts is important to aid understanding (Stake, 1995).

The second opportunity to gain access to a business for a case interview was unplanned, as the researcher met the business owner informally and during an informal conversation the opportunity arose for a more formal interview. Most of the questions asked flowed from the immediate context – one question, once answered, led to another being formed. Informal conversational interviews are useful for exploring interesting topic/s for investigation and are typical of 'ongoing' participant observation fieldwork (Berry, 1999). In this case, it was an opportunity for gathering evidence for a second case narrative. As the circumstances arose purely by chance, there was no facility for taping the conversation, or making copious notes. However these were undertaken within an hour of the termination of the interview.

A limitation of this type of interview was on the observer's ability to witness all relevant aspects of the phenomenon in question (McCall and Simmons, 1969) since the location was not conducive to intense interviewing techniques. The distractions limited the ability to fully probe answers as well as fully witness non-verbal communications. Non-verbal language is of equal importance to verbal language (Gummesson, 2000). The nature of the interview could be considered immoral, commencing as it did in an informal meeting. As previously stated, research must have a clear moral framework, researching otherwise is manipulative and in bad faith (Birley and Moreland, 1998). Additionally, one of the main ethical issues in any research is that of having respect for persons involved (*ibid*, 1998). It is considered that the researcher gave sufficient opportunities to the interviewee to consider the nature of the 'interview' and no force or coerce was used. Considering the above points the researcher attempted to mitigate these negative effects. As such it is considered that the interview is relevant to this study. Confidentiality was discussed and the researcher confirmed that no reference would be made directly to the name or location of the business. The interviewee was willing to be interviewed and happy with the setting and the environment around him and it is considered had he not been he would not have discussed the issues at all.

Third Opportunity (Case study DB)

This was a fully considered and planned interview. The participant was chosen for his knowledge, both of the SME world and that of accounting. Decisions were taken prior to the interview, not to tape to allow for consistency throughout the five case interviews. Issues of confidentiality were again discussed and anonymity promised. Two interview sessions were planned with this participant, giving the researcher the opportunity to consider and compare any changes adopted between the interviews; considering them aligned to the questions asked during the first interview, and compared to the changes made after the interview with the first case participant. It also allowed the interviewer the opportunity to apply the test-retest method; asking 'same' question twice, or, as in these cases, repeating at later date (Birley and Moreland, 1998).

The third case is an example of the use of theoretical sampling, whereby the researcher identified a new case to study according to their potential to expand on or refine the concepts that have already been developed (Atkinson and Shaffir, 1998; Glaser and Strauss, 1967). The interviewee was chosen not only because he was well known to the interviewer whereby it was felt that answers would be full, open and honest, but also because of his background, both within the SME world and accounting academic. The personality of the scientist is a key research instrument (Gummesson, 2000) and although a personality cannot be altered from case to case, the rapport between interviewer and interviewee in this case was heightened and this was considered a benefit to the study.

Fourth and fifth Opportunities (Case Study's M and B)

These are being considered together since both proceedings occurred in a very similar way. Once the outcomes from the third case study respondent had been considered, especially the concept of change and how this could be compared with the change that occurred between the first and second interviews in the first case study, it was considered appropriate to select at least one further case study to further consider not only the uses of management accounting techniques to aid decision-making in SMEs but also to consider the potential demand effect or shock that had potentially caused change to occur in the business.

Like the third case study, both of these respondents were selected. The selection approach was similar, in that both were easily accessible to the researcher; however it was considered appropriate to consider alternate business types to aid the collection of data, adding to the richness of the overall findings. The approach was a direct, face-to-face discussion concerning the research being undertaken, the nature of the case study data collection, and a consideration of confidentiality and anonymity. Both respondents were known to the researcher; one on a personal basis, the other through workplace dealings. It was considered that neither relationship would detriment the interviews; in fact both relationships were considered to be an aid to data collection in that both potential respondents were at ease discussing matters with the researcher, and thus elements of trust, honesty and openness were already present.

Interviews with third (DB), fourth (M) and fifth (B) case study respondents

All interviews with these respondents were conducted on a similar basis, thus aiding comparisons made between the cases. Distractions were kept to a very minimum by the use of good planning and setting. Full note taking was made swiftly on conclusion of each interview. Each respondent was asked to read through the notes and later the case study to check for accuracy as well as considerations of confidentiality and anonymity. One possible limitation of the re-interviews (cases three and four) was the short amount of time that had elapsed between first and second interview, however it is felt that although some change had been seen with the third case participant, no additional changes would have been seen had the gap between interviews been longer. No change was seen between the gaps in case four and this was felt indicative of the fact that the accountant felt very confident in her systems and no changes would be seen even if the time elapsed between interviews had been longer.

Conclusions

Field research is undertaken because researchers want to know what the actors know, see what they see, and understand what they understand (Schwartz and Jacobs, 1979). Theories and models should be grounded in real-world observations rather than be governed by established theory (Glaser and Strauss, 1967). The case study approach can play a pivotal role in the testing or development and evolution of business theories (Buchanan et al., 1999). In this research, data had already been gathered from the empirical study, which had confirmed or refuted other prior research projects. The case narratives were highlighted as a suitable mechanism to further gain insight into the management accounting techniques utilised by SMEs, gathering data from a qualitative rather than quantitative perspective (empirical study). They gave the researcher the opportunity to explore in some depth issues emerging from the empirical study as well as offering a means of triangulating data. Unlike the empirical study, once a business had completed and returned the questionnaire, no further contact was initiated; with the case narratives, this was possible, and in some situations was utilised to gain further insight into the decision-making processes. Additionally, it was envisaged that clear note taking and analysis of narratives was imperative. Unlike the quantitative data forthcoming from the empirical study, qualitative data requires careful study, collating and interpretation. Thus a formal structure was instigated and when data was analysed, it was recorded using a pre-determined layout. This allowed for greater comparability from one case to another as well as with the empirical findings.

One main finding from the empirical study was that terminology was often not understood by SME owner/managers. In some areas, for example budgets and standard costing, at least two different questions asked for similar data, but results showed some variation.

Given that managers generally appeared not to adopt such academic prescriptions, as marginal costing, DCF evaluations and linear programming, Tomkins and Groves (1983) argued that researchers should use intensive case studies of management in action to discover why managers use particular forms accounting. The case interviews gave the researcher the opportunity to take some of these areas and further explore whether it was in fact a terminology difference/misunderstanding or certain techniques were in fact of limited use within the case business.

The initial analysis of these case narratives processes is an attempt to record, understand and interpret the actions of the participants in this study. There are some contradictory findings, which is often the case, particularly when researching SMEs as no two businesses or owner/managers and their actions, will be the same however the broader issues are of relevance. This doesn't render findings useless as the qualitative case researcher tries to preserve the multiple realities, the different and even contradictory views of what is happening because the uniqueness of individual cases and contexts is important to understanding (Stake, 1995). The following chapter contains narratives for each of the five businesses studied, which are then interpreted aligned to the empirical study, literature review and prior research within the interpretation chapter.

Chapter 7: CASE STUDY NARRATIVES

First case - Z

Introduction

The first opportunity that availed itself to the researcher was with a small business within the computer industry. The owner (to be known as Z) had approached the researcher on another, but not dissimilar matter. His business had grown so rapidly that he found himself unable to do everything and even though his wife worked with him, there were still not enough hours in the day. He found that it was his accounting systems that had been neglected. He had thus decided that he needed a part time bookkeeper to sort the finances out. His PAYE had not been settled for eight months and staff were only paid when they "nagged him." He had been given the researchers name from a friend. At this time the researcher did not consider the opportunity of using this business as a case study.

A bookkeeper was recommended and after a successful interview took up the position, with her first job to sort out the existing accounting system (a computerised system was in operation) and then to settle all outstanding accounts. After this time, the business owner and new bookkeeper would make a new agreement as to her hours and duties.

Gaining the interview

It was after the bookkeeper had been employed for a number of weeks that the researcher re-contacted Z. The main purpose was to check that the bookkeeper recommended was suitable and that the situation was somewhat resolved. However, as a secondary point, the researcher, now realising an opportunity had come her way, discussed her research and asked whether the business owner would be interested in talking to her sometime about his business and accounting systems. At first he was somewhat reticent. For one thing he couldn't see how his business could be used since he was so behind in his paperwork. Another was the fact that as he said *"I am a self taught person. Yes, I went to uni., but that was for a different type of course, even to my business and so what use is a self taught fumbler?"* On further explanation about the area for research, he said that he would consider it and asked the researcher to contact him later in the year.

The conversation was noted and a date diarised to re-contact on this matter.

The second telephone call on the subject was a lot easier and upon completion, an interview was diarised. The bookkeeper was making good progress and Z, feeling very happy about the situation, agreed to an interview. He did say that his time was very limited and that he couldn't switch the telephones off (this was always a problem even when on the telephone to him; if the second line rang he would always put the researcher on hold and deal with the other call). However, the researcher felt that since his business would make for a good initial study, it was worth any time invested in gaining access.

The first interview

On the due date the interviewer arrived in good time. It had been decided not to send any questions prior to the interview since in the businessman's own words, *"I am not really sure that I can even give you half an hour, but if that's ok with you and you can make some use of what I tell you in that time..."* Thus any questions sent prior to interview could, in the researcher opinion, only have served either to put the interviewee off the concept of an interview or they would have just lain unread and served no purpose.

The interviewee was extremely nervous. As he put it he would rather talk to the bank manager than the interviewer. This resulted in the first couple of minutes being utilised re-iterating the research projects aims and attempting to bring calm to the situation, for only when both interviewer and interviewee are comfortable can any meaningful dialogue take place. It was at this stage that the use of the tape recorded was discounted.

Although the interview was 'booked' for 30 minutes, it is hard to be exact as to how long the interview was, how much was 'interference' time and how long the owner was talking on the telephone. This was not an ideal situation but considering the nature of the research requiring owner/managers time, it was considered that this would be the norm. It was very important to ensure that, prior to asking any searching questions, the interviewee had calmed down and he fully understood that he would in no way be identifiable in any written materials (this was very important to him). Possibly more importantly, he understood that the researcher wasn't there to criticise but to explore what was going on. He was happy that whatever he was doing was fine, it was just that there may be alternate ways and the purpose of the research was not to tell him what to do, but to find out what he did. These points had already been explained to the interviewee over the telephone both prior to and after he had consented to become a subject for this research, but still needed to be re-iterated at the start of the interview. All of this took precious time, but without this input, it is considered that the interviewee would not have given full answers.

The second interview

The second interview took place some six weeks later. This was planned on a more unstructured basis since it was now considered that the interviewee would discuss issues more now barriers appeared to have fallen, although the researcher did want to ask a few direct questions in the pre-interview mode from the first interview. After the initial questions, the interviewer asked how everything was going with the business and had anything changed from their last meeting. At this point the interviewee really opened up. Although not the intention of the first interview, the business owner had been really interested with the subject and had considered how it could help his business. He proceeded to tell of text book purchases and new systems considered. This put a different focus on the second interview. From finding out more about the systems (or lack of) in place in the businesses at present, to considering what systems may be implemented in the future and even to why these systems are considered beneficial, since only if there is a benefit should any business consider implementing a new way of working.

In both interviews, a manual form of note taking was employed since the researcher considered a tape recorder might impinge any discussion. Again confidentiality, in all ways, was promised. Also the notes taken from the first meeting were given to the interviewee, who scanned them and confirmed their accuracy.

Findings – product costing

The owner of this business did have an idea of costing his product. He considered all products equal in respect of how much of the fixed costs should be attributed, although this was more implicit rather than explicit in his discussions. He also undertook a fairly rudimental analysis of how much a product cost to buy/produce and how much profit he could make on it. He stated that since there was high competition in some of his product lines and very little in others, he did employ an almost loss leader approach to those in the higher competitive marketplace, hoping that those sales would lead to sales in other, not so competitive and as such higher profitability, products. He continued by stating that if he was buying in a product, even if this then had to be modified slightly, he could easily identify costs. Most of his problems lay in those products he 'made from scratch' or the services he offered. (Unfortunately, without being able to offer any details about his product lines, it is hard to be specific. The fact that he has asked that no mention be made concerning them, in case someone could identify him from his products, has to be complied with.) Another comment made was that in the high competitive marketplace he tried to match competitors pricing, he adopted a bundling strategy for products going out of "season" and did acknowledge a factor of price skimming. None of the terminology was employed in the discussions and it could be argued that these could be seen as a marketing concepts and not management accounting techniques, even though they are recognised within management accounting learning.

Again, commenting on competition, Z has recently started to use E business since he realised that although the profit within this area for his business is, in his eyes, relatively small, he realised that it could have potential for other, later services or projects that may have better profit margins. However it appears that he has not checked whether this is a true premise or not – have customers who purchased products only in the past, come back for other, and more profitable services? *"I've never checked – although this should be relatively simple by just checking their file. I'll have a look at that next time I get chance."*

Where projects have to be modified, the costing of this is again fairly rudimental. The starting point is *"how much did the software cost, then at a rough estimation as to how long it'll take to modify it, and little bit of travel in time on top, profit margin of whenever I think I can get from that particular business, and there's the selling price quote."* Asked whether there are checks as to how long it takes him to undertake the modification to how much is estimated, he said, *"no, whenever completed, the job sheet just gets filed."* Asked whether he uses past quotes and job sheets to help him to give future quotes, he did state that yes he did use what he *remembered* of the previous job to help him construct new quotes for potential customers.

Findings – cash management

The researcher continued into the consideration of cash. Considering the costing techniques employed were rudimental she was wondering whether the cash budgeting was undertaking a on a similar basis. However it appears that Z employs quite a stringent cash budget procedure. *(Initial analysis, but see below.)* He was able to show cash budgets for the whole the business since prior to existence. *(Cash budgets were waved at the researcher – they had been on a corner of his desk – but she could not see them in any depth, nor was she permitted to hold them.)*

The monitoring of the cash budget was somewhat restricted to the fact that its bottom line was 'checked' with the closing bank balance each month. Z then stated that if the cash budgets and his bank accounts were so different he would investigate it further, however there was no real attempt made at re-adjusting the budget in light of any findings. *(It was also unclear to the researcher exactly how he performed this check since he had already admitted that his bill payment was lax, it could thus be implied that his cash budget would form no resemblance to his bank account.)* The business runs (sometimes) at an overdraft and this has been arranged with his bank who do require seeing evidence of the cash budgets and this is perhaps one of the reasons why he does undertake a cash budget. However, the bank doesn't make it a requirement that they keep a copy of the cash budget and it doesn't require Z to produce an analysis of cash budget to actual at the end of the year, *"they just require next year's cash budget to prove that I have at least thought about it."*

The cash budget employed was of a traditional format and asked about this he stated that's what the business adviser had given him *"- a layout which you then put into an Excel spreadsheet."* The spreadsheet was fairly advanced in the fact that it was using formula and as such if any 'what-if-ing' or any adjustments based on actual results were to be considered, they could have been undertaken relatively easily. However, it appears that neither the bank nor the business adviser had explained exactly why a cash budget was being constructed and the importance of monitoring it and amending it as time went by. It was thus concluded that although initial concepts had been that Z monitored cash flows, this was somewhat of a misconception.

Findings - investments

In respect of capital investments, he stated, *"If I really need it and the business can afford it, we buy it. If not, I do look at alternate ways of getting whatever it is, but to be honest it is all done on instinct."* He added that he hadn't really invested much into the business in the way of capital investments since setting up some three years ago. During the second interview he talked about moving premises. This hadn't been mentioned in the first interview and yet the business had been in the process of moving for a couple of months (i.e. before the first interview). Asked whether he considered this a capital investment (not the terminology employed) he said no. He discussed at length the reasons for the move. The fundamental reason was to expand the business further and employ more staff and possibly investigate different product lines. Another reason was that although the current premises were well located (in the eyes of the owner), parking *"was a nightmare"* and since all sales were either a case of sending them via the post, or going personally, *"I'm not in the business that people need to visit the office, or drop in to make a purchase"*, they did not really fit the need of the business, *"the address looked good when we set up, or so we thought, but actually when people are dealing with you through the internet, or over the telephone, I think I could be working out of my bathroom and it wouldn't make an iota of difference – heck the travel to work would be a lot easier that way!"* Asked about the choice of new premises, he said they were the first ones that came on the market, in about the right place, at the right price (rent). That and *"the view isn't bad either!"* and *"we have five parking spaces!"* This appears to be a new concept of investment appraisal, instead of payback or discounted cash-flow, but in line with the conclusions of Ekanem and Smallbone (2008).

Conclusion

The findings of this case could be seen to confirm some of the researchers initial hypothesis concerning the use of management accounting within a SME – it isn't considered a benefit. However, in this scenario, is could also be attributed to the concept that what you don't know about you can't use or even unconscious competence, not knowing about something (from a technical view) but using a 'form' of it. When discussing techniques employed, there were groundings of management accounting techniques used to aid decision-making, but since the owner had no pre-conceived ideas of how it could be done, most were a case of 'logic'. His business acumen rested in his product knowledge only and his concepts of managing budgets, paying his staff, *"well, they have to nag me to pay them sometimes"*, even completing tax returns, are very much to the back of his mind. He has taken business advice in the past, for example from the bank, when they issued him with cash flow forecast format, however it appears that this was possibly not fully explained at the time, he hasn't understood the importance, or he hasn't the time.

A consideration of the changes that occurred need to be explored: Were they attributable to 'shock' (Berry et al., 2006; Schroeder et al., 1986), with the case interviews being the catalyst for change? Acknowledgement must be made to the initial contact between the researcher and Z, whereby he had made a chosen change in the way his business was running by considering the employment of a bookkeeper. Therefore, the 'shock' may have not been then research project, but an earlier occurrence. Additionally, changes occurring between the case study interviews could have been as a result of the questions asked, or could have been due to the 'new' influence of the bookkeeper recently employed to analyse and construct systems and procedures for the business.

Second case – G

Introduction

The second opportunity for an insight into how a small business uses management accounting within its day-to-day running and long-term decision-making occurred in a very informal setting. The researcher and new sales director / managing director of the business were both designated drivers at a business function. Initially the researcher introduced herself and a polite conversation had started. The normal pleasantries had been exchanged and gradually the conversation turned to the researcher's background.

The sales director / managing director (from here on referred to as SD) was very interested in the fact that she taught accounting, his background being in sales, with no business or accounting education at all. The conversation moved onto courses available at colleges for owners and directors of SMEs and eventually moved into the researcher's area of interest. Although this was not the ideal situation, as the opportunity had arisen and SD appeared willing, the researcher asked whether she could ask him some questions either now or at a future date, as part of her research. Initially, SD inferred he would rather not talk about the work place especially since the researcher did not work for the business yet had connections and he felt that it may be a conflict of interests. He also said that he felt it wouldn't be possible to have an interview at a later date since his calendar was extremely full. But he did insinuate that if questions were asked he would answer them to a certain extent and as such an informal interview was technically initiated. As previously elicited within the previous chapter, the ethics of this interview have been very seriously considered, including discussions with supervisors and it has been considered there are no justifiable reasons why the case narrative cannot be utilised.

No formal notes were taken at the time and the interviewer did not have access to her research questions, however as soon as she returned home notes were made and the following week more formal notes were compiled.

The business

The business was formed over 40 years ago and is still in its original buildings. Around 40 people were normally employed in the business until around 2002 when the company started to experience some financial difficulties and as such redundancies and none replacement of staff after retirement decreased the staff base to around 30. The business is within the printing industry, with some very large contracts, some direct with multinational companies, others via agencies. Some businesses do approach the company for one-off requirements, with some of these quotes turning into longer term contracts others remaining one-offs. SD had only recently joined the company, initially as a sales director with the idea that he would be buying into the company since one of the current owners would be retiring in the not-too-distant future. The researcher felt that she could not ask about his share in the business or any other financial details concerning this area.

Findings – job costing

With regard to the pricing of the projects, SD stated the business tended to overcharge when compared to its competitors (one of which it actually owned, but has since closed down). However with the financial problems the company has lowered its prices, bringing them more in line with competitors, although it does appear that sometimes jobs are still cherry-picked. Each job is quoted and it appears as if there is a formal system of checking quotes to actual since each job will have a job sheet, attached to the job at the onset and detached when the job is completed and packaged for delivery. Both the quoted figures and actual time spent / materials used etc. are then put together and the job sheet is then analysed. Any large variations are checked. The intention being that this information is used in new quotes. However SD was aware that the staff on the shop floor didn't probably appreciate why the job sheet was important and as such he felt that sometimes the figures were somewhat made up and this was something that he had considered looking into, although to date nothing had been done about the situation.

When asked about adding to quotes the overheads of the business, SD was unsure as to how this occurred. He did say that he knew that there was set profit percentage that was added to quotes and he presumed that the overheads were part of this percentage or there was a similar arrangement for adding overheads to the quotes. All quotations are handled by one person within the administration offices. Although he was unclear as to her background and did say that she seems to be competent in producing quotes that were of a comparable value to the actual output.

Findings – cash management

Since the company had and are still experiencing financial difficulties and the researcher has a close interest via her connection with the business, she felt as such she could not ask about the cash management of the business. However she got the general feeling that formal paperwork was fairly high on the agenda of the business and that forecasts to actual of the cash or profit figures were fairly regularly discussed amongst management. The business has a full-time accountant (not the same person who does the job quotes), uses a computerised accounting package and there are regular management meetings where finance is fairly high on the agenda. It is not envisaged that the researcher will be able to get any further information into this area due to its sensitive nature.

Findings – investments

Another area of interest for the researcher was that of the investments, although this does seem a little bit contrite in view of the fact that the business has got financial troubles. However she did understand that both new equipment and a new (replacement) vehicle had recently been purchased. When asked about equipment, which was in fact purchased around the same time SD arrived at the company, he told the researcher that this had been purchased with a view to expanding the business in a slightly different area. She was also informed that a lot of the darkroom equipment and computer equipment in respect of imagery had also been updated, again with a concept of expanding and modernising the business. The vehicle was a delivery vehicle that had been purchased due to the fact that the old one's engine had blown up! The old vehicle had been due to be replaced for over a year but with the company's financial problems this had not been possible however the amount spent on repairing the vehicle probably outweighed any finance arrangements that would have been required to replace it at an earlier date. It is thus implied that no capital investment appraisal system had been applied to this asset either when it was due for replacement or when it was finally replaced since this was done very quickly.

When asked about his own investment appraisal, SD did say that he had done a lot of research before putting his money into the business. He felt that even though the business had financial problems it could be turned around (this felt a genuine comment and not a 'marketing' one) and he implied much of his research was from looking at previous accounts of the business along with his business plan and his own knowledge of the industry. SD has been within the printing industry for a number of years and has built up a lot of contracts, when he left his previous business he brought his contacts and some of his customers with him. He felt that the name of the business was good within the industry, the accounts although rocky had prospects and as such it was a good, although somewhat risky, investment. Asked about when he thought he may be paid back, he laughed and said *"maybe the day I retire."* Although he went into no more detail about his investments decision, it was felt by the researcher that he had done a lot of work looking into the background of the business and, even without knowing more about his investment decision or how much he had paid to gain directorship and part ownership of the business, it was felt that he would not have made any reckless decision with his own money.

The interview was terminated with the arrival of two cups of coffee and mince pies. The researcher felt she had sufficient information at this stage and had also got the confirmation of SD that this could be used within her research findings although no direct mention could be made of the company name or its location. She did later contact SD and asked if she could discuss certain aspects again, but SD said that he didn't have the time, although he re-iterated that she could use information from the informal interview and nothing had changed.

Conclusion

Although this business has been and probably still is in a 'not too great' financial position, it does appear that management accounting is used on a reasonably formal basis within the business throughout a number of difference decision-making processes. It appears that this will also continue for some years to come, as long as a business survives. The structure of the business is such that formal management accounting is possible and practical and the size of the employee base means that a member of staff, rather than an owner/manager, can be employed to undertake such a role.

Third case - DB

"But you know how to do it, yet choose not to?" A mere five minutes into the interview with the third owner of a small business revealed very interesting information.

Introduction

The third participant was chosen because of the interviewer's very long association with this person. Although he is the owner of several enterprises, he is also an accounting academic and a qualified member of the Association of Accounting Technicians. His enterprises range in size and industry from micro through franchise to medium sized businesses. For the purpose of this case, he is to be known as DB.

The tape recorder was again not used. However this time it was the interviewer's choice. Both previous case study participants had not been interviewed with the tape recorder being present, the first because they had, the second due to the situation. It was felt that to have some consistency in techniques; the tape recorder should not be used. Full notes were taken during the interview, as in the first case study. These were immediately written up after the interview.

Findings - product pricing

Early on in the interview it was decided to focus on one enterprise, yet he did say that they all run on pretty much the same basis. DB informed the interviewer that he does undertake job costing for the outside catering jobs, which includes break even analysis; however when asked how he produced such documentation, he asked what documents (and laughed). It appears that almost everything is done in his head. This is when the conversation moved to the sweet shop. Yes, he knows each of the prices of each product that goes into each item, even down to how long they take to produce a batch in labour hours and cooking time, yet all of this information is kept in his head. This extended to the price of the packaging and an understanding of which container to put which product in for maximum return. When the price of a raw material goes up, or down, he adjusts the price to customer only when his *"profit margin is squashed too small."* Comparisons with competitors is keenly undertaken, although he maintained that since *"my product is made using the finest raw materials, I can charge a slightly higher price."*

DB also uses a loss leader approach within the business, although he did say he had never really thought of it that way. Some of the products are seen as 'stable' requirements. With these he thinks that the profit margins are relatively small. However, these are the products that bring in the regular trade, so although he knows that he could perhaps charge more for them, and in fact probably should, he doesn't increase the price and hasn't done so in over eight years. Asked if he really thought they were loss leaders, whether they were making any or no profit at all, he did look a little worried and said he thought they were still just making a profit. However, when people came into the shop for these items, they usually added the other items, some fairly basic and others luxury goods, which carry higher mark ups, he thinks. Most of the conversation was based on, *"I think"* and it was interesting as the interview progressed the *"I think"* became shakier, by the end of the interview DB was considering drawing up some spreadsheets to input the data to check on the facts. The interviewer had already considered arranging a further meeting at a later date so that a comparison with the first case could be undertaken; however this was now more of a necessity in light of how the interview was progressing.

DB had several different strategies towards production. Some products were made on a bulk basis and then safely stored until required. These were goods that had a long shelf life. By producing in bulk, economies of scale were introduced. Likewise, when products had a short shelf life, these were made in much smaller quantities. This way *"I won't loose as much profit if I have to throw them away if they go past their sell-by date."* Much of the costing used within the business stems from profit maximisation and DB admitted as much when discussing investment appraisal.

Findings - investments

The shop needs new lino, or the lino needs patch repairing. Once again, the appraisal of this is being done in DB's head. His overview of the situation was:

To patch the lino means trying to do it overnight one night, with no shop closure. To replace the lino will take at least four days, meaning shutting the shop for four days and loosing the takings, yet still paying the staff. Patching is short term. However, to close down for four days makes the price of the lino very expensive. Then there is when to do it. Certain times of the year are quieter than others, thus the profit lost at those times is less.

Asked about undertaking a formal appraisal, DB said that (the above) was the sum of his consideration. Who could do each job, how much it would cost to do the job and how much he would loose from closing the shop.

Other long-term investments had been undertaken in a fairly similar fashion, for example the purchase of a 'long open fridge' rather than using the walk in fridge. This had been purchased because whilst in the shop, DB had noticed that staff often left the door open to the walk in fridge, thus letting in warm air, thus making the fridge less cost effective. The result, the purchase of a counter fridge that was loaded in the morning and apart from items running out and having to be restocked, the walk in fridge door remained closed for most of the day, hence, a saving. Did he do any investment appraisal? *"No, it was obviously worth buying the fridge because over time it will pay for itself. Not only in electric bills, but now all of the products are on display and so people can see other things that they may wish to buy. Increase the sales, increase profit."*

A final decision that is currently being considered is whether to increase the number of chairs and tables in the shop: Currently there are twelve seats. If this is expanded it will mean an increased capacity for sales, however it will also mean that a washroom will have to be installed, due to health and safety regulations. DB admitted that this had added to the lino problem. Often during the day there was no room for people to sit and eat. This, he presumed, meant that they didn't come into the shop. Any increase in the capacity he believed could increase sales. However, he would have to install a washroom due to health and safety and possibly hire another member of staff to clean tables. The ideal time to do this would be when the lino was installed.

Asked again about how he would cost this out, he replied *"I've sat down with this problem and tried to calculate how much it would cost and considered how much trade it could bring in. I have considered how long it would take to break even but really don't think this is the true consideration. Really, I have to decide whether the shop needs the hassle or not."* The interviewer asked whether he had considered the financing aspects of the proposal and he replied that he could get the funding, but hadn't really thought about the cost of finance, and *"no! And before you ask, I haven't used NPV."*

Conclusion

The interview concluded at this point. The notes taken were typed up straight away and the conclusions drawn. This interview has added a new dimension on the research. This is a person who is very familiar with management accounting yet doesn't use it in its 'classroom' form. He has the ability to calculate job costing, break-even, even technical capital investment appraisal methods. Yet he chooses to 'do it in his head'. He admitted that in retrospect, he could do a *"wonderful spreadsheet with all the figures on, and just amend next time I go down to the warehouse"* but added that this would probably make no real difference to the way he did things now. He felt that over the years he had built up such knowledge of the industry he didn't need to put it down on paper to know what to do, *"it's like a feeling; if a price goes up I know when to put my prices up. I know when the margin of safety is being breached."*

When considering his investments into the business, he plainly stated, *"whatever the business needs, I will do it, as long as it is going to add profit, or because of something like health and safety. How it is done? Well that's a matter of the price being right at the time."* A type of 'transcendental payback' being the best way to describe the process: Beyond the normal perceptions of payback in an abstract, out of the ordinary way.

Re-interview

A second interview was held with DB just a month after the first. The interviewer wondered how much of an influence she may have been, especially in light of the first case study participants business. In the case of DB, very little had changed.

The lino situation, along with the increase in seating in the business was still not resolved. He had received some quotes with regard to the jobs but still hadn't decided what to do. He hadn't put anything down on paper, yet when asked about the cost of the jobs, he went through a lot of facts and figures, all from 'his head'.

Product pricing hadn't changed, but he had decided to do his *"wonderful spreadsheet"* although he did add that he wasn't really sure how long it would last. His 'figures in his head' were almost in line with every figure produced from the spreadsheet. He hadn't changed any price charged to the customer, although he had spoken 'sternly' to the staff about giving out thermo cups to customers for water, as well as now using the thermo cups to put sauces in rather than small metal containers, *"because the profit margin goes up that way."*

Conclusion

The re-interview with DB was as revealing as the first. Although it appeared that the business was being run effectively and profitably, there was no real evidence (apart from the historical accounts) since management accounting was 'in his head'. In light of the *"wonderful spreadsheet"* produced after the first interview, it appears that the owner of a business can have a very detailed knowledge of his business without putting it down on paper and without making computations. It could have been entirely possible for DB to have said that he got it right and not, or only partially, but during the first interview he went through different cost structures with the interviewer, who noted them at the time. When viewing the spreadsheet, the interviewer looked for these items and all were almost to the penny. Whether this is because of the type of person DB is, his background, his cognitive skills and abilities, cannot be concluded upon. When compared with the first case study participant, they are completely different people, with entirely different attitudes to their business as well as different business acumen. This could be seen as the entrepreneur factor and as such would be a suggestion for further, future research.

Fourth case - M

Introduction

The fourth participant was chosen because of the interviewer's association with this person. 'M' has a good understanding of both financial and management accounting techniques, being a student on an AAT course. She is the full time accountant of a well established manufacturing company who operate in a medium-competitive market. Both interviewer and interviewee had received consent from the owner/manager that the interviews could take place, the owner/manager leaving it to the interviewee's discretion as to the extent of business knowledge offered up as evidence. The owner/manager is also known to the interviewer from previous dealings.

It was considered inappropriate to tape this interview for consistency. Full notes were taken during the interview, which were written up immediately after the interview. These were later given to the respondent to check for accuracy and consistency. Confidentiality was discussed both prior to the interview and during. Trust had already been established with this respondent.

Findings - product pricing

This organisation presented the most data concerning their systems. The company operate a full costing system, evidenced during the interview. There was evidence of apportionment and allocation of expenses as well as analysed materials and labour data. Profit maximisation is their highest priority and the owner/manager has led the business towards the systems he sees best to implement his strategies. He is fully aware that, in a reasonably competitive market, his prices have to kept competitive and he uses management accounting data to help him cut his costs to keep his prices in line, if not just slightly lower than his main competitors.

The business is constantly considering new products and as such a full proposal with costing including break even analysis is constructed. This is accompanied with marketing surveys undertaken by an outside business. Only then will the business owner look at making a decision as to whether to take up the patent to start producing the item. A similar approach is adopted when considering discontinuing a product, although M did say that there are certain loss making items still being produced, some of these had been identified as loss leaders, others were 'favourites' of the owner.

Team management meetings are held, with the production manager, accountant, sales manager and owner. From evidence produced it appears that although these are sometimes heated exchanges, most are highly productive meetings with management accounting data being considered alongside marketing, sales and 'local knowledge' data before any decisions are made. The owner has the ultimate say in any decisions but does appear to take notice of the workforces knowledge and understanding; in one meeting it is recorded he said *"At the end of the day this is my business, but I know it is far bigger than the one I started and I have to bow to your knowledge and understanding of your particular areas – I would be daft not to, I employed you for it. I may be good at what I do, but so are you."*

Findings – cash budgeting

The use of a full accounting system is evidenced again within the cash management of the business. This could perhaps be linked to the businesses requirement of an overdraft for much of the year, although it is considered that the accounting systems employed within the product costing for example, lead the interviewer to believe that even without the financial requirements, the owner would insist of being fully aware of his cash position, although this requirement has not always been so. For a number of years the owner managed the business including the accounting himself and only after running into some financial difficulties did he consider the use of a bookkeeper to at least keep records up to date. As the business continued to expand, the use of a fully computerised system has been adopted.

The business has a five year strategy. Aligned to this a yearly master budget is constructed, including a cash budget and forecast trading, profit and loss and balance sheet. The forecast to actual is analysed on a monthly basis and is an agenda item on the management meetings, also held monthly. There is evidence to show that where actual varies significantly, amendments to budget are made, as well as a full discussion as to why this has occurred. One main reason of recent variations has been the fuel prices and how these have affected the business; from delivery of raw materials to the delivery of finish goods; the higher price of raw materials; increase heating bills; and the staff request of higher wages to cover their own personal expenditure increases.

In addition to the management meetings, the owner has regular meetings with the bank manager to discuss the financial position of the business. The accountant knows little about these meetings, except she is aware of a continuing support and at present can see no change. When asked about any support the bank manager may be offering as additionality to the lending facilities, she is not aware he has ever offered any additional support. Moreover she feels that sometimes he asks for forms to be completed which are nonsense. *"We fill in a form that shows our sales through to operating profit, but it ignores the fact that we are a manufacturing business; it asks for a purchases figure – you know, purchases* *of goods for reselling. The boss told him we don't really operate that way, but the [*bank*] manager said just put in the cost of finished goods figure. Then he says the expenses are too low – well of course they are, most are included in the cost of finished goods figure. I really don't think he* [bank manager] *is on the same planet at times!"*

Findings – investments

The business operates from the same premises as when it started. The owner apparently had been offered a 'good deal' on the land/buildings and even though it was too large for him at that time, decided to buy it. Since that time the business has expanded but apart from additional machinery, no large expenditure has been required.

Just over a year ago a new product had been bought to the owners notice and he undertook a full analysis of whether to start manufacturing it. This started with an identification of the machinery required, job training, market, and continued through the raw materials, labour and overheads to a break even analysis. Since the machinery would require a loan to finance it, DCF and payback had been undertaken. This also took alternative methods of acquisition into consideration. It was only when all of the data had been gathered and analysed by the whole management team that a meeting was held to discuss the product. It is interesting to note that, although the figures indicated that the product could be a profit maker, the owner relied on his 'gut feeling' and decided not to launch the new product. He has since been proven right, since even though initially the product, launched by a competitor of the firm, proved highly successful, technology has meant that it has been very short lived and as such the market is already in decline, whereas the initial projections were that it would have at least a five year shelf life (and all calculations were based on this premise).

Conclusion

Although two interviews were held with this respondent, no change was seen between the two. This is probably because the systems in place are fit for purpose, and even though long discussions took place during the first interview concerning the nature and processes of the management accounting techniques being employed, the accountant had confidence in her systems.

This is a very well run business. The use of management accounting to help decision-making was well documented and indicated the acknowledgement the owner had made to its benefits. Even so, on the one decision detailed, the owner had ignored the data as presented and relied on his business acumen to help his decision. This could lead to a conclusion that management accounting is only one tool within the business owner/managers tool box to help make decisions. The entrepreneurial spirit of the owner/manager in this case over-ruling the other data presented. This case also highlights a division between a business owners knowledge, that of his product, with the knowledge of the accounting world and the techniques it can offer up in support of decisions. By employing a bookkeeper or accountant, whether it is because of occurrences such as financial problems or expanding business, the owner allows himself more freedom to concentrate on the product side of his business; which is usually his greatest asset.

Fifth case - B

Introduction

Like the fourth participant, the fifth was chosen because of the interviewer's very long association with this person. 'B' has a very good understanding of both financial and management accounting techniques, and is a director and the bookkeeper of a building firm. She holds higher qualifications with accounting as a subject studied. She maintains her own Continuous Professional Development by attending the local college as well as undertaking professional reading (accountancy journals).

Since all previous interviews had not been taped, it was considered inappropriate to tape this interview. Full notes were taken during the interview which were written up immediately after the interview. These were later given to the respondent to check for accuracy and consistency. Confidentiality was discussed both prior to the interview and during. Trust had already been established with this respondent.

Findings - product pricing

Although employed as the bookkeeper, it is not within B's role to draft quotes. This is left entirely to the owner/manager who, like the third case study respondent, appears to hold a lot of the information in his head. She stated that even though she has asked him in the past to write down quotes, especially when he is doing the drawings to go with the job, he declines and is more than happy to go to see a potential client with the drawing and the price calculated without reference to any pricing guide. However, it appears that when these jobs are undertaken, an analysis is undertaken to compare the price paid for the job with how much it has actually cost – each job having its own set of accounts. This analysis showing that the true costs are almost always in line with the job quote/price paid. The job accounts contain elements to allocate and apportion overheads (which by the nature of the business are limited, for example since the business doesn't hold premises, items such as rent and rates are not required), for example insurance and accountancy fees and these are also covered within the quote.

It appears that like case three (DB), the knowledge of the owner is so high that he is able to consider a potential job and almost on the spot make a fairly accurate quote. From further statements made by B it is also evident that within the quotation system there is some leeway for the haggling process, again another indication of the business acumen/knowledge of the owner.

Although variance analysis is undertaken, it appears to be a formality rather than a necessity. The owner is aware of changing prices (raw materials) on an almost daily basis since he buys and collects the requirements for each job. Since he has been in business for a number of years, his experience tells him how long a particular job will take; how many workers and of what type and experience are required for each particular quote. He also has a great number of contacts in differing areas to supply not only the labour but also materials.

Findings – cash budgeting

This is a very healthy business which has a good cash flow. Although each job has to be paid for by the business before the customer pays, stage payments are a norm and since the owner has not taken all profits out of the business, it has accumulated a healthy position. In some ways this diminishes the requirement of formal cash flow forecasts, but the bookkeeper maintains a forecast/actual on a monthly basis. She uses a bank reconciliation to monitor process and if there has been a time delay between expenses and income not foreseen, she will amend future forecasts in line. Asked why, B stated that this was probably her main control on the business and by undertaking a formal reconciliation each month, comparing the forecast to the actual, including the bank statement reconciliation, she could keep proper control over the finances. She also indicated that this was often the first time she had seen some of the 'incidental' expenditure made by the owner, and without undertaking the analysis it would be some time before she could ask him about different expenses, and by that time chances were that he would have forgotten which job it should be allocated to.

Findings – investments

As previously stated, fixed assets within this business are very limited, the company vehicle being the most expensive item. However, the consideration of whether to hire, lease or buy certain pieces of equipment has been previously made. With large jobs, the owner/manager often requires certain pieces of equipment, such as diggers and scaffolding. With each new job he considers the requirements and aligns this with the cost of hire, buy for cash or lease. Apart from 'small' machinery, such as cement mixers, he has considered it a cost/benefit to hire these; factors being taken into consideration including not just the cost to buy against hire, but also insurance, maintenance and storage. Where equipment has been purchased, often this is seen as a one off payment and the equipment is sold or scrapped at the end of the job. This receipt is also taken into consideration when the initial calculations are made. Asked about the processes, it appears to be a rudimental cost versus benefit table aligned with a payback philosophy. Neither time nor value of money is taken into consideration when this costing is constructed however when this was discussed with B she acknowledged that if the business considered very high value purchases, for example an investment in land, a more formal DCF approach would be considered appropriate. It is thus considered that the approach taken at present is due to the fact that the time factor of owning equipment is relatively short and that there is a good cash flow in this business thus requiring little if any lending required for any purchases and due to the nature of the business, most equipment purchased was included in the job costing and thus transferred to the client.

Conclusion

The profitability of this business, along with the control the business owner appears to have, indicated this is a well run business. The accounting practices appear rudimentary, with much of the planning processes taking place on an ad hoc, 'in the owners head' basis.

However, it appears that even though the owner/manager is 'untrained' in aspects of accounting, even with the support of a fully trained bookkeeper, who could ultimately guide him in these processes, decisions made are rational and based on a financial calculation, albeit rudimental. The owner/manager within this business is on a par with the third case respondent (DB), whereby they have a high understanding of their business and apply that knowledge to their decision-making processes. The role of the bookkeeper appears to support the decision-making, but only as far as the owner/manager will allow it. A fully computerised accounting system is maintained, with the pivotal feature being the bank reconciliation process. This often triggers receipts and invoices being given to the bookkeeper to complete the accounting procedures.

Unlike the third and fourth case narratives, it was felt there would be no change within this organisation from this one interview to a second. The second interview was thus not requested, although it was felt that had it, it would have been granted. B was asked to read over the transcript of this case study and she agrees with the findings. She also confirms that as far as she is concerned, there is no real need to change; moreover the owner/manager would not change his ways due to this case study, she has been trying for years and feels that he is so set in his ways that even potential financial ruin would not change him, although that seems very unlikely given the financial standing of this firm.

Conclusion of case narratives

The analysis of the case narratives suggest SME entrepreneurs develop competencies for doing business through experiential learning, findings consistent with (Grant et al., 2001). This study has validated prior research through the use of the secondary interviews, showing how one owner/manager made a concerted effort to improve his decision-making by building on his existing competencies and by actively develop his knowledge. Even with the third case study, an experienced owner/manager, change was seen in his attitude to using management accounting to help in decision-making processes. However, the degree of change between each case serves as a reminder of the individual differences in learning processes as extolled by the humanist school of thought.

Although all five cases indicated some use of management accounting techniques in the day to day running of the business, there was little evidence of it being employed in long-term planning. This was also evidenced in the work of Zaman and Geno (2000), who found that although there were high levels of use of best financial and cost accounting practice, there was not much evidence of strategic planning in Central Queensland SMEs.

The results of the case narratives also show some correlation between the types of techniques being employed within SMEs to the nature of the techniques itself, more specifically its history. Techniques used within the early costing timeline, within the new businesses of the Industrial Revolution are evidenced within the decision-making processes of SME businesses today. However, those techniques introduced by academics and theorists do not appear to have much importance to the SME owner/manager in his decision-making process. However, this could be an indication of influences on the usage rather than owner/managers considered choice. For example, the concept of 'logic' led calculations being utilised within a business. Even if these can be aligned to management accounting techniques, it does not necessarily lead to the conclusion that they are a true indication of techniques being utilised. Additionally, if an owner/manager does not know about a specific technique, they cannot utilise it. This is not a conscious decision, although again, it could be argued that by not undertaking some form of accounting education, whether through courses or textbook self-study, a conscious decision has been made not to investigate whether techniques are available to help in their decision making. Further, it could be considered a conscious choice when an owner/manager employs an expert, either within the business or external and then does not fully utilise their services, or discounts their suggestions. Likewise, when a technique has been undertaken, whether a recognised one or one designed by the owner/manager themselves, and a result indicates a certain course of action, intuition, again whether conscious or not, may over-ride the 'result'. All of these have been evidenced through the case narratives and require consideration, interpretation and conclusions drawn, wherever possible.

Chapter 8: INTERPRETATION

Introduction

This section will interpret and analyse the developing themes from the responses to the questionnaire study and case narratives. Referring to the relevant literature from Chapter Two, the new understanding gained from the fieldwork will be analysed critically in the light of existing knowledge. This exploration and analysis will consider insights gained into the decision-making processes whereby management accounting is or could be used as an aid within SMEs. This may lead to a reinforcing of existing positions or to a diversification of pre-existing knowledge and understandings. New understandings will be acknowledged and considered in relation to existing concepts.

The concern of this study is with management accounting and, specifically, with how this is used by owner/managers of SMEs within their decision-making processes. Chapter one introduced the purpose, aim and context of this research providing a rationale for the research, an introduction to its context, and an overview of the principal themes of the study. This interpretative chapter will consider findings in line with these initial concepts, aligning these to existing concepts and conventions as well as in relation to the conceptual frameworks.

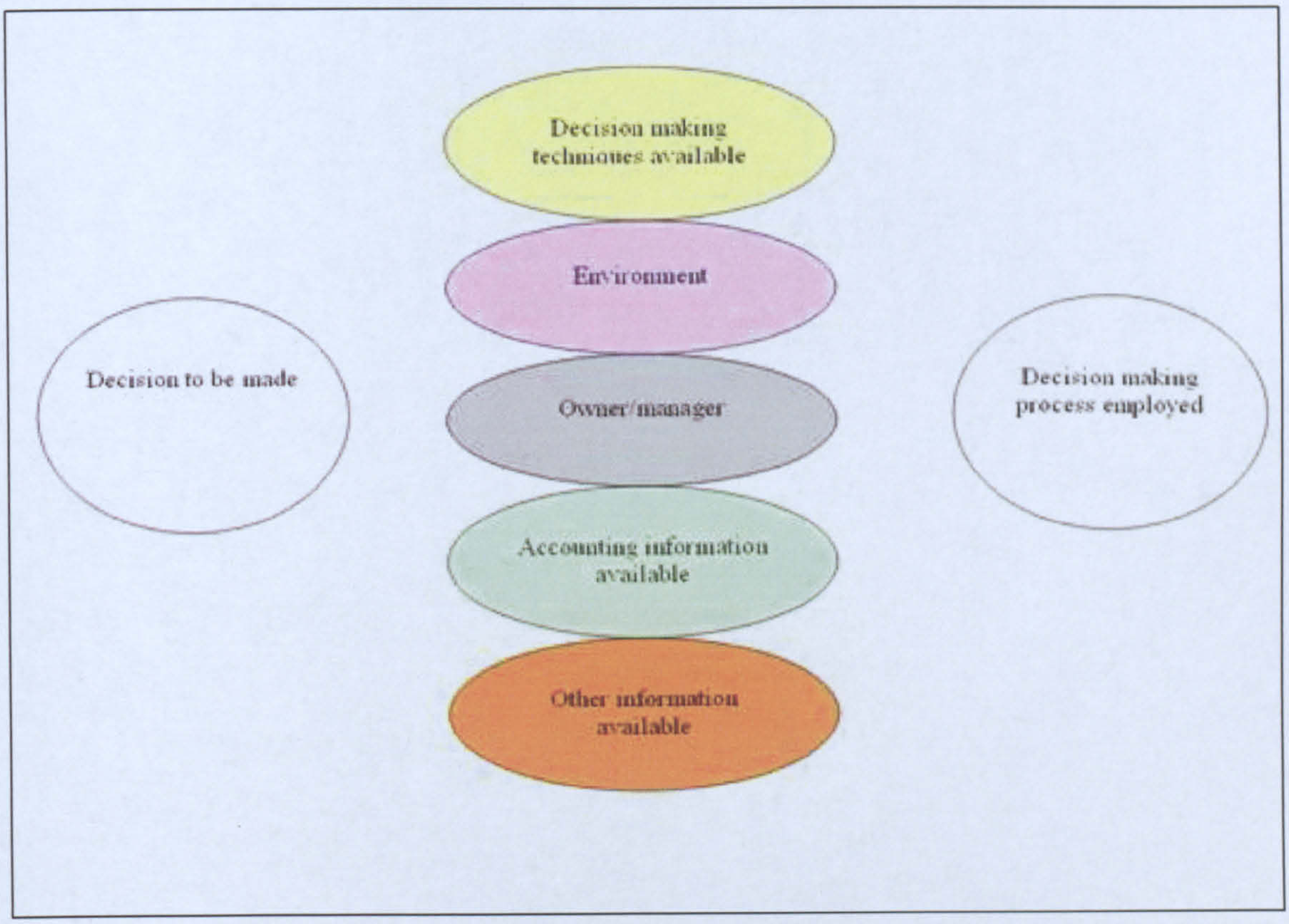
The intended area of this research is to consider "The use of management accounting techniques in small and medium size enterprise decision-making" with the fundamental question considering the role of management accounting techniques within small and medium sized firms in the decision-making process. Amalgam with this was the premise that if the owners and managers of SMEs had access to both the financial information, along with the right techniques, they could make 'stronger' decisions. This research aim led to four focused questions which are re-stated here, since each will be addressed specifically within this chapter.

Firstly, what are the main (financial) decision-making processes adopted by SMEs, with an additional consideration of who would be the main decision-maker?
Secondly, what management accounting technique would be considered relevant to this decision, with an emphasis on the background of that technique?

The third question conjoins the first two. Does the historical background of a management accounting technique have an influence on its use within the decision-making processes or an SME owner/manager?

Finally, is it possible to develop a useful framework to understand and encapsulate the usage of differing management accounting techniques of SME owner/managers?

Figure 10: SME decision processes



(Source: Authors own)

From the literature review and prior understanding, broad yet significant and related areas of interest were identified. These initial concepts considered the journey of a decision (Fig. 10) within an SME and led to the identification of interpretative themes. These themes were considered in further depth, both through the literature review and via the research carried out as part of this study. Frameworks considering each were then developed which will be further interpreted within this chapter. This analysis will be achieved by means of an 'interrogation' of the case study narratives, along with a consideration of the findings from the questionnaire study. Each theme will be explored and developed in turn, drawing selectively on research material, comparing contrasting and interpreting the various case narratives and questionnaire responses in relation to similarities and differences in the relevant literature and prior research in relevant past studies. Sub-themes have been introduced within this analysis to explore pertinent factors which have emerged from the study.

Decision-making processes in SMEs

This research was not intending to conclude on how decisions are made within SMEs, but how management accounting data is utilised to optimise the process. As such, conclusions are drawn from this premise. Decision-makers generally are not looking for the best or optimal, but for a satisficing solution of a decision task (Simon, 1976); management accounting is one such solution to the decision task. In general, the decision-making process in small businesses will be less formal and more personalised than in larger ventures, based on a rational approach whereby objectives are set, alternatives are investigated and economic evaluations are made of alternatives (Bridge et al., 2003). This was evidenced throughout the research, especially when considering the case narratives, for example in four of the cases (cases G, DB, M, and B) there was evidence of investment appraisal techniques being employed within decision-making processes. With findings from the empirical study, it is harder to conclude that even though documents were constructed, they are used in decision-making. 90% of those surveyed constructed cash flow forecasts; is found that 88% of the respondents businesses make use of the financial data, although again, what their definition of 'use' is cannot be deduced from the empirical study results. To further exasperate analysis, entrepreneurs are often believed to have specific characteristics that influence the decision-making process and are distinct from other people (Brouthers et al., 1998), e.g. case M's investment decisions. Entrepreneurs are decisive, impatient, action oriented individuals who are less comprehensive in their decision-making activities than managers from larger firms (Gibcus et al., 2005). This was clearly evidenced throughout the case narrative with DB whose decision-making appears based on intuition and in the fifth case (M), where even when employing an accountant, the owner/manager undertook 'in your head' quotes.

Relative size of the firm has also been found to influence the formal planning activity of any businesses, whereby formal planning is rather limited in most small firms (Bergstrom and Lumsden, 1993). Often this is due to the limited number of people working with a

SME, which could just be an owner him/her-self, with the first case study evidencing this premise. A consideration of who makes the decision is thus required.

The decision-maker

Planning and decision-making in a small business are likely to be highly influenced by an owner/manager (Bridge et al., 2003), who is in most cases the only decision-maker, including financial decisions (Deakins et al., 2001). The owner/manager, who may or may not be considered an entrepreneur, is thus a key figure in small business operations (Filion, 1991; Gélinas and Bigras, 2004; Winston and Heiko, 1990). The factor of 'being an entrepreneur' needs also to be considered; entrepreneurs are often believed to have specific characteristics that influence the decision-making process (Brouthers et al., 1998; Gibcus et al., 2005; Mador, 2000) and are distinct from others, including 'owner/managers'. Not only is there a difference between an owner who could be classed as an entrepreneur and one who isn't, SME businesses themselves do not behave like a homogenous group (Julien and Marchesnay, 1988). Personal characteristics of the owner/manager have a high impact on the set up of the decision-making processes, including the management accounting techniques employed (Flacke and Segbers, 2005).

A question related to who (in general) makes decisions was not included within the final version of the empirical study since this was considered too broad a subject and potentially intrusive, especially when considered in line with their educational background. It was envisaged that since these were SMEs, the close working relationship between the owner/manager and her/his business would mean that all decisions were ultimately made by the owner/manager. A question relating to the setting of prices was asked and it was recorded that 74% of the businesses owner/managers set their own prices. It should also be noted that 10% of those firms surveyed had no control over pricing, with prices set externally. The remaining 16% firms all employed an internal bookkeeper, whose duties include the setting of prices. This is in line with findings of case narratives where the SME employs a bookkeeper; certain financial decisions are thus delegated to them. Of those who employed management accounting techniques (case narratives and empirical study) all employed a full time bookkeeper/accountant, appearing to employ more sophisticated management accounting techniques to aid decision-making. Which is in line with Davila and Foster (2004) findings, whereby the presence of a manager with specific knowledge about accounting systems may enhance the perceived benefits of adoption of management accounting routines to aid decision-making.

However, the owner could clearly be seen as a controlling factor, for example, the decision M 'overturned.' In this instance the financial data was ignored in favour of a more intuitive decision by the owner/manager. Likewise, in B, the owner kept control of pricing decisions, often using intuition in setting the job cost. In both these cases, the investment decision undertaken by M and in most job/actual analysis in B, the intuition of the owner proved accurate.

The above results imply that even when employing a bookkeeper, the owner/manager still keeps control of the business decision-making. Those employing an internal bookkeeper tended to be larger in size, which combined appears to imperceptibly corroborate the findings of Flacke and Segbers (2005) when they reported that they could not find proof that the company size affects management accounting significantly. In the case of these findings, it could be implied that even though management accounting techniques are used within the business, ultimately the owner/manager makes the decision, often based on a mix method of data collection with financial data and intuition playing differing roles in the process. Thus it is important to consider not only the role of management accounting techniques, but also that of a decision-maker's intuition.

Intuition versus planning

The SME owner/manager has little time to think strategically about the business with resource constraints necessitating intuitive decision-making (Busenitz and Barney, 1997; Tibbits, 1981). Evidence suggests that many successful SMEs do not practice what is conventionally described as strategic management (Pleitner, 1989), evidenced with DB and the investment appraisal approach he undertakes. Suffering from strategic and environmental shocks for which they do not have the (managerial) skills to respond (Barrow and Brown, 1997), which may be evidenced in the first case narrative. Others however adopt sophisticated strategic planning methods (Deakins et al., 2001), evidenced through the later case narratives. Thompson (1967) considered that in cases of high uncertainty, managers act in an 'inspirational' manner, by making obsolete any formal procedures and rules usually followed. Considering the case respondents, those who employed management accounting techniques all employed a full time bookkeeper/accountant. Examining the questionnaire replies, a similar pattern existed; those who employed a bookkeeper/accountant appear to employ more sophisticated management accounting techniques to aid decision-making. However, in these cases prices were set by that employee rather than the owner/manager and this must be considered as a factor, which then bring the concept of education (of the bookkeeper) into contention as an issue.

Additionally, Holmes and Nicholls (1988) considered that the larger the small firm (in terms of employees and turnover) the more sophisticated the formal financial planning; Lauenstein (1978) stating that for many (large) companies, decisions are based more on the experience, judgment, and personal attitudes of senior executives than on calculations performed by staff and Schnitkey et al. (1992) found that farmers with more experience should have less demand for information. All of which could also be indicative of the findings within this study. Case G is a larger firm which appears to have a sophisticated formal planning routing. In both B and M, the owner/manager overruled calculations. DB considered the process to be more expensive to gather the financial information and relied on his own business acumen to negate the expense of collection and analytical processes. Doyle (2002) states that many inexperienced entrepreneurs find they are talented in 'wooing' investors but less competent or interested in managing less glamorous elements like inventory control and marketing expenditure. This is evidenced within the first case study (Z), accounting was seen as a hindrance and as such very little time was allocated to it. However, on further investigation, it appeared that it was a lack of knowledge and understanding that was perhaps the issue.

As reported in the previous section, intuition appears to play a strong role in the decision-making processes of SMEs. Case DB basing almost all of his business decisions on intuition rather than financial data which is compounded by the fact that he is educated in accountancy techniques to a high level and thus, unlike case Z, could see the benefits of having a diversity of data to aid decision-making. However, like the decisions in both case M and case B, whereby financial data was ignored over intuition and proved successful; DB proved that his decisions based on intuition were also 'sound' by producing a spreadsheet which corresponded to his intuitive calculations. This could highlight a completely different aspect; how much does DB's educational background influence his intuition? Even though he did not use a spreadsheet or other financial data to help him make decisions, it may be considered that his knowledge of how to use these techniques may subliminally influence his processes. This would be very hard to prove, although it does highlight another aspect of the decision-making process, that of education.

Education

The previous section considered the aspect of intuition versus planning however education could be an influential aspect with SME owner/managers. There are no minimum standards or qualifications required of an owner prior to SME business entry (Dyt, 2005). A consideration of education, not only formal training but also through the use of instruction manuals, text books and experiential learning needs to be undertaken and should not be limited to the financial field of business. Previous research indicates that small businesses develop people but predominantly by informal means that rely heavily on experiential learning (Ottens, 2005) and that the influence of 'continuing education' on an SME owner/managers skill development and capabilities acquired was invariably: "insignificant." Conversely, the part 'experience' had played was rated: "very significant" (Hankinson et al., 1997). In addition, although owner/manager attitudes to vocational education and training are largely positive, its actual provision fails significantly to keep pace with the perceived needs of small firms (Matlay, 1997). This may be further impacted by the lowering of funding mechanisms on continuing educational courses offered within the college and university systems, leading to more 'full cost' courses, which are often far too expensive for an SME. Previous research (Walker et al., 2007) has also concluded that small business owner/managers will participate in training opportunities if they are directly applicable to current situations in their business, and if the delivery process is carefully structured in terms of location, time of day, and length of session.

With case DB, formal accounting training did not appear to produce management accounting led decisions; here it appeared that intuition was the main factor. The second interview showing perhaps that the intuition was somewhat based on management accounting 'in the head'. This could be related to DBs experience; Bergstrom and Lumsden (1993) found that less experienced managers compensate for their inexperience by using formal planning routines to a relatively greater extent than managers with relatively more experience; DB is a very experienced owner/manager with formal accounting education and as such he considers he doesn't require 'formal' planning. Various research shows that the more the business manager is educated, the more use is made of information (Taragola et al., 2001). Richbell et al. (2006) found a positive relationship between higher levels of education and undertaking business planning; Holmes and Nicholls (1988) reported the higher the manager's formal education the more sophisticated the formal planning routines that are being used in the small firm. Neither prior finding is fully evidenced here, although when considering the accuracy of DBs 'conformational' spreadsheet, it could be argued that although no 'formal' planning had taken place, informal, intuitional planning had, which could have a basis in DBs educational background. Beattie (1999) summarised that over their life paths, and many experiences, entrepreneurs developed a trust, and sometimes reliance, for their intuitive insight abilities in particular situations, often employing mental modelling activities, utilising visualisation techniques to picture and enact situations before they occurred. This appears to be very evidence within DB's ability to manage his business in the manner that he does. Additionally, Flacke and Segbers (2005) reported that the education of the entrepreneur had no significant influence in the management accounting systems employed within their study of German SMEs. Ekanem and Smallbone (2008) concluded that informal routines providing 'satisficing' solutions, which, although not explicitly rational, are bounded rational, rational within the context of owner/managers' perceptions, knowledge and experience, which appears to be evidenced in DB's methodology throughout his decision-making. A question related to the educational background of specific members of the SME was not included within the final version of the empirical study since this was considered intrusive by the test recipients. Thus, there are only responses to consider from the case narratives as well as previous research.

Aspects such as education, age, gender, and work experience are frequently hypothesised to influence the use of information and business performance but are not evidenced/verified in major empirical studies except education (Storey, 1994). In general, these factors are related to a decision-maker's ability to create value from the information gathered from different sources (Taragola et al., 2001). Collis and Jarvis (2002) found that the education, qualifications, and training, which they used as a proxy for the sophistication of management's financial skills, were not found to be a significant factor in the utility of management accounts, however they did acknowledge that by excluding skill development from tacit knowledge may have been a contributory factor in these results. Further, Simpson et al. (2004) considered the impact of education, training, development, prior knowledge, and experience on the success of businesses, concluding that although there was clear evidence that education and training had a positive effect on the success of the business, most businesses relied heavily on prior knowledge and experience. This leads to a consideration of the experience of the owner as an influence on the SME owner/manager decision-making processes. The case narratives provide a rich source of information to further explore this area.

Experience versus intuition

The analysis of the case narratives suggest SME decision-makers develop competencies for doing business through experiential learning, findings consistent with Grant et al. (2001). This study has validated prior research through the use of the secondary interviews, showing how one owner/manager (Z) made a concerted effort to improve his decision-making by building on his existing competencies and by actively developing knowledge. Even with case DB, an experienced owner/manager, change was seen in his attitude to using management accounting to help in decision-making processes. Supporting the concept that financial management practices in small firms are far from static; the owner/manager learns to alter behaviour and change practice with experience (Deakins et al., 2001).

Hankinson et al. (1997) reported that continuing education played an invariably "*insignificant*" influence on the skills and capabilities acquired by their surveyed mangers. Conversely, the part experience had played in the skills and capabilities acquired were rated *"very significant."* Case DB appears to confirm this with his lack of performing any computations to assist in making decisions. Case's B and M, although employing a bookkeeper internally, both made decisions not based on the financial data, but on intuition (grounded in experience). Miller and Friesen (1984) state that as businesses survive and develop, as the owner/manager gains more experience, the range and sophistication of different managerial techniques and practices that they deploy tends to increase. However, they do not elicit whether this is by employing techniques such as management accounting 'tools' or that their management abilities increase, as in the findings of Beattie (1999) who considered that entrepreneurs develop over time mental modelling activities, utilising visualisation techniques to picture and enact situations sometimes even before they occurred. Additionally, Holmes and Nicholls (1989) report that as business size grows, the level of accounting information gathered and prepared grows but the relative engagement in formal financial planning is higher in younger small firms than in their older counterparts, potentially implying that management in older firms is based on experience and intuition rather than on formal financial planning (Holmes and Nicholls, 1988). Bergstrom and Lumsden (1993) summarise that the less experienced managers compensate for their inexperience by using formal planning routines to a relatively greater extent than managers with relatively more experience. Results from the empirical study and the case narratives were unable to fully clarify this area. Miller and Friesen's (1984) concept leads the reader to assume that an 'older' business would employ more techniques to aid decisions, for example, case DB appears to use less. Case B and M, although employing more techniques, ignore the results in favour of intuitional decision-making. G however does tend to use more formal techniques and is an older business. This could be related to the nature of the business, whereby job sheets can easily be attributed to products. When considering the techniques employed to price products in the empirical study organisations, there was little to infer that a 'more sophisticated technique' was being employed because of the age of the business, although older businesses did employ techniques that could, like case G, be seen as sophisticated this could have been due to the size or industry of the SME, for example.

Use of financial data

From the findings of this research, it appears there is considerable variation in the financial management practices of SMEs with some owner/managers capable of adopting sophisticated approaches including full strategic and financial planning methods which is confirmed through the work of Deakins et al. (2002). This was evidenced through both empirical and case narratives.

Consideration of cash management appears a high priority within SMEs with 90% preparing a cash flow statement and 91% performing bank reconciliation (questionnaire) and all case study SMEs (asked) formally constructed a cash budget, with 3 from 4 (no information being requested from case G) monitoring results. This result could be an indication of a variety of influences, none of which it would potentially be possible to prove since the owner/manager may not even realise the influence themselves, let alone be willing to acknowledge it. One factor could be the influence of the bank; this was evidenced in case Z, who's bank advisor had given a form for completion and brief training. Z thus prepared a cash budget, but since no indication of its purpose or any suggestion of a monitoring process was initiated, none was undertaken. Another bank influence could be whereby the SME is required to carry out cash budgeting since they are experiencing cash flow problems. The cash monitoring processes of case B were used to monitor transactions that required recording and thus formed part of the financial accounting system. Although this was initiated by the accountant (to monitor the owner) it is potentially within consideration that cash budgets are utilised by an owner/manager to monitor the success of his/her own business, from a view point that it is more understandable than profit/loss. Jarvis et al. (2000) found that considerable variety existed in the financial management practices of small firms and concluded that monitoring of cash was more important than profit to consider the success of their surveyed business, which could also be evidenced within this study, whereby although the majority of those surveyed prepared financial records such as profit and loss and balance sheet, most did not appear to utilise this data to its full. Earlier financial management research (Dyt, 2005, Jarvis et al., 2000) had also found although business owners had a favourable view of these reports, they do not necessarily use these report and owner/managers considered quality of inputs and outputs and intangible indicators more important than some more 'traditional' methods of performance indicators. Likewise, although all five cases indicated some use of management accounting techniques in the day to day running of the business, there was little evidence of it being employed in long-term planning, which is confirmed by Berry et al. (2002) who found a large number of owner/managers in SMEs do not regard cost information as important in key business processes and McMahon and Holmes (1991) who stated that often short term planning is performed informally even *"in the back of their minds"* or *"on the back of envelopes"* pg. 26 (McMahon and Holmes, 1991), which was very much in evidence within cases DB and B and as such leads back to the previous consideration of intuition. An additional consideration however came from case Z; you can't utilise what you don't know about. Case Z operates a rudimental costing system, based on a logic approach. This could be argued to be costing in its pre-textbook form – the genesis of its foundations being from the technicians operating in the newly formed businesses of the Industrial Revolution. However, case Z did operate stringent cash budgeting, since this was a requirement of his bank; his bank advisor having given basic training to Z along with pre-set forms for completion. No real monitoring was undertaken, since the bank did not require this and in fact had given no indication that it was a preferred continuance of cash budgeting. This leading back to the tenant; what you don't know about you can't/don't use.

Management accounting techniques

A key objective within this research was a consideration of the management accounting techniques being used within SMEs to aid decision-making. The sections above have considered the uses of financial data within SMEs, leading through the intuitive processes to the educational considerations. All of these factors align themselves to the owner/manager as the main decision-maker. Thus a starting point to consider the management accounting techniques being employed within an SME to aid decision-making must be to consider the owner/manager and their potential understanding of the techniques available to help in decision-making processes. Owner/managers, whether classified as entrepreneur or not, come from different genders and/or a wide range of ethnic, cultural and educational backgrounds and arise within every age group (Curran and Blackburn, 2001). The majority of 'chief executives' of small firms do not have any formal post-school management educational qualifications; owner/managers are less likely to have pursued a formal education than those holding managerial positions in large organisations (Bolton, 1971). Thus their understanding of management techniques, including accounting and financial techniques is often limited. This is often when the use of a 'practitioner' or 'expert' is initiated. This person can be employed internally, for example a bookkeeper, or externally, an accountant or small business advisor, for example. Management accounting requires practitioners with a 'big picture' point of view who are able to challenge operating managers as peers. Moreover, management accounting is more than just accounting, it requires people who understand the behavioural consequences of numbers and who can link controls to strategy (Mercereau, 2006). In the case of SMEs this is further compounded by other factors, for example; the influence of the owner/manager on the decision-making, as seen in cases B and M; the educational knowledge of the technique, for example case Z; and the ability to adapt a technique to 'fit' the requirements of the organisation (DB). Collis and Jarvis (2002) considered this last factor when considering aid given to SMEs, stating that those advising small companies on financial management should be wary of using a large company model to prescribe best practice, but rather to encourage practices to develop on a contingency basis. This could be interpreted as an experiential led development, based on the intuition of the owner/manager developing over time. Although this was not directly evidenced through the questionnaire study, it was evidenced in the study, especially those where a second interview was undertaken. This could also be interpreted as considering those techniques 'invented' for the larger business, say by academics and mathematicians, techniques like balanced scorecard and benchmarking, simplex and limited factor analysis, as less beneficial than those developed through experience, for example 'born' from the business itself by the technician or engineer, for example costing for decision-making and investment appraisal techniques. Table 14 shows an overview of results from the questionnaire survey mapped to the historical context of differing management accounting techniques. This historical contextualisation has previously been discussed within the questionnaire findings, considering not only the techniques related to that historical birthright, but also to the usage reported within those SMEs surveyed in this and previous research.

Table 13: Historical mapping of management accounting techniques aligned to empirical study key responses

(Source: Authors own)

Academic	Mathematician	Economist
Two separate accounting systems ABC 93% unaware TQM 99% unaware, MRP, Balanced scorecard 100% unaware, ABM, EVA, Benchmarking 95% unaware	Simplex 100% unaware, Limited factors 97% unaware Probability, Optimisation models, allocation of overheads, Joint costs, By-products, Regression analysis 100% unaware	Fixed costs Opportunity cost 99% unaware Variable costing, 93% could → always use variable costs Opportunity costs Capital budgeting, Product mix, Profitability analysis, Transfer pricing, Cost control, Evaluation Transfer pricing, 93% unaware Opportunity cost Discounted cash flow, Break even charts, Cost structures Break even = 39% use all the time 59% could → sometimes use

Engineer	Scientific Management	Entrepreneur
Capital investment appraisal Time value of money 35% would use some form of investment appraisal 96% would consider non-financial information Standard costing - variance analysis 46% unaware or inappropriate: 54% could → always use	Variance analysis (equations) See also Engineer Variance analysis	Costing - discontinue production Cost-benefit analysis Operating and budgeting activities, Return on investment 96% said they were unaware of the concept of a master budget. This could be due to terminology.

Technician
Cost determination 36% used some form of cost determination when setting prices, but see also consideration of variable costs Costs/costing for decision making Goal related information 97% use financial data for decision making, with 61% saying that they use the data regularly. 93% use financial data to motivate, 46% saying it is a high priority usage. 93% also state use financial data to set goals, with 56% saying it is high priority. Job costing, inc labour and materials Lease or buy Benchmarking 95% unaware, 69% benchmark month to month 995 benchmark year to year incentives for workers, identification of different costs Charging overheads to departments, Direct labour hour, prime cost Sensitivity analysis Job costing, Materials loss/waste, {standard costing?} Stock turn

Table 14: Key characteristics of the case respondents (five cases)

	Case one (Z)	Case two (G)	Case three (DB)	Case four (M)	Case five (B)
Initial contact	Nurtured from alternative contact	Chance meeting	Selected	Selected	Selected
Methodology	Semi-structured, exploratory interview Questionnaire used for structure base	Semi-structured, exploratory interview No access to questionnaire	Semi-structured, exploratory interview Questionnaire used for structure base	Semi-structured, exploratory interview Questionnaire used for structure base	Semi-structured, exploratory interview Questionnaire used for structure base
Meeting details	Two interviews. Both held at interviewee's workplace Private meetings Notes taken during interviews, transcribed straight after First interview notes reviewed by respondent	One meeting held in public place Not private setting No notes taken during interview but written up straight afterwards. No follow up meeting	Two interviews. Both held in one of interviewee's workplaces. Semi-private meetings (other staff members within area Notes taken during interviews, transcribed straight after First interview notes reviewed by respondent	Two interviews. Both held at interviewer's workplace Private meetings Notes taken during interviews, transcribed straight after Both sets of interview notes reviewed by respondent	One interview held at interviewee's workplace Private meeting Notes taken during interview, transcribed straight after Interview notes reviewed by respondent at later date No follow up meeting except for checking of notes
Business	Young business Owner/manager plus approx 5 staff Retail and service business Highly competitive business	Long existing business 2 owner/directors plus 30 staff Manager new to business Manufacturing business Some competition but not local	Long existing business Owner/manager plus 3 staff Owner has several enterprises Retail business (making some products) Highly competitive business	Established business Owner/manager plus approx 15 staff Manufacturing business Medium competitive business	Long existing business 2 owner/directors plus ad hoc workforce Building business (bespoke items) Some competition
Findings:					
Job costing	Some concept but no knowledge of overhead costing Pricing led by marketing strategy.	Full system using quotations into job sheets which are then analysed. Variations considered and used to update new quotes. Unknown re overheads Profit consideration high.	Formal system in operation, including break even analysis although not evidenced in writing. Profit maximisation high consideration	Formal system in operation, including break even analysis evidenced in writing. Profit maximisation high consideration Pricing led by marketing strategy	Formal system in operation, although not evidenced in writing. Variations considered and used to update new quotes. Overhead system in operation Profit consideration medium
Cash management	Cash budgets constructed. No analysis or reconciliation.	Formal cash budgets constructed and monitored.	No details given	Formal cash budgets constructed and monitored. Overdraft position leads to bank interviews.	Formal cash budgets constructed and monitored.

	Case one (Z)	Case two (G)	Case three (DB)	Case four (M)	Case five (B)
Investments	None employed.	Appearance of some investment techniques being employed but with current cash situation investments limited to necessities.	Appearance of some investment techniques being employed led by profit or legal requirement.	Appearance of some investment techniques being employed led cash position.	Investment techniques being employed potentially led by family member qualified to AAT4.
Other findings	Accounting is seen as a hindrance by this business. The owner has no real understanding of it and it is last item on the working day agenda (and as such often gets left). Bookkeeper has just been employed to 'sort-out' systems and procedures.	Fully computerised accounting system with full-time accountant employed	Although much of the management accounting is within the owners head when he constructed a spreadsheet after the first interview the figures and facts were aligned with his own 'thoughts'.	Fully computerised accounting system (sage) with full-time bookkeeper employed.	Fully computerised accounting system with full-time bookkeeper employed.
Conclusion	The owner has no training in the world of business and apart from good product knowledge the business seems to exist more on luck and logic than any formal procedure or technique.	Formal management accounting techniques appear to be employed to aid decision making processes within the business both on operational and strategic basis.	Although this owner manager has very formal accounting training his decision making is based on intuition more than hard facts.	Owner manager has been in businesses for a number of years and has encountered cash flow problems which ultimately led to systems being put in place to help reduce financial problems.	Formal management accounting techniques appear to be employed to aid decision making processes within the business both on operational and strategic basis.
Further considerations	Changes were evidenced between interviews and it is considered that these will change procedures of this business in the future.		Changes were evidenced between interviews although it is felt these had no effect on the future decision making of the business.	No changes were evidenced between interviews.	

Table 15: Key characteristics of the case respondents (five cases)
(Source: Authors own)

Table 15 above (and within appendices) indicates the key characteristics of the case narratives, including the methodology and an overview of the responses received. This, along with the mapping of key responses from the empirical study will be utilised to further consider the phenomena, aligning also to previous research undertaken in similar studies and other literature considered pertinent to this work:-

Academic and Mathematician

Of those techniques considered under this category, not one business within either case study or questionnaire study reported that they used them, with some respondents unaware of their existence. As can be seen in the above table, results ranged from 93% - 100% unaware. It could be implied that since an owner/manager is unaware of a techniques, s/he could not use it; conversely it could also be implied that if an owner/manager had not gone 'looking' for a techniques to help in certain decisions, for example if they felt their costing of products was somewhat deficient, they are possibly content with their current decision-making process in that area. Likewise, none of the case interviews highlighted any usage of techniques linked to the historical background of either academic or mathematician.

Economist

There were mixed results in this section which may be aligned to the techniques in question rather than results from the questionnaire. Transfer pricing would be inapplicable to most SMEs for example. The results from break even could also be seen as potentially incorrect (when considering historical context) since the economist was credited with the birth of break even charts; the questionnaire only asked about the concept of break even, the origins of which are unrecorded. Likewise, the concept of variable costing is allocated to the economist, but cost pricing decisions is allocated to the technician. The case narratives indicate some use of techniques such as break-even as well as a consideration of costing structures being in place. However, some of these were 'in the owner/managers head' and others potential linked to the type of business (case G for example required job costing to be undertaken to provide quotes for potential customers). In these instances, the technique was more considered to be 'technician' than 'economist'.

Engineer through to Technician

Most techniques 'born' within these historical contexts appear to be relevant and used within SMEs. There are two anomalies between the matching of techniques; historical to use. The first being master budgets, the other benchmarking. However, as reported previously in this work this is considered a difficulty over terminology as well as tracing the historical background. Considering the master budget, 96% stated they were unaware of it, which is not in line with previous studies. However, 30% of respondents reported that they use some form of variance analysis, which is in line with previous studies, which would indicate that they use some form of budgeting process initially, rendering the 96%

unaware of the master budget as potentially flawed results. With benchmarking, although it is allocated to the technician background, and although this technique is possibly employed, today it is often seen as an academic technique; not as its original form of using financial data to consider one year on another. Seen in this context, 69% used financial data to benchmark month by month, 99% used the data to compare year to year. All of the case interviews provided information sufficient to conclude that 'technician' led techniques were regularly utilised as part of their business. These techniques range from the basic use through to full management accounting. Case Z for example, appears to use certain methods at the very rudimental end of the scale, almost 'logic' designed techniques rather than those based on education. Case DB, although educated in management accounting techniques, appears to use intuition rather than 'hard facts on paper'. Cases M and B show more sophisticated usage, but even then, the owner/manager adds intuition into the decision making scenario.

Conclusion

Accounting research is concerned with increased knowledge and understanding in order to improve and extend the practice of accounting not the pursuit of some ultimate truth since research has no purpose unless it can have an impact on practice. This means there needs to be effective communication of research results from researchers to accounting policy makers and practitioners (Flint and Shaw, 1981). The objective of this research was a consideration of the management accounting techniques utilised within SMEs to aid decision-making. This has led to a multi faceted research, encompassing the key components of management accounting, decision-making and SMEs as well as considering concepts such as entrepreneurial spirit. The literature review considered boundaries for the research, for example considering differing definitions for SMEs as well as considering not only differing techniques under the 'definition' of management accounting, but also their historical background.

A basic information systems management tenet is that if information is multiplied by the sum of knowledge, understanding and experience, it will lead to decisions being made (Bentley et al., 2000). This equates to the initial processes within this research, whereby the information was collected through literature reviews of various schools, from management accounting literature, SME and entrepreneurship, through decision-making processes and then into methodological issues. This information was then assimilated by the researcher, through the use of theoretical frameworks and augmented with her prior knowledge in both subject and methodology fields. The construction of theoretical frameworks ultimately led to an acknowledgment of the data required to be collected to analyse the premise of this study. The sum of this action was to lead the researcher into decisions concerning the methodology appropriate and ultimately into the data collection and analysis. The following chapter reflects on the whole process from both the methodological view as well as conclusions drawn from the data and highlighting aspects considered appropriate for future research.

Chapter 9: CONCLUSIONS, REFLECTIONS and FURTHER WORK

All research is incomplete. No project ever provides a definitive answer to the problems it seeks to understand. Indeed, research sometimes results in having to accept that we know less than we thought we did. What sound research achieves is more understanding not complete understanding. Those who expect research to always provide conclusive answers are asking for the impossible. Research chips away at ignorance about whatever topic it focuses upon and seeks to provide more knowledge. But there can be no guarantee that this knowledge will not be superseded by future and better research.

(Curran and Blackburn, 2001) p.25

Introduction

This thesis has considered the techniques used within an SME owner/managers decision-making processes, focusing on the use of management accounting. It has considered the complexity of identifying an SME and the multi faceted owner/manager with their decision-making processes, through to the variety of management accounting techniques that may or may not be available or utilised within an organisational decision-making process. The purpose of this final chapter is to explain how the objectives of the investigation have been met and to summarise the contributions made. The initial consideration being what they key findings of this research is. Conclusions from each of the previous chapters will follow, which will then lead the reader through the various sections: Consideration of the initial concepts behind the study; critical reflection on the methodological issues arising from this research; contemplation of the learning gained by the researcher in this process; an examination of the limitations of the study. Potential practical applications of the work will be outlined, as will the usefulness of the approach used and the implications of this for future research and practice.

Key Findings

It was initially considered by the researcher, that SME owner/managers did not fully utilise management accounting techniques within their decision-making. However, this pre-conception was altered when the historical contexts of the techniques were highlighted through the literature review. This indicated that those techniques aligned to the technicians operating within the newly formed and developing businesses of the Industrial Revolution were conceivably utilised in businesses, but those affiliated with academic, mathematician or economic origins were not. Through use of empirical work; questionnaire and case interviews, this concept was tested and results clearly indicate that there is an interconnection between the historical context of a costing / management accounting technique and its utilisation within an SME. Additional analysis of past research also appears to confirm the interconnection, but the exact nature of this connection is hard to deduce. Although the techniques being employed are 'text-book' available, are they used within an SME because of their accessibility, or could it be that they are instruments of simple logic? How this has occurred in practice is still to be examined (through further research) but it is theorised that the embryonic techniques conceived by the early technicians and engineers of the new formed businesses (potentially based on previous cost identification methods) was based upon simple logic; an unconscious competency. This was not learnt knowledge; the same as the 'learning' of today's SME owner/managers and as such the same thought processes used in the early costing systems is imaginably being employed within SMEs throughout the world to aid their decision-making processes. Thus there appears to be a connection between the historic background of a management accounting technique and the use within the decision-making processes of an SME owner/manager which was highlighted after a consideration of the management accounting techniques considered appropriate within an SME was undertaken, which conjoins part of each of the research objectives.

A further affiliation, between techniques utilised and industrial context, was also evidenced. This was not an original consideration of this study but one that materialised from the interrogation of the questionnaire responses and case narratives. Findings imply that both size, often with the employment of an 'expert', and industry type showed some correlation with techniques being employed. However, even though management accounting was visible within these businesses, it wasn't always the key component within the decision-making process, with intuition often taking precedence. Another potential correlation, between the age of the business and its use of management accounting techniques, an alignment considered in previous research studies, was not fully visible, however this is potentially due to other factors such as the low sample size and further research could be undertaken in this area to corroborate or refute this alignment.

Entrepreneurial idiosyncrasies were visible with the utilisation of instruments of simple logic ('logic' designed techniques), along with 'mental' calculations, 'transcendental' payback (whereby gain was related more to the business needs rather than the flow of funds) and the right (of the owner/manager) to 'veto' results from management accounting led calculations; an alternate conceptualisation of these techniques being that they are simple application of common sense. Various case narratives provided a rich source of these aspects, with some additional visualisation of the true expertise embedded within an entrepreneur in being able to make 'in the head' calculations of simple logic leading to apparently 'accurate' decisions. An additional finding in the same vein being that management accounting doesn't need specialists or fancy computer systems to be employed in SMEs - what it does need is good leadership and experience of those in charge. This in part answered the first question of the research objectives.

Contributions of the study – a summary

Chapter one set out the aims and research questions for the study including identifying the intended area of research as being: "The use of management accounting techniques in small and medium enterprises decision-making." The fundamental question being to examine the role of management accounting techniques within small and medium sized firms in the decision-making process, using a sample of SMEs within the Midlands region. Four specific questions were considered pertinent to the work, which, apart from the last, are re-instated here in a non-chronological ordering. Firstly, what are the main (financial) decision-making processes adopted by SMEs, with an additional consideration of who would be the main decision-maker? Secondly, what management accounting technique would be considered relevant to this decision, with an emphasis on the background of that technique? The third question conjoins the first two. Does the historical background of a management accounting technique have an influence on its use within the decision-making processes or an SME owner/manager? Finally, is it possible to develop a useful framework to understand and encapsulate the usage of differing management accounting techniques of SME owner/managers? On reflection, it is considered the above questions have been answered and as such the research aims have been largely accomplished.

In addition, the parameters of this study, outlined in chapter one, need to be contextualised to allow for overall conclusions to be drawn. Within the introduction, parameters for decision-making, acknowledging such aspects as risk, were outlined. The definitions for management accounting and SMEs were acknowledge to be broad, but with further investigation throughout the literature research, boundaries were set. These parameters were considered robust although the literature review considered further aspects and ultimately led to a consideration of the historical contextualisation of management accounting, recognising this as one of the main findings of this research.

Chapter two provided a detailed, critical review of the theoretical literature of management accounting, SMEs, including an acknowledgment of the multi-faceted owner/manager and decision theory. Further, the chapter traced the development of management accounting from its conceptual being in the industrial revolution, termed costing or cost accounting, through the development by those working within businesses through to the modern techniques developed by academics and theorists. It is considered that the most enlightening aspect of this chapter is the historical contextualisation of management accounting constructed from prior research and literature. Having conducted the literature review, the definitions and parameters considered in the introduction chapter and developed within the literature review have been found robust and useful. They can therefore be offered as modest yet useful contributions to wider knowledge.

The conceptual framework chapter three allowed the researcher the opportunity to diagrammatically and textually construct theories to allow for the evolution of the concept for the study to be considered and ultimately to allow for a conceptual framework to be composed. The diagrammatical framing of the major themes arising from the literature and from reflection on the initial fieldwork was proposed, and the research design being in part a consideration of the data required for the study, ultimately led to a methodological view to be constructed.

In chapter four, the researcher considered various methodologies appropriate for this study, highlighting the reasons for their appropriateness as well as acknowledging limitations and offering explanation how, wherever possible, it was intended to negate or decrease these limitations. Methodological issues and methodology employed in prior research was considered, aligned to the requirements of this study. When appraising results from prior research, data collection was aligned to this study to offer insight into any similarities or difference.

Chapter five outlined the procedures employed within the empirical study and offered an analysis of the findings, with chapters six and seven exploring the case study processes and narratives. The findings from the empirical study were examined aligned to the historical contextualisation and as such the main findings were presented under the headings of the 'inventor' school, for example technician, mathematician. The case narratives in chapter seven offer the reader an insight into the businesses interviewed and when considered alongside the questionnaire results, offer a rich source of data for analysis.

The research data was ultimately considered within the interpretation chapter eight where it was aligned with prior research wherever possible. The analysis leads the reader through from who makes decisions within the SME business to the historical background of techniques being employed within the decision-making processes.

This chapter nine is intended to draw conclusions from the work, to allow the researcher to focus and reflect on not only the data collected but also the processes by which it has been gathered and to highlight areas considered appropriate for further study.

Initial concepts and considerations

When this research was first considered, it was based on the concept that SME business owners did not use management accounting techniques, or if they did, their uses were very limited. This was based on a personal premise that either management accounting was not considered a benefit by SME owner/managers or considered from the view of what you don't know, you can't use.

Whilst undertaking the literature review, a major influence to the continuation of this study was the concept of what qualifies as costing and / or management accounting; costing being the oldest form; management accounting being the more modern. More importantly, there appeared to be some distinctions between the historical backgrounds, i.e. the 'inventors' of these techniques. With technicians and those employed within the field being mainly linked to the costing techniques and academics, mathematicians and economists the management accounting ones. This was a major step forward in considering which techniques are utilised within SMEs and which are not since it led to a historical contextualisation of the differing techniques labelled as management accounting. Thus further research, in the form of in-depth consideration of the literature pertaining to the historical background of costing and management accounting, had to be undertaken to be able to analyse which techniques came from which area of the accounting genre. With this information, the research could continue by enquiring of SME owner/managers which techniques they utilised, aligning the results with the historical context of the techniques. However, care had to be taken since many of the owner/managers utilised techniques without knowing their name or concept, for example when looking at what to charge their customer based on the cost of their products, many owner/managers did not consider this to be an 'accounting' technique.

To most owner/managers the concept of accounting is simple (McMahon, 1998). Record the transactions as they happen and then produce a profit and loss and balance sheet (all financial accounting documentation). This is consistent with findings from this study. Most understand the necessity of producing some form of plan, usually in the format of a cash flow forecast; most understand that this needs to be monitored and evaluated on a regular basis, but this is often influenced not by the SME owner/managers requirements but an external stakeholder. Financial accounting; the recording of transactions, ultimately producing the trading, profit and loss account, the balance sheet, and cash flow statement are also often undertaken because someone external to the business required this information; the bank; the taxman; the ex-wife or husband. Additionally, documents are potentially constructed and used to aid the business move towards its goals, but the owner/manager may not understand their link to accounting, following the outline of a technique not because it was taught or learnt but due to applying logic; these techniques being a simple application of common sense.

Management accounting techniques used within SMEs however they are termed are usually undertaken by the owners themselves, with some external influence and/or assistance. Most SME owners employ an accountant, although most are not employed on a daily basis, but perhaps on a monthly, or quarterly basis to prepare the 'accounting' documentation. Financial accounting records must be kept in certain ways and use certain techniques in their production due to accounting rules and regulations and if they are not, the business owners and/or accountant can find themselves liable for the 'wrong'. However, with management accounting, apart from text books, which often have slightly different ways of finding an answer (for example the Accounting Rate of Return in long term planning), there are no real 'preset' techniques and apart from those people undertaking formal studies in the area, there is very little influence of the owner/manager and as such it is unlikely the user of the techniques will be informed that s/he is calculating it 'incorrectly'.

Management accounting documents are kept internal; financial accounting documents are sent to all kinds of external organisations, thus again, external influence is very limited. Lastly, financial accounting documentation is filed and kept for posterity, often not only within a business but also lodged with Companies House; management accounting records may be filed but are more than likely destroyed after use.

This potentially is a reason why management accounting appears to be a 'new' form of accounting – the historical records of it being used are limited, whereas financial accounting documents can be traced back for hundreds of years and for many different businesses. Management accounting records are not, as a rule, kept: Financial accounting records have to be kept.

Thus, to be able to investigate whether SME owners used certain management accounting techniques was not as simple as asking to see their accounting records; neither could the research questions ask which accounting techniques were used within the business, even if this was linked with forward planning and decision-making. SME owners often do not realise that they are using accounting techniques to aid decision-making. Sometimes this is because they have never been formal 'taught' the technique and as such, they do not know its 'name', or even identify it with accounting, excepting the fact that it uses numbers linked to the formal accounting records. Other times it is because when a decision was made, it was on an informal basis, often long in the past and any records there might have been of what went on at that time are long gone, filed in the biggest filing system in any business – the bin. This is in no way a failing on the owner's part. Within our private lives we undertake certain decisions and at the time research and decision-making took place, but after the event none of this 'documentation' survives. Take the task of purchasing a new vehicle. Most people will research which car they would like to own/drive. They will have test drives and look at financial aspects of their choices. They will perhaps look into the various finance schemes, jotting notes down maybe on scraps of paper as they progress through the decision-making process. A decision will be made, the vehicle purchased, and all of the research 'documentation' and processes are forgotten, the paperwork consigned to the bin, the test drives and discussions with the various sales outlets drift away into the persons memory. This is an example of management accounting at work, albeit within a personal rather than business scenario. What makes academics think that when a person sets up a small business, or when that business grows, the techniques employed will be any different than those s/he has employed in their past experiences with decision-making? These techniques are a simple application of common sense. The only real advantage to documenting and storing the process and data being an experiential learning one; being able to learn from both the positives and negatives of the decision-making process. However, if the number of such decisions is relatively small then 'corporate memory' will be a factor not pieces of paper.

So, to be able to find out which techniques are employed had to encompass not only the formal techniques, using formal terms, but also the possible methodology had to be explained, asking how, for example, the decision to price a certain product at a certain price came into being. How does the owner know how many of a certain product they have to sell before they have covered all the business costs – rather than what is your break-even point for a certain product. This also meant that certain tact had to be employed to ensure that the business person did not think that because they were doing, or not doing, something in a certain way, they were wrong and that they should be using a different technique. Not only could this of alienated the subject, but also lead them to possibly alter their answers to perhaps cover over the fact that they did not know the 'formal' name or method, thus potentially giving the researcher the 'wrong' data.

Taking all of the above into consideration, the conclusions that have been derived upon the issue are speculative. Attempts have been made to ensure that when asking SME owners about the techniques they employ to aid them in their decision-making processes both researcher and subject were confident in their understandings and that these perceptions were in fact the same. Additionally, within the empirical study adjunct questions were applied wherever possible to confirm replies, for example when collecting data on break-even usage. Likewise acknowledgement has been made as to the possible alienation of the subjects and the resulting potentially flawed answers, albeit of an innocent nature, could have also taken place. However, it is within the understanding of the researcher that these misinterpretations (on either or both parts, in question and/or answer stage) can have clouded the findings, but not to the effect of rendering the research null and void.

Conclusions

Management accounting instruments are not stable and fixed, but are often complex, temporary and fragile. However, regularities, parallels and general tendencies between management accounting phenomena can still be observed across contexts though an examination of qualitative research warns against sweeping generalisations across contexts (Vaivio, 2008). In consideration, Berry et al. (2002) concluded that there are three main explanations of accounting use in SMEs. These can be used within this research to consider the case participants and the narratives received from them:

The relevance arguments: The majority of accounting practice is based upon the needs of larger businesses and that SMEs can get along with or need simpler practices. This research has shown that this is potentially not linked to the size of the business per se but to the historical background of the practice. Those techniques 'invented' by the technicians being visible within the SMEs surveyed in this study, both in the empirical study and the case narratives. Techniques introduced by academics, were not visible. However, since academics, mathematicians and even economists 'invented' new techniques based (usually) on the needs of large businesses, the relevance argument is imaginably evidenced through this research. Further, the 'logic' designed techniques employed within SMEs indicate that simpler practices are utilised, even where there is no (formal) education to lead their development.

The owner/manager capability arguments: Whereby the nature of the SME owner/ manager may be characterised by: (a) The lack of any understanding that could make use of accounting; (b) The competent owner/manager who does make some use of accounting; (c) The sophisticated use of ideas in decision and action by owner/managers. A complete lack of understanding was not visible throughout this study although certain results could by implication identify either a lack of understanding or unawareness: Respondents to the empirical questionnaire claim they are unaware of concepts such as ABC (93%), TQM (99%), balanced scorecard (100%) and benchmarking (95%), all techniques embedded within large organisations but as evidenced in previous studies (see, Drury and Tayles, 1997a; Zaman and Gadenne, 2001), of very little use within SMEs. When considering techniques evolved around the technician, such as the use of variable costs, no SME surveyed was unaware of the definition, with 46% using all the time. Owner/manager Z, proved capable of utilising accounting, much of which would be described as a rudimental fashion but some of which could be envisaged as sophisticated considering his lack of training in this area. It is further argued here that for a business to survive, an owner/manager must have a basic understanding of accounting. Most case participants utilised management accounting in a variety of forms. Some were linked not to their capability but to the requirements of the business (for example M, B and G's job costing), the owner/manager often then employing another to enact the management accounting requirements, thus leading to an expansion of this argument by acknowledging that when the owner/managers consider their lack of ability it may lead them to employ a specialist to undertake such role.

The innovation argument: The adoption of any accounting practices which may be viewed as an innovation in an organisation and that where the accounting is relevant and where owner/managers are open to change the process of innovation may be accomplished. This argument could be considered as the evolution of costing; the innovation of the technicians working in the newly formed industries of the Industrial Revolution, using their instruments of simple logic to aid decision-making, ensuing that their factory / organisation became the most successful (profitable) for its owners. This is conceivably apparent in all of the cases, from Z, who without any accounting training, except for the bank / cash budget, indicates that costing, albeit in a very rudimental, is being employed within the business – instruments of simple logic. DB, who for all his formal accounting education, is content with making decisions based on 'in the head' calculations. The innovation of an almost transcendental payback method considering non-financial rather than pure financial aspects typifies entrepreneurship. Through to M, who although employing a specialist, still takes the lead role in decision-making, utilising innovation / intuition / experience as prime tools for making decisions. It is difficult to consider the innovation argument from the answers of the questionnaire, however when considered in line with the concept that SME owner/managers use instruments of simple logic, techniques linked to the initial concepts of the Industrial Revolution technicians, then utilisation of such techniques as break even[3] indicating 92% of those surveyed had made use of it; 93% state they calculate (at least sometime) variable costs

Decision-making processes in SMEs

Not all small business owner/managers are the same, there may be marked differences in their reasons for founding the firm, their education and experience, their strategic management capability and their attitudes to growth (McCartan-Quinn and Carson, 2003).

[3] Break even charts are linked to the economist. The historical origins of break even as a calculation are lost in time, but it is envisaged they evolved from the concepts of variable costing and as such the technician.

This can be evidenced throughout this research and has been acknowledged by the researcher as a fundamental aspect of this study, for example Fig. 6 outlining the influences affecting owner/managers was developed further by considering Bauer's (1995) three-headed man; s/he is not only guided by economic rationality but follows a triple rationality: economic rationality, political rationality and family rationality, with each owner/manager being responsive to different rationalities, influences and factors at different stages of their life and for differing decision. SMEs, embedded in the physiology of their owner/managers, do not act as a homogenous group (Gibcus et al., 2005; Small Business Service, 2001; Torres, 2003).

The omnipresence in the small firm of the owner/manager is widely acknowledged in literature from various fields of study (Bridge et al., 2003; Leppard and MacDonald, 1991; McCartan-Quinn and Carson, 2003; Peel, 2004; Sdrolias et al., 2005). This study, corroborating other findings (for example, (Deakins et al., 2001; Greenbank, 2001; Yu, 2001), found that regardless of size or the employment of an accountant/bookkeeper, the owner/manager retains control of the business decision-making. When undertaking a decision, it is often based on a mixed method of data collection with financial data and intuition playing differing roles in the process, intuition appearing to play a strong role in the decision-making processes of SMEs, whereby even when presented with financial data to the contrary, an intuitive, possibly satisficing, decision was made (Collis and Jarvis, 2002; Ekanem and Smallbone, 2008; Simon, 1976; Thompson, 1967) as fully evidenced in the narrative of M when outlining the decisions made with regard a new project, making obsolete any formal procedures and rules, although M did wait for all calculations and data to be made available before undertaking any decision. The 'persuasive' effect of the omnipresence of the owner/manager, based upon their persona; their beliefs, ideals, preferences, experience and expertise, will essentially become those of the organisation itself making them highly personalised business entities (McCartan-Quinn and Carson, 2003). This has been visualised throughout the case narratives.

Education and experience

The findings of this study are consistent with those evidenced in some prior research, for example Collis and Jarvis (2002) and Flacke and Segbers (2005), who reported that the education of the entrepreneur had no significant influence in the management accounting systems employed; however evidence corroborating the concept that the more the business manager is educated, the more use is made of information (Holmes and Nicholls, 1988; Richbell et al., 2006; Taragola et al., 2001) is limited. Although evidence of 'in the head' calculations has provided the research with some indication that intuition could be led by education it is considered insufficient evidence to attest to this (see cases DB and B). Simpson et al. (2004) concluded that although there was clear evidence that education and training had a positive effect on the success of the business, most businesses relied heavily on prior knowledge and experience, which is in line with the findings of this research through the concept of intuition playing a key role in decision-making.

The analysis of the case narratives suggest SME decision-makers develop competencies for doing business through experiential learning (for example M's over-riding of the financial investment appraisal calculations in favour of 'gut instinct'), findings consistent with Grant et al. (2001), supporting the concept that financial management practices in small firms are far from static; the owner/manager learns to alter behaviour and change practice with experience (Deakins et al., 2001). However, evidence that systems and practices evolve and develop over time (Miller and Friesen, 1984), was not visible within the case narratives or empirical studies, however, this could be an anomalous due to the businesses chosen for the study or an exigency linked to the time scale of the study.

From the view of education and experience, it is concluded that educators need to establish what it is that small firm owner/managers need in general and how this can best be delivered confirming findings within the study of marketing by McCartan-Quinn and Carson (2003). This will include an acknowledgement of the roles of intuition and experience in planning and decision-making within SMEs. Providing owner/managers with competencies for developing their own experiential learning would also aid their ability to make stronger decisions in the future.

External influences

Owner/managers of SMEs may be expected to be fully aware of the product/service markets that their business are based in, but they may not be trained or proficient in accounting or financial management (Collis and Jarvis, 2002; Marriott and Marriott, 2000). Hence they may turn to advisers, especially external accountants, for financial management advice and perhaps wider assistance. Marriott and Marriott (2000) state that the vast majority of the owner/managers they surveyed stated they would benefit from additional or better quality information, however they were reluctant to request 'management accounting' data as it could result in increased charges. Thus the provision of financial information was viewed as a cost to the company with little benefit. Alternative sources of information, whereby the benefit is seen to outweigh the cost, are therefore required. 92% of those surveyed within this study stated they use some form of computerised accounting. All case study businesses utilise computerised (financial) accounting. This is confirmed by prior research (Sian and Roberts, 2003) which indicates this includes both an accounting 'system' as well as the construction of computerised spreadsheets. A practical consideration here is for those providing training of computerised accounting to ensure that some form of utilisation of such data within decision-making is built into the programme, highlighting benefits rather than costs. The enactment of the training in itself would highlight the availability of such data and could continue into the 'power' of using financial data to aid decision-making within any business.

Of those SMEs interviewed and surveyed who employed management accounting techniques, all employed a full time bookkeeper/accountant and appeared to employ more sophisticated techniques to aid decision-making. This corroborates findings of Davila and Foster (2004), but the 'over-ride' or 'right to veto' which was visible within the case participants (the ultimate decision being taken by the owner/manager, regardless of results) needs to be acknowledged. Moreover, 'external' influences do not appear to have had a positive/helpful effect on the businesses, for example case Z's cash forecasts. Bridge et al. (2003) state that small businesses in general do not seek out advice; Curran (2000) adducing owner/managers frequently claim that the support provider 'does not understand' the business; research undertaken by Sweeting et al. (2003) indicates that owner/managers seem unwilling to access information from the accounting profession or other advice agencies. This reluctance to accept external advice is potentially rooted in the business owners' psychology, imaginably linked to the entrepreneurial ethos or the basic concept that SME owner/managers often start their own business 'to go it alone'. However, it is a continuing finding from SME research and one that researchers indicate needs addressing and is endorsed by this research.

Following the completion of this thesis, case interviewee's were contacted to request an additional interview to discuss the overall conclusion and recommendations. The following outlines aspects from these discussions. All interviewee's agreed that education for SMEs is limited. They felt that in most cases the courses were structured around very specific areas, for example attending an accountancy course, marketing course or management. Finding a course specific to SME requirements was very difficult. All confirmed that a series of short courses, especially linking experiential learning and focusing on multi-tasking / multi-educating would potentially be beneficial, but most also commented that the time factor was an issue. Courses would have to be delivered in a very flexible way, meeting the needs of the recipient rather than the deliverer. Conjoined to this however, the majority of the owner/managers re-interviewed added that they would not feel the need to attend any further education, considering that they had learned all they were going to from their experience of running their own business. This confirmed the conclusion that the business owners' psychology is often such that they appear to be somewhat reluctant to accept external advice. When asked further about learning from their employees, all wholeheartedly confirmed that they were willing to learn from an employee but then added comments such as "why employ someone and then learn their job" (G); or "in most cases I would only take on a member of staff to do a job [like accounting] because I haven't got the time to do it myself . . . why then would I want to interfere . . . I haven't got the time to do their job as well" (M). This does lead the researcher to consider that although the owner/manager says they would learn from their staff, this may not be the actual result.

Decision-making techniques

Neo-classical theory of the firm assumes that the objective of the firm is to maximise profits, operating within a perfectly competitive market (Allen, 1957), whereas behavioural theory of the firm focuses on decision-making processes, suggesting that decisions of small firms may be guided by the objectives and behaviour of stakeholders – for example on how well the workforce would cope with change, or the reliability of equipment. It does not rely on formal appraisal techniques (Ekanem and Smallbone, 2008). Evidence through the empirical study and case narratives indicate that there is considerable variation in the financial management practices of SMEs with some owner/managers capable of adopting sophisticated approaches including full strategic and financial planning methods which is confirmed through the work of Deakins et al. (2002). In almost all of these, there is a clear indication that decisions were made with survival of the business rather than profit maximisation in view and in the majority of the case narratives, cash management appeared the main focus.

Although all five cases indicated some use of management accounting techniques in the day to day running of the business, there was little evidence of it being employed in long-term planning, which is confirmed by past research, for example the works of Berry et al. (2002) and McMahon and Holmes (1991). Certain case narratives being particularly rich in evidence of planning being performed informally; *"in the back of their minds"* or *"on the back of envelopes"* pg. 26 (McMahon and Holmes, 1991), potentially indicating that SMEs operate on a short-term, day to day basis. Their business model is flexible and highly responsive to market conditions negating the need for long-term planning.

Consideration of the uses of management accounting techniques employed has indicated that there is a link between the historical context of the techniques and its application within an SME organisation, techniques such as variable costing (78% sometime/always use) through to ABC (93% unaware). Those techniques designed outside of the working environment by academics, mathematicians and to a lesser extent economists, are not evidenced as operable techniques employed. In contrast, those originating within industry, adapted over time by engineers and technicians are clearly evidence both throughout the empirical and case narratives. This is an important finding of this research and consideration of its implications for educators, accountants and academics needs to be made.

Critical reflections on methodology and method

Having considered the accomplishments achieved through the study, it is appropriate to reflect critically on how this has been achieved and on the methodology that has been adopted. The researcher's own skills and abilities, previous research undertaken and learning are central to these aspects of the study and are therefore pertinent to the reflection.

The first consideration is regarding the research aim. Was it appropriate, realistic, and whether its issue has been addressed? Six years after proposing this area for consideration, and having explored both the theoretical literature in depth as well as undertaking the study, it is considered that it remains valid and has been addressed, although further study into this area is still deemed appropriate, especially for educators and those who support the SME community.

Additionally, considerations of the research methodology should be elicited. The three research methods; archival analysis, case and empirical studies, allow a detailed investigation bridging the different research traditions of quantitative versus qualitative research and take advantage from such a triangulated approach. A preliminary pilot questionnaire and exploratory interview were conducted in line with methodological literature (Ghauri et al., 1995; Zikmund, 1997) and previous comparable studies (Berry et al., 2002; Brierley et al., 2001b; Dyt, 2005; Gibcus et al., 2005). This exploratory phase was used for pre-testing the survey instrument; providing a crosscheck against questionnaire responses, as well as the questions and techniques considered appropriate to the face to face interviews, which improved internal validity and the interpretation of findings. The questionnaire was then issued and after various methods of distribution, sufficient responses were eventually received to make some meaningful conclusions from. This approach allows standardised data to be obtained by addressing a specific set of questions for each SME owner/manager (in the form of a questionnaire). Subsequent fieldwork was carried out in personal, face-to-face, in-depth interviews, with the survey as a basis, and complemented by archival research. These formed a series of case narratives, which allowed the researcher to identify important variables as well as allowing for further investigation into issues arising from the preliminary phase and the ability to discuss major issues pertinent to this investigation. Closer investigation into these methodological issues is considered below.

Empirical study

The pilot test utilised here was in two stages. Initially the questionnaire was discussed with the supervisors and although it was initially considered appropriate to consider the questionnaire with experts on SPSS, and although they were approached and asked for assistance, little advice was received and as such literature research was used to inform the process. This led to amendments in order to ensure that questions were constructed suitably to gain results suitable for electronic assimilation. This stage also considered the nature of the delivery of each question and any possible results. The wording of some questions was altered to elicit meaningful results and as a means of reducing unconscious misrepresentation. The pilot was then sent to five organisations for completion. These organisations had been chosen by their willingness to take part at an early stage and their confirmation that they would consider discussing the questionnaire after completion with the researcher to ensure the meanings of the questions were as accurate as possible. Once the questionnaire had been further reviewed and updated it was distributed to 1100 organisations by differing delivery methods which eventually returned a useable response of 100 surveys. Although appearing a low response rate, this is comparable with previous studies and as such achieved expectations.

The survey was constructed in order to utilise both qualitative and quantitative data collection. Most questions were close-ended, since these are relatively easier and quick to answer, thus aiding response rates. Close ended questions lead to quantitative data collection, which is collected and analysed by electronic means easier and more efficiently than qualitative data. Since this research requires both qualitative and quantitative data to be collected, open-ended questions were additionally utilised, since open-ended questions lead to more qualitative data, which is fundamentally interpretative (Creswell, 2002). However, after initial non-response, along with feedback from pilot subjects, the open-ended questions were discarded in an attempt to increase response rate. Full anonymity was granted to all respondents, not only of the questionnaires but also those of the case interviews. Statements were annotated both at the beginning and end of the questionnaire, as well as on the accompanying letter. Likewise, with the case participants, a full confidentiality agreement was made on initial contact as well as at the opening and closing of all interviews. All questionnaires returned were completed in full. Additionally, a comparable response rate, as stated above, was received for analysis. It is thus considered that the format of the questions was of a satisfactory standard, aided by the pilot study's constructive feedback.

Each questionnaire was analysed for completeness on return and considered. Not only were results of the questions considered, but also the role of the respondent, their background, both within the business and educational and the demography of the business, including its location, age, size and industry. Additionally, it was intended that any non-response to questions would be considered, although all questionnaires returned were fully completed and as such, this was not an issue. Issues from the results of the questionnaires and interviews were considered when case interview questionnaires were constructed.

The low response rate has implications on the interpretation and conceptual development of this study since it has been dependent on narratives produced from engagement with a small number of individuals. It is very clear in retrospect that the original requirements of the research to undertake both an extensive questionnaire study, along with case studies was far over-reaching the abilities of one lone individual with very limited resources to draw upon. In practice, problems may emerge, especially in research undertaken for PhD, where the time and resources are severely constrained (Scapens, 2004) and conceivably where the research is un-sponsored, although no prior research has been elicited.

As a researcher, one has to consider that there is limited control over the return of a questionnaire. However, it has been considered an important part of this research and the method, albeit incorporating lessons learnt from its process, would be utilised by the research in further future studies. Methods employed to increase response rates were considered when initiating the questionnaire part of this study. From the avoidance of complexity, using simple, conversational language, attempting to make the questions as interesting as possible, with an effective cover letter, and printing on coloured paper, it was hoped that sufficient responses would be received to enable meaningful results (Newby et al., 2003; Zikmund, 1997). However, abeyant factors limiting this research included money, (survey) sponsorship and to a lesser extent time, availability of specialists and access to some full-text literature (Carr, 1994; Zikmund, 1997). Overall, it is considered that with a comparable response rate to previous studies, with responses being full and complete, and allowing for the limited number of respondents, organisational spread and limited geographical coverage, the empirical study has provided rich data for analysis. This analysis was undertook using a variety of methods, including SPSS and visual interpretation, which has provided the research with grounded findings, conclusions and recommendations. The empirical study was also used to inform the case interview process, its analysis being used, along with the literature review and case narratives to produce a triangulation of data for the research.

Case narratives

During the planning stage, the researcher had identified a pre-used process for case study research that was considered applicable to this study. Thus, in accordance with Stoner and Holland (2004), initial contact was made either face to face or by telephone. A pre-printed questionnaire was constructed, using the findings from the empirical study as a guide. In-depth interviewing was utilised in most case interviews with the interviews being held at the owner/manager's organisation wherever possible. Qualitative researchers are interested in understanding people's experiences in context, thus the organisation, being the natural setting, is where the researcher is most likely to discover, or uncover, what is to be know about the phenomenon of interest (Maykut and Morehouse, 1994) namely the decision-making techniques used within the organisation. Being within the natural setting also attempted to ensure the interviewee was comfortable. The prospect of being interrupted was considered and weighed in light of the comfort of the interviewee; it was considered a net benefit to interviewing within the natural setting. A strict appointment and timing was deemed appropriate and in most of the case interviews this was adhered to. Where this was not so, it was due to the interviewee and not interviewer and this has been outlined in the case study findings.

A tape recorder was initially taken to interviews, where the interviewer decided in the interests of gaining an accurate and in-depth narrative; it was not used within these initial interviews. To aid consistency it was eventually decided not to tape any interview. Tape-recording is used in case study interviews as a reliable recording method (Sargeant, 2003). Maykut & Morehouse (1994) consider that the data of qualitative inquiry is most often people's words and actions and thus requires methods that allow the researcher to capture language and behaviour. The most useful ways of gathering these forms of data are participant observation, in-depth interviews, group interviews, and the collection of relevant documents. Since taping interviews was not adopted, the interviewer had less opportunity to consider the replies of the interviewee at the time of the interview and less able to observe their behaviour. Notes were taken during the interview on items to further clarify at the end of the interview or for follow-up, any behaviour that may influence answers as well as general observations were also noted. It was considered by the interviewer that results from the taped interviews would have been potentially stronger than those from the non-taped and to aid consistency of results a decision was made, after the third case study respondent was interviewed, not to tape any further interviews. All results were transcribed straight after the interview giving a richer insight into the replies than notes alone, when transcribed at a later date. However, it is acquiesced that non-taped interviews can give limited results.

The processes of identification and negotiation of participation has been a matter of prime importance with the case narratives since these have now formed the interpretation and conceptual development of this study. A larger number of participants would have added breadth, but by being able to concentrate on the narratives from the case participants, a depth of understanding rather than a breadth of information has been achieved. Additionally, the selection and participation of the respondents, the development of relationships of trust and disclosure, either from the pre-knowledge of the person or business enterprise or the development over the research time, has brought a richer narrative than one where the research participants were unknown at the outset, or were only interviewed once. Barnes (1977) stated that it takes time to become an accepted member, an 'initiated member of the tribe', given access to the secrets and as such, unable to pass on these secrets through the publication of his works. It is considered that careful choosing of narrative participants will allow the researcher access and ability to pass on these secrets quicker and it is considered this situation arose throughout this study, even allowing for the sometime appreciably ad hoc method of selection.

Case studies themselves can be seen as problematic. The researcher has a pre-conceived ideology on initiating the study and although this may change during the course of the study, it has to be considered within the findings. Even without reading prior literature in the area, a researcher can never begin a case study totally unencumbered by prior theory. Every researcher will be influenced by his own past experience, previous research, papers read and so on (Scapens, 2004). Case narratives are just that, a story of a particular event or action. These stories are affected by the researcher's notion of a reality. They are edited and reconstructed realities based around an interview and should be read as such. One concern of the researcher has been with the interpretation and ultimately the narratives. Had another researcher been present perhaps other readings of the meaning of the participant is entirely possible. Likewise, had another case participant been chosen, the outcome could have been completely different. However, it is entirely plausible to consider that had another researcher and/or other case participants been employed within this research, the results/interpretation would have corresponded with the interpretations of this researcher.

On reflection, it is considered that the case narratives, although limited in number and the time to interview each SME was limited, interesting and illuminating data was forthcoming. Conjoining the narratives with the empirical study as we as considering previous research undertaken has provided the research the opportunity to collect a varied amount of data, in a variety of formats. Limitations with the wording of questions experienced in the empirical study were diminished through the case interview since if an interviewee did not understand a question posed, or the interviewer considered a potentially biased response, for example, the interviewer could ask further questions straight away to ensure clarity of response. It has also allowed her the opportunity to reflect not only on the research question but also on the methods available to a researcher for collecting data. Further, the variation of experiences through the case narratives have provided an insight into how case interviewee's can be gained; sometimes case study opportunities appear and researchers can use easily accessible cases (Scapens, 2004) although these may not have been the most ideal situation, they did help to provide case narratives and this method will be utilised in future research by the researcher, if case interviews are required. Considering the comments of Yin (2003), case studies are definitely not a soft option, care must be taken to ensure that good planning, as well as the ability to amend plans even during the interview, are essential.

Development of researcher

Consideration of the development of the researcher is also pertinent. Any study should afford opportunities for its participants, especially for the researcher. These can be of personal, practical, intellectual and/or scholarly nature. In addition the researcher of this study has felt that the development of patience has been paramount. Through this study, the researcher's skills in conducting a critical review of the literature surrounding the relevant areas of knowledge; the understanding of different methodologies that can be employed, along with their limitations; research design; interpretative methods; conceptual development and theory building have all been developed. This was a new area of study for the researcher and the methods employed, although not alien to her, had not been previously utilised. This meant that there was a huge learning curve to be climbed before any meaningful research could be undertaken. A valued development, one which was not expected at the outset, was the development of an understanding of the historical study of management accounting. This is an area that has been of increased interest as the findings developed from this study.

Learning from the methodology of the study is as important as the findings from the cases themselves. Any future study undertaken in this area might note the problems with regard the lack of response from the questionnaire, despite numerous different methodologies being employed. This, as has previously been stated, would have offered breadth to the study, but not necessarily depth. In retrospect, had not resources been channelled into attempting to gain insight from questionnaire responses, they could have been channelled into a greater number of case narratives. These may, or may not, have revealed more truths, but they may have given more breadth to the findings. Likewise, choosing SMEs within similar industries, may have offered more opportunity to compare and contrast the narratives more. However, the nature of the owner/manager rather than the industry could also be pertinent to further studies, and as such the type of industry choice could be irrelevant.

Consideration of sourcing documents, referencing and the development of style of academic writing has also led to the researcher having more confidence in presenting materials in a style worthy of PhD publication. With a background in writing materials to be read and understood by students at a level 2 (GCSE) standard, this proved to be a huge undertaking. However, the development over the time of writing this thesis, with much support from her supervisor, the author feels that her academic style has improved greatly. This has also included the construction of diagrams of a suitable standard for inclusion in this work, including the referencing of such work to herself (European Conference of Ministers of Transport, 2000).

Finally, one area that the researcher has been careful not to discount is that of making 'truth claims'. A study on such a small scale can in not envisage achieving 'new knowledge', it can merely highlight an area for further consideration in that it has identified a gap in literature, implying a gap in knowledge and understanding. It cannot make wide claims of truth that an in-depth study could, just outline a crude understanding of a larger area for research. This could be considered a recognition of a further limitation of this study, but is being considered here as a personal development since only when a researcher undertakes a study for the first time can they appreciate first hand that even with the best planning, with in-depth literature reviews, with careful consideration, their work is only a ripple in a vast pool of research. It is hoped that this ripple will continue on into other research projects and as such will gain insight as it carries on its journey.

Limitations of the study

Limitations have been considered throughout this thesis and appear within their relevant chapter sections. However, it is important to review these, not only to indicate that they have been considered and steps taken to alleviate, but also to inform future practice. Additionally, there are general limitations which should also be acknowledged.

Contextualisation

The main limitation of this study, as has previously been considered, is the limited amount of data from which conclusions have been drawn and the area in which they have been drawn, both location and business type. This is the contextual limitation of this research study. Caution is always advised in the use and generalisation of results that emerge from any research that involves a small sample of respondents, especially when chosen from a restricted area of both communities and industry. Additionally, it is acknowledged that qualitative management accounting researchers can be prone to over-generalising their findings (Vaivio, 2008). The contextual limitation is therefore that the study has been conducted in one specific context, that of considering the uses of management accounting to aid decision-making in SMEs and cannot automatically be assumed to be valid in others.

The limited number of case participants and the restricted number of responses to the empirical study need to be considered as a potential limitation in this study. Meaningful results can be achieved by such a limited number of participants; however it is impossible to generalise from the results. Lincoln and Guba (1985) stated the only generalisation is; there is no generalisation. It is considered that this study, with one hundred questionnaire responses and five case participants is limited and the transferability of the findings from one context to another and the degree of comparability to different contexts is a matter for further research although it should be acknowledged that prior research has been aligned wherever available to the results of this study. However, the sparseness of previous research into this area also needs mentioning. Few researchers have considered this an area for study and thus the availability of other, like studies negates the opportunity for some comparison of findings. Little research has been published on accounting and financial management in SMEs and there is little understanding as to whether accounting and financial innovation is associated with improving performance (Sweeting et al., 2003).

Additionally, business owners who are weaker in the research areas of this study may not have completed the questionnaire therefore the findings may be biased as a consequence (Dyt, 2005). The converse can also be true. As a researcher, especially when sending out questionnaires for completion, there are many limitations; it is not only difficult to target certain groups, there is no guarantee that whomever you send to will respond and if they do respond, that their responses will be accurate, this potential lack of accuracy arriving out of either unconscious or conscious misrepresentation, or both.

Any attempt by researchers to reach some depth of understanding of how SME entrepreneurs operate require research methods that take account of the specific characteristics of SMEs and recognise that the research will be influenced by the relatively dynamic business environment in which they exist. Such research needs to recognise the importance of gaining an understanding of the phenomena. That is, understanding the 'process' behind the actual decisions being taken in the context of the inherent characteristics of entrepreneurs (Grant et al., 2001). Additionally, SMEs, mainly due to their close link with their owner/manager, do not behave like a homogenous group (Gibcus et al., 2005). Sparrow (1999) suggested that insights into thinking/actions of participants necessitate a variety of discourses. The semantic understanding, personal experiences, skills, tacit feel and unconscious interpretations of participants necessitate different elicitation approaches. Wherever practicable, this has been undertaken however, this research, by its very nature, is flawed by the limitations of its research context. Despite this, when results are aligned to prior research, they do show correlation and as such are deemed accurate in so much as this limited research can derive.

Propositional

The research methods utilised in this research reflect a compromise between the ideals of research methodology and what is practically possible within the context of both the research environment and the resources available to the researchers resource constraints including limited research funds, researchers time and constrained management access time and access quality (Stoner and Holland, 2004). Literature reviewed, cases selected, undertaken and analysed, questionnaires constructed, distributed and considered have all been based upon the individual researchers' proposition. From the initial concept for this research proposal through to this concluding chapter, the researcher has guided the journey, making choices based on her own suppositions and as such, these will have ultimately led to conclusions being drawn that may differ from those had another researcher considered the same proposal. In its own way, this propositional aspect of the research is both strength and limitation. The process has offered an insight into the uses SMEs make of management accounting within their decision-making, based upon the choices made throughout this research by the researcher. Had an alternative researcher been employed, alternative research literature, methodology, case participants or questionnaire recipients been used, an alternate reality may have been forthcoming, although the basic core conclusions would have potentially be drawn. As such the interpretations offered are merely propositional, based on the creative and inductive process of the researcher, albeit with a lengthy, considered and intensive interpretative process. However, alternate interpretations may be possible and conclusions drawn are not definitive but are contextualised in the limitations of the study undertaken, with an acknowledgment that alternate meanings, theories and conclusions may be constructed.

Temporal

Time is a limited resource, additionally since every research has a beginning and an end; the temporal aspect of this study also needs to be considered as a limitation. A lot of time was utilised in the development of the questionnaire, time which could have been utilised in selecting additional case participants, if the problems with the empirical study been known at the outset. However, hindsight is something that no researcher has, with every research being different to previous ones, even when the target base may appear to be the same (i.e. SMEs in this case), or the same researcher is used. Ensuring that issues such as the response rate and the method of distribution are clearly articulated within the study can assist in future studies and can be as illuminating as the data collected and analysed.

It is difficult, if not impossible for academic researchers to get close enough to entrepreneurs to glean in-depth knowledge of a particular phenomenon within an individual enterprise without total immersion over an extended time period (Grant et al., 2001). Time has limits the amount of immersion the researcher has been able to achieve to gain valuable insight into the decision-making processes of the owner/managers, however this has somewhat been mitigated by the selection of the participants. Additionally, since the empirical study gained responses from 100 SMEs, it allowed for a wider collection of data, bringing breath rather than depth to the study.

Additional considerations

This research has taken place during a fairly turbulent economic environment. Data from both the empirical study and case narratives had already been collected and interpreted before the 'credit crunch' aspect of 2008-9. The period before however, when the data was being collected was still a relatively unique period; economic fluctuations and a growing world-market place influence being felt by all businesses including SMEs. This temporal aspect is not unique to this research and but still requires acknowledgment. Every research project will be conducted during 'individual' social, economic and political occurrences and the social phenomenon cannot be replicated by one study to compare it with another. Factors influencing the research participants will change with the plethora of influences that each time frame impacts upon them. Each is as such unique, this study being no different and should be seen as 'grounded in time'. However, the act of acknowledging the temporal aspect, along with the consideration that no research is immutable is considered by the researcher to be an aspect of diminishing this limitation, along with the debate that since the research proposal considers a broad aspect of SMEs uses of management accounting techniques to aid their decision-making, which it is envisaged the changing environment has little impact upon, the results from this work are considered moderately transferable to other, similar work.

Usefulness of the approach used

Data received from both empirical study and case interviews proved sufficient to deduce conclusions about the usefulness and use of management accounting within SME owner/manager decision-making. This data could also be corroborated with previous research in the area through the use of continuous literature searches. Considering the limitations on this study, including financial constraints, time factors, being non-sponsored and access to data subjects, it is apperceived the approach was both enlightening and sufficient to make meaningful interpretation. Over the timeline of this study, technology has become more readily available which would, it is considered, make certain aspects of the research more manageable, for example the use of document sharing and data collection through on-line surveys. Even literature reviews are facilitated through the use of on-line search engines and on-line publications rather than manual data searches in libraries.

It is considered that, given the technology at the outset of this research, coupled with the researcher's limitations, the methodology proved useful, however, it is acknowledge that differing techniques (mainly electronic) could now be employed which may expedite the research, allowing for additional data to be gathered and analysed, resulting in richer evidence from which to draw analysis and conclusions.

Areas for further research

Flint and Shaw (1981) stated that accounting research is not the pursuit of some ultimate truth but is concerned with the increasing the knowledge and understanding in order to improve and extend the practice of accounting. Absolute theoretical truth is an unobtainable ideal but is the ultimate aim of all science (Ryan et al., 1992) and like most previous research undertaken, this research project has resulted in almost as many questions being asked as it has answered questions (Govender, 2000), there being numerous opportunities for further research resulting from the findings. It is hoped that this thesis will stimulate further research into the potential issues identified and outlined both within the chapters above and summarised below:

It is considered that this study, with one hundred questionnaire responses and five case participants is limited and the transferability of the findings from one context to another and the degree of comparability to different contexts is a matter for further research although it should be acknowledged that prior research has been aligned wherever available to the results of this study. Albert Einstein stated *"the formulation of a problem is often more essential than its solution"* pg. 37 (Zikmund, 1997), thus it is the remit of any researcher to seek the solution only after identifying the problem. This research has highlighted a correlation between the historical contexts / background of a management accounting technique and its use within an SME owner/manager decision-making process but this is far from a corroborated truth and as such only further research, with larger samples, utilising other research methodology can fully confirm or refute this claim. A further area for future consideration aligned to this is the concept of the techniques utilised within SMEs as being instruments of simple logic. The historical link is still a valid one, since the 'inventors' of the initial costing techniques were employees of the new formed businesses born within the Industrial Revolution and as such had no previous business models to mould their new enterprises on. These technicians would have worked from a simple logic view.

A potential finding of this research, that management accounting doesn't need specialists or fancy computer systems to be employed in SMEs - what it does need is good leadership and experience of those in charge, could also prove a worth area for future consideration. Although the connection between the age of the business, the experience of the owner/manager and their use of financial computations within their decision-making was evidenced, for example within the case narratives in a form of tacit knowledge (DBs calculation of sales prices), this did not manifest in the empirical research. This is potentially due to the limitations of the study, for example the low sample size or the complexity of uncovering this type of truth from the empirical methodology and it is considered that further research be undertaken in this area to corroborate or refute these premises.

The complexity of exposing truths concerning issues such as unconscious misrepresentation, terminology misconception and the (basic) understanding of the question being asked is also a limitation of research; not just evidenced within such research as questionnaires and case interviews, but can also manifest itself in the literature review. Wherever possible, results from the empirical study were explored further within the case interviews as well as all research being mapped to prior research, acknowledging differences in research bases. Notwithstanding, it was still considered essential to highlight within the findings variations of such techniques usage as the master budget, as it was the linkage of certain techniques with their historical background (break-even, for example). However, it is considered that further investigation into this area is appropriate. This would aid correlations between historical background and current usage; age of the business and use of more sophisticated techniques as well as assisting educators and SME mentors in being able to address knowledge deficits as well as considering the usage of techniques grounded in the application of common sense.

The entrepreneurial characteristics of vision and creativity will often provide idea stimulation for further research (Grant et al., 2001). On first meeting Z (1st case participant) and DB (3rd case participant), both show signs of thoroughly understanding the day to day business of their firms; both have intense product knowledge and a vision for the future. However, after discussing decision-making techniques, they suddenly appear completely different people, with entirely different business acumen, cognitive skills and abilities. This could be seen as the entrepreneur factor. M (4th) and B (5th) both have the support of experts to aid in the calculation of financial data to aid decision-making techniques, both opting to either take the advise but then 'over-rule' it (Ms long term decision appraisal) or not utilise it (Bs quotation / job costing). Throughout the examination of the case participants, the part entrepreneurial spirit had to play within the decision-making of the SME was evidenced and acknowledged. However, from the initial concept stage, the psyche of the owner/manager had been deemed outside the scope and as such, although acknowledged, was not fully investigated. This was due to the consideration that exploration of the impact the entrepreneurial spirit had on SME owner/manager decision-making was a research area in itself and as such is highlighted here as an area for future study. Potentially conjugated to the entrepreneurial spirit is a reluctance to accept external advice. Whether this is a truth is a continuing finding from SME research and one that researchers indicate needs addressing and is endorsed by this research.

With regard to methodology, one of the main limitations of this research was the low response rate. Methods, such as alignment to prior research and distributing additional questionnaires utilising differing methods were employed to gain further responses, however it was highlighted that one potential impediment to response was the fact that the questionnaires were un-sponsored. Furthermore, when attempting to align responses to industry sectors it became clear certain sectors are over represented in relation to their size in the overall business framework. Although the final riposte of 9% appears to be on a par with (potentially) sponsored studies, it is still considered that an undertaking of examining responses by such aspects as sponsored v un-sponsored; concurrent with other aspects such as sector, size, and age. Conjoined with this would be a consideration of aspects such as number of questions asked, required response mechanisms (yes/no or scaled responses, for example), and technological issues (on-line survey's rather than paper-based postal, for example). This study could then offer an insight into differing techniques and their likely response rates, offering future researchers a more informed, hindsight approach to base their methodological decisions upon.

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Appendices:

Appendix 1: Ethical, legal and principles of good practice consideration

Before conducting this research ethical and legal aspects in conjunction with principles of good practice were considered. These were revisited throughout the research to ensure that the concepts of honesty, excellence, integrity, co-operability and accountability were maintained. Training and skills development were undertaken throughout the research and all procedures were undertaken safely and with dignity of researcher and research subject being paramount. Although not available at the time, the current Recommended Checklist for Researchers (www.ukrio.org, 2010) is utilised here to examine their coverage.

1 Does the proposed research address pertinent question(s) and is it designed either to add to existing knowledge about the subject in question or to develop methods for research into it?
Yes. The research is being undertaken to consider the use of management accounting within SMEs to aid decision making. Very little previous research has been undertaken in this area indicating that this research may be able to not only add to existing knowledge but also to be utilised to consider methods of research appropriate in the area of SMEs.

2 Is your research design appropriate for the question(s) being asked?
Through use of the literature review a framework was developed which led the research into the collection of data from a variety of sources. This is a recognised design, appropriate for this PhD study.

3 Will you have access to all necessary skills and resources to conduct the research?
It is considered that at the outset of this study, the researcher did not have all of the qualities of a PhD researcher. She thus attended various workshops and self-developed her skills, striving for excellence in her work.

4 Have you conducted a risk assessment to determine:
a whether there are any ethical issues and whether ethics review is required;
b the potential for risks to the organisation, the research, or the health, safety and well-being of researchers and research participants; and
c what legal requirements govern the research?
Yes and this was an on-going process. There were certain potential ethical issues involved in the case research since the researcher had prior knowledge of some of the firms. These have been acknowledged and mitigation has taken place. Confidentiality was maintained throughout by the use of codes for names, with all research data being kept safely and destroyed after use thus complying with the Data Protection Act.

5 Will your research comply with all legal and ethical requirements and other applicable guidelines, including those from other organisations and/or countries if relevant?
Yes, see above.

6 Will your research comply with all requirements of legislation and good practice relating to health and safety?
Yes, research undertaken in safe conditions throughout.

7 Has your research undergone any necessary ethics review (see 4(a) above), especially if it involves animals, human participants, human material or personal data?

A review was undertaken with the supervisor of the study and it was considered that there was no conflict of interest and as such a formal review was not required. Recognition of prior relationships was made within the study.

8 Will your research comply with any monitoring and audit requirements?
The research undertaken was closely monitored throughout by the University supervisory team.

9 Are you in compliance with any contracts and financial guidelines relating to the project?
Not applicable – no contracts have been taken out with regard to this project.

10 Have you reached an agreement relating to intellectual property, publication and authorship?
No.

11 Have you reached an agreement relating to collaborative working, if applicable?
No collaborative working agreements made.

12 Have you agreed the roles of researchers and responsibilities for management and supervision?
University guidelines are in place which clearly outlines the responsibilities and roles of all parties.

13 Have all conflicts of interest relating to your research been identified, declared and addressed?
Yes, see above with regard to ethical considerations.

14 Are you aware of the guidance from all applicable organisations on misconduct in research?
As far as I am aware, yes.

When conducting your research:
1 Are you following the agreed research design for the project?
Yes, although this has been adapted as the research progressed and issues occurred which required the design to be adapted.

2 Have any changes to the agreed research design been reviewed and approved if applicable?
Yes, see above. These were discussed and agreed with University supervisory team.

3 Are you following best practice for the collection, storage and management of data?
Data Protection requirements have been considered, along with coding for confidentiality.

4 Are agreed roles and responsibilities for management and supervision being fulfilled?
Yes, throughout the research.

5 Is your research complying with any monitoring and audit requirements?
University requirements are being complied with throughout.

When finishing your research:

1 Will your research and its findings be reported accurately, honestly and within a reasonable time frame?
Yes. Potential conflicts and limitations have been acknowledged and actions taken to mitigate their influence on the research data. The researcher has taken utmost care in ensuring the accuracy of data and results and has acknowledged the contribution of the work of others. The research has been undertaken within a reasonable time frame.

2 Will all contributions to the research be acknowledged?
Yes, including other researchers' prior work which has been used as comparison, either when corroborating this research or not.

3 Are agreements relating to intellectual property, publication and authorship being complied with?
Not applicable.

4 Will research data be retained in a secure and accessible form and for the required duration?
Yes.

5 Will your research comply with all legal, ethical and contractual requirements?
Yes.

Appendix 2: Reflection

1. Selection of participants

Empirical study: The receipt of 100 usable questionnaire responses was one of the biggest challenges of this research. Varied methods of distribution were employed and at times the researcher was frustrated by the lack of responses received. It was only when comparing her sample with those of other studies, that she realised that by employing a variety of techniques, and persevering, a sample comparable with previous studies, often studies which received backing/sponsorship from recognised bodies, for example CIMA, had been received. She had considered initially whether to limit her study to the Midlands area, however the methods employed at gaining this sample would not have been available had the survey required a more national coverage. Likewise, the heterogeneity of SME owner/managers, along with other influences on their actions, for example the entrepreneurial spirit, education, and external influences, meant that results received from participants within the Midlands, although not conclusive, could indicate a potential pattern for the whole of the UK.

Why 100? The management of data received could be managed easier with 100 responses since this automatically transferred into percentages. It was not too small a sample that no discernable patterns would emerge, nor too large that any data handling, especially for one person, because unwieldy. 100 also meant that each individual response could be studied without the use of extrapolating programmes, i.e. by hand/eye, thus attempting to bring more meaning to the results.

Case participants: Again, convenience sampling potentially limited results, but it was considered that by using owner/managers or accountants of SMEs that I already knew, certain barriers to entry would be broken, likewise since some had a working knowledge of myself, it was considered they would be more open to discussing sensitive issues, like their methods of cash flow monitoring or even pricing structures. Five cases were identified as sufficient since the purpose of these narratives was not to seek information but to seek to confirm and verify information already gathered from the empirical study. In addition, the case narratives were used to delve deeper into issues that a written survey could not elicit, for example an actual explanation of how products are costed, or how investment decisions are made. A range of businesses types and background of case participant was achieved, thus giving a richer source of data. Good notes were taken during the interview – although it is acknowledge that tape recording would have achieved potentially better data recording, the transcribing of the notes straight away, with additional comments made during this process meant that a full and accurate record of the interviews was achieved. It was also considered that had a tape recorded been employed, some of the narrative may have been limited since many do not wish for their full reasoning's to be so recorded.

Overall, it is considered that as researcher, I achieved my aims of gaining a manageable empirical sample, as well as a cross-sectional case participation, both aiding my search for knowledge and understanding. What have I learnt? I have a better understanding of questionnaire design and the data collection methods available. I understand better how even with what purports to be a low response, meaningful conclusions can be drawn. Would I do anything differently? I would look for some sort of financial backing and perhaps look towards employing a more web-based distribution method, one which would be completed on line with responses directly added to a data collection repository. This technology was not available when I first started, but technology, like Google's shared document system, this is now becoming readily and freely available to all, not just researchers.

2. Role of the researcher

Being a sole researcher is a daunting experience. There is no facility for the cross fertilisation of ideas, no-one other than the University supervisors to read your work to-date, to offer support, or to stop you as you go off a track which, albeit interesting, is not furthering your knowledge in the allocated area.

As a researcher, I maintained a distance from the case narratives businesses. Knowing the person being interviewed in most cases meant that I had a good rapport with them from the start and this could have also distracted from the study. I thus aimed to ensure that all those being interviewed would have full confidentiality, and I would not ask any direct accounting questions, i.e. how is your cash flow (are you overdrawn)? Or what is your profit margin? These would have been too sensitive, but at the same time would not have increased knowledge in the area being studied.

Would I change anything? With regard to my role, no. I feel that knowing some of the case participants meant that I gained some interesting insights into their business methods. I also had the chance to corroborate these findings with other business which, although known to me, had no real direct contact with me prior to the interview. A different approach may have elicited different results, for example had I chosen to immerse myself in a participants business from the inside, maybe gained access to the decision making 'materials' – for example the calculations, however, the limitations of a part-time researcher would probably have proved too much and the immersion could only have been for a relatively short time, which may not have elicited any more data than an interview, potentially with a second after a short time, would have achieved. This is one area for further study that could be undertaken, possibly by a sponsored study, where potentially access would be easier and time allocation would be more forthcoming.

3. What is the outcome of this research?

Personally, I feel the main outcome is the potential link between the background of a management accounting technique and its background / historical context along with the evidence that techniques are adapted by SME owner/managers to fit their requirements or those of the business, for example the payback becoming a more cost v benefit techniques, acknowledging non-financial items potentially more than financial aspects.

Additionally, there appears to be a connection between the age of the business, the experience of the owner/manager and their use of financial computations within their decision-making. This was evidenced within the case narratives in a form of tacit knowledge, knowledge which is only known by an individual and that is difficult to communicate to the rest of an organisation. The concept of how DB, for example, calculated his prices – as a person he could teach how to do 'the textbook' approach, but in reality he couldn't explain how he did it for his business, but when inputting his 'internal' knowledge onto a spreadsheet, they proved accurate.

One question that was posed to me, which I couldn't in honesty answer, was "does management accounting create better decisions?" When I started this study, I would probably have said yes, the use of management accounting techniques must aid decision-making, otherwise, why use it. However, considering the results of both empirical and case interviews, I would have to say that it is not the management accounting technique per se that is useful to the decision maker but the process that they go through before making a decision. If having a formal system meant making an owner/manager think about a decision, then probably, in most cases, yes, a better decision is forthcoming – not necessarily due to the 'findings' of the management accounting technique being empoyed but by the time the owner/manager may use to consider those findings and the decision overall. However, this does not take into consideration the other influences on the decision maker – for example the entrepreneurial spirit. DB did not have a formal system for setting prices, but had enough past experience to be able to adjust figures 'in his head' which matched a (later constructed) spreadsheet. M, who utilised management accounting techniques, 'overruled' the decision, and proved right. B, who like DB considered pricing 'in his head' proved accurate on analysing budget to actual.

4. Areas for further study

Like many pieces of research, I feel that although this work has made valuable contributions to knowledge but it has opened up even more avenues for research. Research into entrepreneurial spirit, for example, may be able to consider the role of intuition on decision-making. This would not necessarily be within an accounting field of study but could link with psychological issues of the owner/managers own persona. Similarly, is intuition another word for past experience and/or is it based on a personal educational background, or are some owner/managers 'born' with an entrepreneurial spirit which regardless of their educational background or past experiences leads them to making decisions in a certain way?

An investigation into whether sponsored research gains a higher response rate or even a more accurate response rate could be undertaken. Additionally, a consideration of whether research into 'local' or regional SMEs can be considered as indicative of the whole of the England, or even UK would aid interpretation into further studies on the SME population, including such aspects as whether research needs to be on a national basis to get more meaningful results. In a similar vein, does sector participation alter any interpretation of research data? If manufacturing businesses had replied would these have had any significant difference to those of, say retail outlets?

The use of tacit knowledge or potentially intuition within an SME – do owner/managers use management accounting techniques, but since they don't have to write anything down, is there no evidence? The data which indicated that the 'master budget' was not utilised within the SMEs within the empirical study for example, was it in fact part of an owner/managers tacit knowledge, was their an issue with terminology, or is it fact not utilised?

Personally, I would like to further consider the concept of satisficing capital investment appraisal systems, whereby owner/managers decide on and pursue a course of action satisfying the minimum requirements to achieve a goal. This was an area highlighted within the literature research, the empirical study, and considered further within the case narratives. This would drawn on intuition as a decision-making tool as well as allowing me to further consider techniques constructed by technicians working within industry through to the academic and mathematician led techniques cited within the educational texts.

Appendix 3: Questionnaire base for case interviews

Name of business:

Location:

Owners details:

Details of industry/products/services:

History:

Date of interview: Start: Finish:

Venue:

Members present:

- ❑ When pricing a product, what strategies are employed?

Marginal / absorption / ABC .....

Does business identify FC VC?

- If a product is within a competitive market, does this have any effect on your pricing?

- Do you have different strategies for products and services?

- Do you use a cash flow forecast?

Example?

Does anyone get a copy?

Request or required?

Set format?

- If yes, do you monitor your cash flow forecast?

- If no why not?

- Do you have any mechanisms for checking that a product isn't under-priced?

- If you are thinking of investing in a new project, would you use any calculations to help with your decisions?

Payback
ARR
NPV

Cost of capital?

- Do you making any calculations in respect of the variances between your budget figures and the actual figures?

Appendix 4: Questionnaire letter

Fiona Williams
[redacted]

Questionnaire on Decision Making

I am currently researching the ways that small and medium sized businesses use financial data to help in their decision making processes as part of my Birmingham City University PhD thesis. Part of this process will be to consider the answers to the attached questionnaire. The questions can be answered by anyone who would have a working knowledge of the decision making process, for example an owner/manager, accountant or bookkeeper. Later I am going to be interviewing a selection of businesses to gain further insight into their processes and would be grateful if you would kindly indicate whether you would be interested in further participation of this research (there is a box at the end of the questionnaire).

Completion of the questionnaire if completely confidential, as is the interview process. All data will be recorded with no link to your business. Completed questionnaire will be securely filed and will not be used for any other purpose. Once the research has been completed they will be destroyed by shredding.

I would be very grateful if you could forward this questionnaire to a relevant member of your organisation to complete and send back to me. I can send an electronic version if this would be preferred. If you do not wish to participate in the interview, I would be grateful if you would still complete the questionnaire.

If you would like any further information about the research being undertaken or the processes involved please do not hesitate to contact me.

Thanking you in anticipation of your kind assistance in this matter,

Fiona Williams

fwilliams@sutcol.ac.uk

Appendix 5: Questionnaire

All answers will remain confidential and will only be used as part of this research.

Business name and address (optional): ______________________

____

____

1 What is the businesses industry type?

Manufacturing	
Retailing	
Service sector	
Wholesaling	
Other (please state)	

2 What best describes your business area?

Accounting	
Banking, finance, insurance, business services and leasing	
Building repairs (inc. gas, plumbing and maintenance)	
Catering	
Clothing industry	
Construction	
Consulting	
Distribution and transport	
Supermarket	
Electronics	
Engineering	
Entertainment industry	
Beauty (inc hairdressing, tanning, massage)	
Hotel	
Specialist food (inc butcher, baker, greengrocer)	
Fast food	
Software and computing	
Vehicle industries (repair and servicing)	
Vehicle industries (retail)	
Other manufacturing industries (please detail)	
Other services (please detail)	

3 What is the turnover per annum (before tax)?

Below £1.5m	
Between £1.5m and £7m	
Between £7m and £35m	
Over £35m	

4 How many full time members of staff do you currently employ?
(Or full time equivalent)

None	
Below 5	
Between 5 and 10	
Between 10 and 20	
Between 20 and 30	
Between 30 and 50	
Between 50 and 75	
Between 75 and 100	
Between 100 and 150	
Over 150	

5 How long has the business been running?

Less than 1 year	
Between 1 and 3 years	
Between 3 and 5 years	
Between 5 and 10 years	
Between 10 and 15 years	
Over 15 years	

Which of the following do you prepare within the business and how frequently?
(Please add frequency - e.g. monthly, half yearly, ...)

		Prepare Y/N	Frequency
6	Profit and loss account		
7	Balance sheet		
8	Cash flow forecast / Cash budget		
9	Bank reconciliation statement		
10	Ratio analysis (of financial accounts)		
11	Variance analysis (of cash budget / cash flow)		

12 Which of the following best describes how you calculate the price to charge for a product?

How much it costs to buy plus a certain percentage	
How much it costs to buy plus a bit	
How much it costs to buy plus a percentage of the overheads	
The full cost to make it plus a set amount to cover overheads	
However much our competitors charge	
A little less than the competitors price	
A little more than the competitors price	
Each job is individually priced and charged at full cost, including overheads plus a set profit margin	
Each job is individually priced and charged at full cost, including overheads and estimated profit	
A standard cost is calculated which includes fixed and variable costs and overheads. A set profit margin is added.	
The prices are set by .... *(please add)*	

13 Who calculates the product price?

Owner	
Accountant (external)	
Accountant (internal)	
Management accountant (internal)	
Bookkeeper (external)	
Bookkeeper (internal)	
Externally set by ... *(please add)*	
Internally set by ... *(please add)*	

14 Does the business consider break-even points as part of its goal setting? Yes No

15 Does the business consider margin of safety? Yes No

16 Does the business use a coding system for its revenue and expenditure? Yes No

17 Which of the following best describes the process if the business was considering investing in capital expenditure?

Would just go out a buy it	
Would look around for the best deal to buy it	
Would consider alternatives, like leasing, HP, ...	
Would calculate the alternatives, looking at the payback of the investment	
Would calculate the alternatives, looking at the return of the investment	
Would consider the time value of money in the decision	
Would calculate the net present value of each alternatives	

	Yes	No
18 Would consider both financial and non-financial aspects before making a decision		

Consider each of the following. Please rank each statement, 1 being low priority/disagree; 5 being high priority/highly agree.

The business uses financial statements ...	Low High				
19 To see how profitable the business is	1	2	3	4	5
20 To consider the bank balance	1	2	3	4	5
21 To see what the business is worth	1	2	3	4	5
22 To help in decision making	1	2	3	4	5
23 To help motivate the staff	1	2	3	4	5
24 To be able to set appropriate goals and targets	1	2	3	4	5
25 To compare the business with its competitors	1	2	3	4	5
26 To compare performance from month to month	1	2	3	4	5
27 To compare performance from year to year	1	2	3	4	5
28 To meet our legal requirements	1	2	3	4	5
29 To show the bank how we are performing	1	2	3	4	5
30 To show investors how we are performing	1	2	3	4	5
31 To show potential investors how we are performing	1	2	3	4	5
32 To show others how we are performing	1	2	3	4	5
33 To price our products	1	2	3	4	5
34 To help make the business more efficient	1	2	3	4	5

35	To benchmark	1 2 3 4 5
36	They are prepared but not used	1 2 3 4 5
37	They could be used more than they are	1 2 3 4 5

Consider the following techniques/descriptors. Please rank them from inappropriate (1) through to regularly use (5). If you are unaware of their use, please circle 0.

38	Transfer pricing	0 1 2 3 4 5
39	Variance analysis	0 1 2 3 4 5
40	Capital investment appraisal	0 1 2 3 4 5
41	Product profitability analysis	0 1 2 3 4 5
42	Master budget	0 1 2 3 4 5
43	Break-even analysis	0 1 2 3 4 5
44	Opportunity costing	0 1 2 3 4 5
45	Limited factor analysis	0 1 2 3 4 5
46	Simplex	0 1 2 3 4 5
47	Product mix	0 1 2 3 4 5
48	Regression analysis	0 1 2 3 4 5
49	Activity based costing	0 1 2 3 4 5
50	Total quality management (TQM)	0 1 2 3 4 5
51	Just in time (JIT)	0 1 2 3 4 5
52	Balanced scorecard	0 1 2 3 4 5
53	Benchmarking	0 1 2 3 4 5
54	Economic value added (EVA)	0 1 2 3 4 5

Thank you for your time in completing this questionnaire. The last question I would like to ask is if you would kindly tell me who has completed this survey?

Name:
Position in business:

Qualifications:

Training:

Would you mind being contacted in the future if further clarification is required of your answers?

Yes	No

Would you mind being contacted in the future for an interview session?

Yes	No

If you would like further information about this study, please email the researcher:

Fiona Williams fwilliams@sutcol.ac.uk

Thank you

Appendix 6: Deleted questionnaire questions

4 ~~What is the approximate balance sheet value?~~

~~Below £1.5m~~
~~Between £1.5m and £7m~~
~~Between £7m and £30m~~
~~Over £30m~~

~~How much has the business grown since it was formed?~~
~~*(Using the turnover, balance sheet value and number of staff employed as a guide.)*~~

~~Stayed about the same~~
~~Grown slightly~~
~~Grown about 50% bigger~~
~~Doubled in size~~
~~Slightly smaller~~
~~About half the size~~

~~Does the business employ an accountant and/or bookkeeper?~~

~~*Please tick those that apply and if known, please add their qualifications (or the letters they use after their name):*~~

~~An external accountant~~	
~~An internal accountant~~	
~~An external bookkeeper~~	
~~An internal bookkeeper~~	

~~*Is the system?*~~

~~Computerised accounting system~~
~~Manual accounting system~~
~~Both are used~~

10 ~~Who prepares the financial statements and who uses them?~~
~~*(please also describe their main use within your business)*~~

	~~*Prepared by:*~~
~~Profit and loss account~~	
~~Balance sheet~~	
~~Cash flow forecast / Cash budget~~	
~~Bank reconciliation statement~~	
~~Ratio analysis (of financial accounts)~~	
~~Variance analysis (of cash budget / cash~~	

~~flow)~~

~~*Used by / main use*~~

~~Profit and loss account~~	
~~Balance sheet~~	
~~Cash flow forecast / Cash budget~~	
~~Bank reconciliation statement~~	
~~Ratio analysis~~	
~~Variance analysis~~	

~~14~~ ~~Which best describes the costing process?~~

~~Identifies the fixed costs of a product~~	
~~Identifies the variable costs of a product~~	
~~Identifies materials costs~~	
~~Identifies labour costs~~	
~~Identifies direct expenses~~	
~~Identifies indirect expenses~~	
~~Allocates overheads to departments~~	
~~Apportions overheads to departments~~	
~~Uses absorption/full costing~~	
~~Uses marginal/variable costing~~	
~~Uses activity based costing~~	
~~Uses direct labour hours~~	
~~Uses direct machine hours~~	
~~Other - please describe~~	

20 ~~The educational background of the~~ ~~**main decision makers**~~ ~~is *(please tick all that apply, to the best of your knowledge).*~~
~~*Please add separate sheet if required*~~

	~~No formal training~~	~~On-the job training~~	~~Has been in business before~~	~~Informal training (please describe)~~	~~Formal training (please add qualifications if known)~~
~~Owner~~					
~~Owner~~					
~~Owner~~					
~~Manager~~					
~~Manager~~					
~~Manager~~					
~~Accountant~~					
~~Bookkeeper~~					

~~Please add any others who apply~~

Appendix 7: BERR SME figures for 2007

			Size (number of employees)			
	Businesses	(=100%)	None [1]	1 - 49	50 - 249	250 +
	All industries	4,679,080	74.0	25.3	0.6	0.1
A.						
B	Agriculture, Hunting and Forestry; Fishing	168,495	61.5	38.4	0.1	0.0
C,	Mining and Quarrying, Electricity, Gas and Water					
E	Supply	13,025	90.8	7.8	0.8	0.5
D	Manufacturing	348,250	69.2	28.4	2.0	0.5
F	Construction	978,065	85.4	14.4	0.2	0.0
G	Wholesale and Retail Trade; Repairs	562,030	55.9	43.1	0.8	0.2
H	Hotels and Restaurants	149,765	22.4	76.0	1.4	0.2
I	Transport, Storage and Communication	297,550	84.5	14.9	0.5	0.1
J	Financial Intermediation	67,275	70.0	28.5	1.1	0.5
K	Real Estate, Renting and Business Activities	1,130,890	72.5	26.9	0.5	0.1
M	Education	162,540	91.3	8.4	0.2	0.1
N	Health and Social work	273,570	80.2	18.9	0.8	0.1
	Other Community, Social and Personal Service					
O	Activities	527,625	82.5	17.2	0.2	0.1

1. "With no employees" comprises sole proprietorships and partnerships comprising only the self-employed owner/manager(s), and companies

Source: BERR Enterprise Directorate Analytical Unit, figures for 2007

(BERR, 2009)

Appendix 8: Research responses

		Response						Businesses within sector			
SIC	*Sector*	Grey	Yellow	Cream	White	Total %	SIC %	1	2	3	SME
D	Clothing industry	3	1	1	0	5					
D	Other manufacturing industries	0	5	3	1	9	14	5.2%	2.1%	0.1%	7.4%
F	Building repairs (inc. gas, plumbing and maintenance)	4	2	3	2	11					
F	Construction	0	0	3	0	3	14	17.9%	3.0%	0.0%	20.9%
G	Supermarket	3	4	2	1	10					
G	Specialist food (inc butcher, baker, greengrocer)	2	5	4	2	13					
G	Software and computing	1	3	2	0	6					
G	Vehicle industries (repair and servicing)	0	4	2	0	6	35	6.7%	5.2%	0.1%	12.0%
H	Catering	1	3	1	1	6					
H	Hotel	0	2	0	0	2					
H	Fast food	0	4	1	0	5	13	0.7%	2.4%	0.0%	3.2%
I	Distribution and transport	0	0	2	0	2	2	5.4%	0.9%	0.0%	6.4%
J	Banking, finance, insurance, business services and leasing	1	3	1	2	7	7	1.0%	0.4%	0.0%	1.4%
O	Entertainment industry	2	2	1	1	6					
O	Beauty (inc hairdressing.	4	3	0	0	7					

Appendix 9: Previous research results

	Zaman and Gadenne	Graham, Lyall & Puxty	Drury & Tayles	Drury & Tayles	Brierley, Cowton, & Drury	Sweeting, Berry & Goto	Najak & Greenfield	Berry et al
	2001	1992	1997	1997	2001	2003	1994	2002
			Capital inv appraisal	financial accounting mentality				
ROI	44%							
NPV	13%		35%*					7.10%
IRR	13%		35%*	most widely used				4.30%
payback	21%		most widely used	most widely used				11.40%
ARR			21%					2.90%
none	35%							
Investment decisions						38%		
"Intuitive management judgement"			2nd ranking					
computerised accounting system	80%							
Budgetary control system		97%				50%	34%	
Standard costing		87%						
Product costs				79%	58%			
Product costs (sometimes)					32%			
ABC				4%	5%	28%		26.40%
Life cycle costing								5.00%
Break even						40%		39.30%
			* either NPV or IRR used					
	200 SMEs Queensland	500 companies	866 UK manufacturing		38 management accountants		200 manufacturing businesses	140 SMEs
		46% response	35% response rate	The survey findings suggest that most companies use simplistic methods to assign overhead costs to products.	50% response rate			
		Non-accounting managers	Above results are from 47 smallest businesses, t/o less than £30m	Payback and the IRR were the most widely used techniques				

Appendix 10: Qualitative characteristics of management accounting information

Source: Author's own. Adapted from ASB (1995) /

Appendix 11: Historical background of management accounting techniques

Academic	Mathematician	Economist
Two separate accounting systems	Simplex 100% unaware,	Fixed costs
	Limited factors 97% unaware	Opportunity cost 99% unaware
ABC 93% unaware	Probability, Optimisation models, allocation of overheads, Joint costs, By-products,	Variable costing, 93% could → always use variable costs
TQM 99% unaware,		Opportunity costs Capital budgeting, Product mix, Profitability analysis, Transfer pricing, Cost control, Evaluation
MRP,	Regression analysis 100% unaware	
Balanced scorecard 100% unaware,		Transfer pricing, 93% unaware
		Opportunity cost
ABM, EVA,		Discounted cash flow, Break even charts, Cost structures
Benchmarking 95% unaware		
		Break even = 39% use all the time 59% could → sometimes use

Engineer	Scientific Management	Entrepreneur
Capital investment appraisal Time value of money 35% would use some form of investment appraisal 96% would consider non-financial information Standard costing - variance analysis 46% unaware or inappropriate: 54% could → always use	Variance analysis (equations) See also Engineer Variance analysis	Costing - discontinue production Cost-benefit analysis Operating and budgeting activities, Return on investment 96% said they were unaware of the concept of a master budget. This could be due to terminology.

Technician
Cost determination 36% used some form of cost determination when setting prices, but see also consideration of variable costs Costs/costing for decision making Goal related information 97% use financial data for decision making, with 61% saying that they use the data regularly. 93% use financial data to motivate, 46% saying it is a high priority usage. 93% also state use financial data to set goals, with 56% saying it is high priority. Job costing, inc labour and materials Lease or buy Benchmarking 95% unaware, 69% benchmark month to month 995 benchmark year to year incentives for workers, identification of different costs Charging overheads to departments, Direct labour hour, prime cost Sensitivity analysis Job costing, Materials loss/waste, {standard costing?} Stock turn

Appendix 12: Key characteristics of the case respondents (five cases)

	Case one (Z)	Case two (G)	Case three (DB)	Case four (M)	Case five (B)
Initial contact	Nurtured from alternative contact	Chance meeting	Selected	Selected	Selected
Methodology	Semi-structured, exploratory interview Questionnaire used for structure base	Semi-structured, exploratory interview No access to questionnaire	Semi-structured, exploratory interview Questionnaire used for structure base	Semi-structured, exploratory interview Questionnaire used for structure base	Semi-structured, exploratory interview Questionnaire used for structure base
Meeting details	Two interviews. Both held at interviewee's workplace. Private meetings. Notes taken during interviews, transcribed straight after. First interview notes reviewed by respondent	One meeting held in public place. Not private setting. No notes taken during interview but written up straight afterwards. No follow up meeting.	Two interviews. Both held in one of interviewee's workplaces. Semi-private meetings (other staff members within area. Notes taken during interviews, transcribed straight after. First interview notes reviewed by respondent.	Two interviews. Both held at interviewer's workplace. Private meetings. Notes taken during interviews, transcribed straight after. Both sets of interview notes reviewed by respondent.	One interview held at interviewee's workplace. Private meeting. Notes taken during interview, transcribed straight after. Interview notes reviewed by respondent at later date. No follow up meeting except for checking of notes.

	Case one (Z)	Case two (G)	Case three (DB)	Case four (M)	Case five (B)
Business	Young business	Long existing business	Long existing business	Established business	Long existing business
	Owner/manager plus approx 5 staff Retail and service business Highly competitive business	2 owner/directors plus 30 staff Manager new to business Manufacturing business Some competition but not local	Owner/manager plus 3 staff Owner has several enterprises Retail business (making some products) Highly competitive business	Owner/manager plus approx 15 staff Manufacturing business Medium competitive business	2 owner/directors plus ad hoc workforce Building business (bespoke items) Some competition

	Case one (Z)	Case two (G)	Case three (DB)	Case four (M)	Case five (B)
Findings:					
Job costing	Some concept but no knowledge of overhead costing.	Full system using quotations into job sheets which are then analysed. Variations considered and used to update new quotes.	Formal system in operation, including break even analysis although not evidenced in writing.	Formal system in operation, including break even analysis evidenced in writing.	Formal system in operation, although not evidenced in writing.
	Pricing led by marketing strategy.	Unknown re overheads. Profit consideration high.	Profit maximisation high consideration.	Profit maximisation high consideration. Pricing led by marketing strategy.	Variations considered and used to update new quotes. Overhead system in operation. Profit consideration medium.
Cash management	Cash budgets constructed. No analysis or reconciliation.	Formal cash budgets constructed and monitored.	No details given.	Formal cash budgets constructed and monitored. Overdraft position leads to bank interviews.	Formal cash budgets constructed and monitored.

	Case one (Z)	Case two (G)	Case three (DB)	Case four (M)	Case five (B)
Investments	None employed.	Appearance of some investment techniques being employed but with current cash situation investments limited to necessities.	Appearance of some investment techniques being employed led by profit or legal requirement.	Appearance of some investment techniques being employed led cash position.	Investment techniques being employed potentially led by family member qualified to AAT4.
Other findings	Accounting is seen as a hindrance by this business. The owner has no real understanding of it and it is last item on the working day agenda (and as such often gets left). Bookkeeper has just been employed to 'sort-out' systems and procedures.	Fully computerised accounting system with full-time accountant employed.	Although much of the management accounting is within the owners head when he constructed a spreadsheet after the first interview the figures and facts were aligned with his own 'thoughts'.	Fully computerised accounting system (sage) with full-time bookkeeper employed.	Fully computerised accounting system with full-time bookkeeper employed.

	Case one (Z)	Case two (G)	Case three (DB)	Case four (M)	Case five (B)
Conclusion	The owner has no training in the world of business and apart from good product knowledge the business seems to exist more on luck and logic than any formal procedure or technique.	Formal management accounting techniques appear to be employed to aid decision making processes within the business both on operational and strategic basis.	Although this owner/manager has very formal accounting training his decision making is based on intuition more than hard facts.	Owner/manager has been in businesses for a number of years and has encountered cash flow problems which ultimately led to systems being put in place to help reduce financial problems.	Formal management accounting techniques appear to be employed to aid decision making processes within the business both on operational and strategic basis.
Futher considerations	Changes were evidenced between interviews and it is considered that these will change procedures of this business in the future.		Changes were evidenced between interviews although it is felt these had no effect on the future decision making of the business.	No changes were evidenced between interviews.	

Appendix 13: SPSS Analysis

Frequency of accounting documents being prepared

Profit and Loss account

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	100	100.0	100.0	100.0

Balance Sheet

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	100	100.0	100.0	100.0

Cash Flow Forecast

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	90	90.0	90.0	90.0
	No	10	10.0	10.0	100.0
	Total	100	100.0	100.0	

Bank Reconciliation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	91	91.0	91.0	91.0
	No	9	9.0	9.0	100.0
	Total	100	100.0	100.0	

Ratio Analysis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	35	35.0	35.0	35.0
	No	65	65.0	65.0	100.0
	Total	100	100.0	100.0	

Variance Analysis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	30	30.0	30.0	30.0
	No	70	70.0	70.0	100.0
	Total	100	100.0	100.0	

Industry type * Cash Flow Forecast Crosstabulation

		Cash Flow Forecast		Total
		Yes	No	
Industry type	Banking, finance, insurance, business services and leasing	7	0	7
	Building repairs (inc. gas, plumbing and maintenance)	8	3	11
	Catering	6	0	6
	Clothing industry	5	0	5
	Construction	2	1	3
	Distribution and transport	1	1	2
	Supermarket	10	0	10
	Entertainment industry	4	2	6
	Beauty (inc hairdressing, tanning, massage)	6	1	7
	Hotel	2	0	2
	Specialist food (inc butcher, baker, greengrocer)	12	1	13
	Fast food	5	0	5
	Software and computing	6	0	6
	Vehicle industries (repair and servicing)	5	1	6
	Other manufacturing industries	9	0	9
	Other services	2	0	2
Total		90	10	100

Industry type * Bank Reconciliation Crosstabulation

Count

		Bank Reconciliation		Total
		Yes	No	
Industry type	Banking, finance, insurance, business services and leasing	6	1	7
	Building repairs (inc. gas, plumbing and maintenance)	11	0	11
	Catering	6	0	6
	Clothing industry	5	0	5
	Construction	3	0	3
	Distribution and transport	2	0	2
	Supermarket	8	2	10
	Entertainment industry	4	2	6
	Beauty (inc hairdressing, tanning, massage)	7	0	7
	Hotel	2	0	2
	Specialist food (inc butcher, baker, greengrocer)	11	2	13
	Fast food	4	1	5
	Software and computing	5	1	6
	Vehicle industries (repair and servicing)	6	0	6
	Other manufacturing industries	9	0	9
	Other services	2	0	2
Total		91	9	100

Industry type * Ratio Analysis Crosstabulation

Count

		Ratio Analysis		Total
		Yes	No	
Industry type	Banking, finance, insurance, business services and leasing	2	5	7
	Building repairs (inc. gas, plumbing and maintenance)	4	7	11
	Catering	3	3	6
	Clothing industry	2	3	5
	Construction	1	2	3
	Distribution and transport	1	1	2
	Supermarket	4	6	10
	Entertainment industry	1	5	6
	Beauty (inc hairdressing, tanning, massage)	2	5	7
	Hotel	0	2	2
	Specialist food (inc butcher, baker, greengrocer)	4	9	13
	Fast food	2	3	5
	Software and computing	2	4	6
	Vehicle industries (repair and servicing)	2	4	6
	Other manufacturing industries	4	5	9
	Other services	1	1	2
Total		35	65	100

Industry type * Variance Analysis Cross tabulation

		Variance Analysis		Total
		Yes	No	
Industry type	Banking, finance, insurance, business services and leasing	2	5	7
	Building repairs (inc. gas, plumbing and maintenance)	6	5	11
	Catering	2	4	6
	Clothing industry	0	5	5
	Construction	1	2	3
	Distribution and transport	1	1	2
	Supermarket	2	8	10
	Entertainment industry	2	4	6
	Beauty (inc hairdressing, tanning, massage)	0	7	7
	Hotel	1	1	2
	Specialist food (inc butcher, baker, greengrocer)	4	9	13
	Fast food	1	4	5
	Software and computing	1	5	6
	Vehicle industries (repair and servicing)	1	5	6
	Other manufacturing industries	4	5	9
	Other services	2	0	2
Total		30	70	100

Industry type / How prices are calculated Cross tabulation

	How prices are calculated										Total
Industry	How much it costs to buy plus a certain percentage	How much it costs to buy plus a bit	How much it costs to buy plus a percentage of the overheads	The full cost to make it plus a set amount to cover overheads	However much our competitors charge	A little less than the competitors price	Each job is individually priced and charged at full cost, including overheads plus a set profit margin	Each job is individually priced and charged at full cost, including overheads and estimated profit	A standard cost is calculated which includes fixed and variable costs and overheads. A set profit margin is added.	The prices are set externally	
Banking, finance, insurance, business services and leasing	1	0	0	1	2	1	1	1	0	0	**7**
Building repairs (inc. gas, plumbing and maintenance)	0	1	1	0	3	3	1	1	1	0	**11**
Catering	1	0	0	0	0	0	1	0	4	0	**6**
Clothing industry	0	1	1	1	0	0	0	1	1	0	**5**
Construction	0	0	0	0	0	0	0	1	2	0	**3**
Distribution and transport	0	0	0	0	0	1	0	1	0	0	**2**
Supermarket	0	6	3	0	0	1	0	0	0	0	**10**
Entertainment industry	0	0	0	0	2	4	0	0	0	0	**6**
Beauty (inc hairdressing, tanning, massage)	0	0	0	0	3	3	0	0	1	0	**7**
Hotel	0	0	0	0	1	1	0	0	0	0	**2**
Specialist food (inc butcher, baker, greengrocer)	1	4	2	2	1	1	0	1	0	1	**13**
Fast food	0	1	1	0	0	0	0	0	1	2	**5**
Software and computing	0	2	0	0	0	2	1	0	0	1	**6**
Vehicle industries (repair and servicing)	0	0	0	0	0	2	0	1	0	3	**6**
Other manufacturing industries	0	0	0	1	0	1	0	6	1	0	**9**
Other services	0	0	0	0	0	0	0	0	0	2	**2**
Total	**3**	**15**	**8**	**5**	**12**	**20**	**4**	**13**	**11**	**9**	**100**
Ranking	10	2	7	8	3	1	9	4	5	6	

Industry type * Who calculates prices Crosstabulation

Count

		Who calculates prices			Total
		Owner	Bookkeeper (internal)	Externally set by other	
Industry type	Banking, finance, insurance, business services and leasing	7	0	0	7
	Building repairs (inc. gas, plumbing and maintenance)	9	2	0	11
	Catering	3	3	0	6
	Clothing industry	4	1	0	5
	Construction	0	3	0	3
	Distribution and transport	2	0	0	2
	Supermarket	9	1	0	10
	Entertainment industry	6	0	0	6
	Beauty (inc hairdressing, tanning, massage)	7	0	0	7
	Hotel	2	0	0	2
	Specialist food (inc butcher, baker, greengrocer)	11	1	1	13
	Fast food	2	1	2	5
	Software and computing	4	0	2	6
	Vehicle industries (repair and servicing)	3	0	3	6
	Other manufacturing industries	5	4	0	9
	Other services	0	0	2	2
Total		74	16	10	100

How prices are calculated * Who calculates prices Crosstabulation

Count

		Who calculates prices			
		Owner	Bookkeeper (internal)	Externally set by other	Total
How prices are calculated	How much it costs to buy plus a certain percentage	3	0	0	3
	How much it costs to buy plus a bit	14	0	1	15
	How much it costs to buy plus a percentage of the overheads	7	1	0	8
	The full cost to make it plus a set amount to cover overheads	3	2	0	5
	However much our competitors charge	12	0	0	12
	A little less than the competitors price	19	0	1	20
	Each job is individually priced and charged at full cost, including overheads plus a set profit margin	3	1	0	4
	Each job is individually priced and charged at full cost, including overheads and estimated profit	9	4	0	13
	A standard cost is calculated which includes fixed and variable costs and overheads. A set profit margin is added.	3	8	0	11
	The prices are set externally	1	0	8	9
Total		74	16	10	100

Industry type * Profitability Crosstabulation

Count

		Profitability		
		Good useage / agreement	High priority / agreement	Total
Industry type	Banking, finance, insurance, business services and leasing	1	6	7
	Building repairs (inc. gas, plumbing and maintenance)	2	9	11
	Catering	0	6	6
	Clothing industry	1	4	5
	Construction	1	2	3
	Distribution and transport	0	2	2
	Supermarket	0	10	10
	Entertainment industry	1	5	6
	Beauty (inc hairdressing, tanning, massage)	0	7	7
	Hotel	2	0	2
	Specialist food (inc butcher, baker, greengrocer)	0	13	13
	Fast food	1	4	5
	Software and computing	1	5	6
	Vehicle industries (repair and servicing)	0	6	6
	Other manufacturing industries	0	9	9
	Other services	0	2	2
Total		10	90	100

Industry type * Bank balance Crosstabulation

Count

		Bank balance		
		Good useage / agreement	High priority / agreement	Total
Industry type	Banking, finance, insurance, business services and leasing	1	6	7
	Building repairs (inc. gas, plumbing and maintenance)	0	11	11
	Catering	0	6	6
	Clothing industry	1	4	5
	Construction	1	2	3
	Distribution and transport	0	2	2
	Supermarket	0	10	10
	Entertainment industry	1	5	6
	Beauty (inc hairdressing, tanning, massage)	0	7	7
	Hotel	1	1	2
	Specialist food (inc butcher, baker, greengrocer)	2	11	13
	Fast food	0	5	5
	Software and computing	1	5	6
	Vehicle industries (repair and servicing)	0	6	6
	Other manufacturing industries	0	9	9
	Other services	0	2	2
Total		8	92	100

Industry type * Business worth Crosstabulation

Count

		Business worth				
		Low priority / disagree	Occasional use	Agree / use sometimes	High priority / agreement	Total
Industry type	Banking, finance, insurance, business services and leasing	1	3	2	1	7
	Building repairs (inc. gas, plumbing and maintenance)	6	2	1	2	11
	Catering	2	1	3	0	6
	Clothing industry	1	4	0	0	5
	Construction	0	2	1	0	3
	Distribution and transport	1	0	1	0	2
	Supermarket	3	2	4	1	10
	Entertainment industry	1	3	1	1	6
	Beauty (inc hairdressing, tanning, massage)	4	2	1	0	7
	Hotel	1	1	0	0	2
	Specialist food (inc butcher, baker, greengrocer)	5	5	1	2	13
	Fast food	1	1	3	0	5
	Software and computing	3	3	0	0	6
	Vehicle industries (repair and servicing)	3	0	2	1	6
	Other manufacturing industries	2	5	2	0	9
	Other services	0	0	2	0	2
Total		34	34	24	8	100

Industry type * Decision Making Crosstabulation

Count

		Decision Making					
		Low priority / disagree	Occasional use	Agree / use sometimes	Good useage / agreement	High priority / agreement	Total
Industry type	Banking, finance, insurance, business services and leasing	0	0	3	1	3	7
	Building repairs (inc. gas, plumbing and maintenance)	0	0	3	2	6	11
	Catering	0	1	3	0	2	6
	Clothing industry	0	0	1	1	3	5
	Construction	0	0	0	1	2	3
	Distribution and transport	0	0	0	0	2	2
	Supermarket	0	0	1	6	3	10
	Entertainment industry	0	0	3	3	0	6
	Beauty (inc hairdressing, tanning, massage)	0	0	4	2	1	7
	Hotel	0	0	1	1	0	2
	Specialist food (inc butcher, baker, greengrocer)	0	0	5	3	5	13
	Fast food	0	0	2	1	2	5
	Software and computing	1	0	3	1	1	6
	Vehicle industries (repair and servicing)	0	0	2	2	2	6
	Other manufacturing industries	0	1	4	3	1	9
	Other services	0	0	1	0	1	2
Total		1	2	36	27	34	100

Industry type * Motivate Crosstabulation

Count

		Motivate					
		Low priority / disagree	Occasional use	Agree / use sometimes	Good useage / agreement	High priority / agreement	Total
Industry type	Banking, finance, insurance, business services and leasing	1	0	1	3	2	7
	Building repairs (inc. gas, plumbing and maintenance)	0	0	2	2	7	11
	Catering	1	0	2	2	1	6
	Clothing industry	0	0	1	2	2	5
	Construction	0	0	1	0	2	3
	Distribution and transport	0	0	1	0	1	2
	Supermarket	0	0	3	3	4	10
	Entertainment industry	0	0	3	1	2	6
	Beauty (inc hairdressing, tanning, massage)	1	0	0	3	3	7
	Hotel	0	0	0	0	2	2
	Specialist food (inc butcher, baker, greengrocer)	0	0	4	3	6	13
	Fast food	0	0	2	1	2	5
	Software and computing	2	0	1	1	2	6
	Vehicle industries (repair and servicing)	0	0	2	0	4	6
	Other manufacturing industries	1	1	1	1	5	9
	Other services	0	0	1	0	1	2
Total		6	1	25	22	46	100

Industry type * Set goals Crosstabulation

Count

		Set goals					
		Low priority / disagree	Occasional use	Agree / use sometimes	Good useage / agreement	High priority / agreement	Total
Industry type	Banking, finance, insurance, business services and leasing	1	0	1	1	4	7
	Building repairs (inc. gas, plumbing and maintenance)	0	0	1	2	8	11
	Catering	1	0	1	2	2	6
	Clothing industry	0	0	1	2	2	5
	Construction	0	0	1	0	2	3
	Distribution and transport	0	0	1	0	1	2
	Supermarket	0	0	2	2	6	10
	Entertainment industry	0	0	2	1	3	6
	Beauty (inc hairdressing, tanning, massage)	1	0	0	3	3	7
	Hotel	0	0	0	0	2	2
	Specialist food (inc butcher, baker, greengrocer)	0	0	2	3	8	13
	Fast food	0	0	1	1	3	5
	Software and computing	2	0	1	1	2	6
	Vehicle industries (repair and servicing)	0	0	2	0	4	6
	Other manufacturing industries	1	1	1	1	5	9
	Other services	0	0	1	0	1	2
Total		6	1	18	19	56	100

Industry type * Comparison to other competitors Crosstabulation

Count

		Comparison to other competitors					
		Low priority / disagree	Occasional use	Agree / use sometimes	Good useage / agreement	High priority / agreement	Total
Industry type	Banking, finance, insurance, business services and leasing	5	0	0	1	1	7
	Building repairs (inc. gas, plumbing and maintenance)	7	1	2	0	1	11
	Catering	5	0	0	0	1	6
	Clothing industry	4	1	0	0	0	5
	Construction	1	1	1	0	0	3
	Distribution and transport	0	0	0	1	1	2
	Supermarket	5	5	0	0	0	10
	Entertainment industry	3	0	3	0	0	6
	Beauty (inc hairdressing, tanning, massage)	5	1	0	1	0	7
	Hotel	2	0	0	0	0	2
	Specialist food (inc butcher, baker, greengrocer)	9	2	2	0	0	13
	Fast food	2	1	1	0	1	5
	Software and computing	4	1	1	0	0	6
	Vehicle industries (repair and servicing)	4	1	1	0	0	6
	Other manufacturing industries	6	1	1	0	1	9
	Other services	0	0	1	1	0	2
Total		62	15	13	4	6	100

Industry type * Comparison month to month Crosstabulation

Count

		Comparison month to month				
		Low priority / disagree	Agree / use sometimes	Good useage / agreement	High priority / agreement	Total
Industry type	Banking, finance, insurance, business services and leasing	0	0	1	6	7
	Building repairs (inc. gas, plumbing and maintenance)	0	1	2	8	11
	Catering	0	2	0	4	6
	Clothing industry	0	1	2	2	5
	Construction	0	0	1	2	3
	Distribution and transport	0	0	0	2	2
	Supermarket	0	3	0	7	10
	Entertainment industry	0	2	0	4	6
	Beauty (inc hairdressing, tanning, massage)	0	0	1	6	7
	Hotel	0	1	0	1	2
	Specialist food (inc butcher, baker, greengrocer)	0	3	1	9	13
	Fast food	0	1	1	3	5
	Software and computing	1	2	1	2	6
	Vehicle industries (repair and servicing)	0	0	0	6	6
	Other manufacturing industries	0	2	2	5	9
	Other services	0	0	0	2	2
Total		1	18	12	69	100

Industry type * Comparison year to year Crosstabulation

Count

		Comparison year to year			Total
		Agree / use sometimes	Good useage / agreement	High priority / agreement	
Industry type	Banking, finance, insurance, business services and leasing	0	1	6	7
	Building repairs (inc. gas, plumbing and maintenance)	1	0	10	11
	Catering	1	0	4	5
	Clothing industry	2	0	3	5
	Construction	0	1	2	3
	Distribution and transport	0	0	2	2
	Supermarket	2	0	8	10
	Entertainment industry	1	0	5	6
	Beauty (inc hairdressing, tanning, massage)	0	0	7	7
	Hotel	1	0	1	2
	Specialist food (inc butcher, baker, greengrocer)	2	0	11	13
	Fast food	1	1	3	5
	Software and computing	3	1	2	6
	Vehicle industries (repair and servicing)	0	0	6	6
	Other manufacturing industries	3	1	5	9
	Other services	0	0	2	2
Total		17	5	77	99

Industry type * Legal requirements Crosstabulation

Count

		Legal requirements					Total
		Low priority / disagree	Occasional use	Agree / use sometimes	Good useage / agreement	High priority / agreement	
Industry type	Banking, finance, insurance, business services and leasing	2	0	1	0	4	7
	Building repairs (inc. gas, plumbing and maintenance)	6	0	2	0	3	11
	Catering	3	0	1	1	1	6
	Clothing industry	4	0	0	0	1	5
	Construction	1	0	1	0	1	3
	Distribution and transport	0	0	0	0	2	2
	Supermarket	3	1	2	0	4	10
	Entertainment industry	3	0	0	0	3	6
	Beauty (inc hairdressing, tanning, massage)	6	0	1	0	0	7
	Hotel	1	0	0	0	1	2
	Specialist food (inc butcher, baker, greengrocer)	8	0	2	1	2	13
	Fast food	4	0	1	0	0	5
	Software and computing	4	0	0	0	2	6
	Vehicle industries (repair and servicing)	5	0	0	0	1	6
	Other manufacturing industries	5	1	2	0	1	9
	Other services	1	0	0	0	1	2
Total		56	2	13	2	27	100

Industry type * For banking purposes Crosstabulation

Count

		For banking purposes					
		Low priority / disagree	Occasional use	Agree / use sometimes	Good useage / agreement	High priority / agreement	Total
Industry type	Banking, finance, insurance, business services and leasing	1	1	1	2	2	7
	Building repairs (inc. gas, plumbing and maintenance)	1	0	1	3	6	11
	Catering	0	2	0	1	3	6
	Clothing industry	1	1	1	1	1	5
	Construction	0	0	1	1	1	3
	Distribution and transport	0	0	0	2	0	2
	Supermarket	2	1	2	3	2	10
	Entertainment industry	0	1	1	2	2	6
	Beauty (inc hairdressing, tanning, massage)	1	1	0	3	2	7
	Hotel	0	0	0	2	0	2
	Specialist food (inc butcher, baker, greengrocer)	2	2	1	3	5	13
	Fast food	0	1	1	1	2	5
	Software and computing	0	0	1	2	3	6
	Vehicle industries (repair and servicing)	0	0	0	4	2	6
	Other manufacturing industries	1	1	1	3	3	9
	Other services	0	0	0	0	2	2
Total		9	11	11	33	36	100

Industry type * External investors review Crosstabulation

Count

		External investors review					
		Low priority / disagree	Occasional use	Agree / use sometimes	Good useage / agreement	High priority / agreement	Total
Industry type	Banking, finance, insurance, business services and leasing	6	0	0	0	1	7
	Building repairs (inc. gas, plumbing and maintenance)	8	0	1	1	1	11
	Catering	5	1	0	0	0	6
	Clothing industry	5	0	0	0	0	5
	Construction	3	0	0	0	0	3
	Distribution and transport	2	0	0	0	0	2
	Supermarket	10	0	0	0	0	10
	Entertainment industry	6	0	0	0	0	6
	Beauty (inc hairdressing, tanning, massage)	6	0	1	0	0	7
	Hotel	2	0	0	0	0	2
	Specialist food (inc butcher, baker, greengrocer)	13	0	0	0	0	13
	Fast food	4	1	0	0	0	5
	Software and computing	6	0	0	0	0	6
	Vehicle industries (repair and servicing)	6	0	0	0	0	6
	Other manufacturing industries	6	1	0	1	1	9
	Other services	2	0	0	0	0	2
Total		90	3	2	2	3	100

Industry type * Potential investors review Crosstabulation

Count

		Potential investors review					
		Low priority / disagree	Occasional use	Agree / use sometimes	Good useage / agreement	High priority / agreement	Total
Industry type	Banking, finance, insurance, business services and leasing	6	0	0	0	1	7
	Building repairs (inc. gas, plumbing and maintenance)	8	0	0	2	1	11
	Catering	6	0	0	0	0	6
	Clothing industry	5	0	0	0	0	5
	Construction	3	0	0	0	0	3
	Distribution and transport	2	0	0	0	0	2
	Supermarket	10	0	0	0	0	10
	Entertainment industry	6	0	0	0	0	6
	Beauty (inc hairdressing, tanning, massage)	6	0	0	0	1	7
	Hotel	2	0	0	0	0	2
	Specialist food (inc butcher, baker, greengrocer)	13	0	0	0	0	13
	Fast food	4	1	0	0	0	5
	Software and computing	5	0	1	0	0	6
	Vehicle industries (repair and servicing)	6	0	0	0	0	6
	Other manufacturing industries	6	0	1	2	0	9
	Other services	2	0	0	0	0	2
Total		90	1	2	4	3	100

Industry type * To show others performance Crosstabulation

Count

		To show others performance				
		Low priority / disagree	Agree / use sometimes	Good useage / agreement	High priority / agreement	Total
Industry type	Banking, finance, insurance, business services and leasing	6	0	0	1	7
	Building repairs (inc. gas, plumbing and maintenance)	8	1	1	1	11
	Catering	6	0	0	0	6
	Clothing industry	4	0	1	0	5
	Construction	3	0	0	0	3
	Distribution and transport	2	0	0	0	2
	Supermarket	10	0	0	0	10
	Entertainment industry	6	0	0	0	6
	Beauty (inc hairdressing, tanning, massage)	6	0	0	1	7
	Hotel	2	0	0	0	2
	Specialist food (inc butcher, baker, greengrocer)	13	0	0	0	13
	Fast food	5	0	0	0	5
	Software and computing	6	0	0	0	6
	Vehicle industries (repair and servicing)	6	0	0	0	6
	Other manufacturing industries	7	0	1	1	9
	Other services	1	0	0	1	2
Total		91	1	3	5	100

Industry type * Pricing decisions Crosstabulation

Count

		Pricing decisions					
		Low priority / disagree	Occasional use	Agree / use sometimes	Good useage / agreement	High priority / agreement	Total
Industry type	Banking, finance, insurance, business services and leasing	0	1	2	3	1	7
	Building repairs (inc. gas, plumbing and maintenance)	1	1	4	4	1	11
	Catering	1	0	1	3	1	6
	Clothing industry	0	1	2	0	2	5
	Construction	0	0	0	1	2	3
	Distribution and transport	0	2	0	0	0	2
	Supermarket	1	1	0	1	7	10
	Entertainment industry	1	4	0	0	1	6
	Beauty (inc hairdressing, tanning, massage)	1	3	0	2	1	7
	Hotel	0	0	1	1	0	2
	Specialist food (inc butcher, baker, greengrocer)	2	2	1	6	2	13
	Fast food	2	1	0	1	1	5
	Software and computing	1	0	1	1	3	6
	Vehicle industries (repair and servicing)	0	1	1	3	1	6
	Other manufacturing industries	1	2	2	0	4	9
	Other services	1	0	0	1	0	2
Total		12	19	15	27	27	100

Industry type * Efficiency Crosstabulation

Count

		Efficiency				
		Occasional use	Agree / use sometimes	Good useage / agreement	High priority / agreement	Total
Industry type	Banking, finance, insurance, business services and leasing	1	2	1	3	7
	Building repairs (inc. gas, plumbing and maintenance)	0	4	1	6	11
	Catering	0	4	0	2	6
	Clothing industry	0	2	0	3	5
	Construction	0	1	1	1	3
	Distribution and transport	1	0	0	1	2
	Supermarket	0	5	1	4	10
	Entertainment industry	2	1	2	1	6
	Beauty (inc hairdressing, tanning, massage)	0	2	3	2	7
	Hotel	0	1	1	0	2
	Specialist food (inc butcher, baker, greengrocer)	1	4	3	5	13
	Fast food	1	3	0	1	5
	Software and computing	3	0	0	3	6
	Vehicle industries (repair and servicing)	1	4	0	1	6
	Other manufacturing industries	0	4	4	1	9
	Other services	0	1	0	1	2
Total		10	38	17	35	100

Industry type * Benchmarking Crosstabulation

Count

		Benchmarking					
		Low priority / disagree	Occasional use	Agree / use sometimes	Good useage / agreement	High priority / agreement	Total
Industry type	Banking, finance, insurance, business services and leasing	6	0	0	1	0	7
	Building repairs (inc. gas, plumbing and maintenance)	11	0	0	0	0	11
	Catering	5	0	1	0	0	6
	Clothing industry	5	0	0	0	0	5
	Construction	2	1	0	0	0	3
	Distribution and transport	2	0	0	0	0	2
	Supermarket	10	0	0	0	0	10
	Entertainment industry	6	0	0	0	0	6
	Beauty (inc hairdressing, tanning, massage)	7	0	0	0	0	7
	Hotel	2	0	0	0	0	2
	Specialist food (inc butcher, baker, greengrocer)	12	0	0	1	0	13
	Fast food	5	0	0	0	0	5
	Software and computing	5	0	1	0	0	6
	Vehicle industries (repair and servicing)	5	1	0	0	0	6
	Other manufacturing industries	6	2	0	1	0	9
	Other services	1	0	0	0	1	2
Total		90	4	2	3	1	100

Industry type * Not used sufficiently Crosstabulation

Count

		Not used sufficiently					
		Low priority / disagree	Occasional use	Agree / use sometimes	Good useage / agreement	High priority / agreement	Total
Industry type	Banking, finance, insurance, business services and leasing	1	2	2	0	2	7
	Building repairs (inc. gas, plumbing and maintenance)	1	3	2	2	3	11
	Catering	0	1	2	1	2	6
	Clothing industry	1	0	1	1	2	5
	Construction	0	0	0	0	3	3
	Distribution and transport	0	1	1	0	0	2
	Supermarket	0	1	3	5	1	10
	Entertainment industry	0	0	2	2	2	6
	Beauty (inc hairdressing, tanning, massage)	0	0	1	3	3	7
	Hotel	0	0	1	0	1	2
	Specialist food (inc butcher, baker, greengrocer)	0	3	4	3	3	13
	Fast food	0	1	3	1	0	5
	Software and computing	0	1	2	1	2	6
	Vehicle industries (repair and servicing)	1	0	1	0	4	6
	Other manufacturing industries	1	1	0	2	5	9
	Other services	0	0	1	1	0	2
Total		5	14	26	22	33	100

Capital expenditure consideration

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Would just go out a buy it	20	20.0	20.0	20.0
	Would look around for the best deal to buy it	37	37.0	37.0	57.0
	Would consider alternatives, like leasing, HP, ...	12	12.0	12.0	69.0
	Would calculate the alternatives, looking at the payback of the investment	31	31.0	31.0	100.0
	Total	100	100.0	100.0	

Capital expenditure consideration

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	96	96.0	96.0	96.0
	No	4	4.0	4.0	100.0
	Total	100	100.0	100.0	

Decision Making

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low priority / disagree	1	1.0	1.0	1.0
	Occasional use	2	2.0	2.0	3.0
	Agree / use sometimes	36	36.0	36.0	39.0
	Good useage / agreement	27	27.0	27.0	66.0
	High priority / agreement	34	34.0	34.0	100.0
	Total	100	100.0	100.0	

Motivate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low priority / disagree	6	6.0	6.0	6.0
	Occasional use	1	1.0	1.0	7.0
	Agree / use sometimes	25	25.0	25.0	32.0
	Good useage / agreement	22	22.0	22.0	54.0
	High priority / agreement	46	46.0	46.0	100.0
	Total	100	100.0	100.0	

Set goals

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low priority / disagree	6	6.0	6.0	6.0
	Occasional use	1	1.0	1.0	7.0
	Agree / use sometimes	18	18.0	18.0	25.0
	Good useage / agreement	19	19.0	19.0	44.0
	High priority / agreement	56	56.0	56.0	100.0
	Total	100	100.0	100.0	

How prices are calculated * Industry type Crosstabulation

		Industry type																
		Banking, finance, insurance, business services and leasing	Building repairs (inc. gas, plumbing and maintenance)	Catering	Clothing industry	Construction	Distribution and transport	Supermarket	Entertainment industry	Beauty (inc hairdressing, tanning, massage)	Hotel	Specialist food (inc butcher, baker, greengrocer)	Fast food	Software and computing	Vehicle industries (repair and servicing)	Other manufacturing industries	Other services	Total
How prices are calculated	How much it costs to buy plus a certain percentage	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	3
	How much it costs to buy plus a bit	0	1	0	1	0	0	6	0	0	0	4	1	2	0	0	0	15
	How much it costs to buy plus a percentage of the overheads	0	1	0	1	0	0	3	0	0	0	2	1	0	0	0	0	8
	The full cost to make it plus a set amount to cover overheads	1	0	0	1	0	0	0	0	0	0	2	0	0	0	1	0	5
	However much our competitors charge	2	3	0	0	0	0	0	2	3	1	1	0	0	0	0	0	12
	A little less than the competition price	1	3	0	0	0	1	1	4	3	1	1	0	2	2	1	0	20
	Each job is individually priced and charged at full cost, including overheads plus a set profit margin	1	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	4
	Each job is individually priced and charged at full cost, including overheads and estimated profit	1	1	0	1	1	1	0	0	0	0	1	0	0	1	6	0	13
	A standard cost is calculated which includes fixed and variable costs and overheads. A set profit margin is added.	0	1	4	1	2	0	0	0	1	0	0	1	0	0	1	0	11
	The prices are set externally	0	0	0	0	0	0	0	0	0	0	1	2	1	3	0	2	9
Total		7	11	6	5	3	2	10	6	7	2	13	5	6	6	9	2	100

Appendix 14: British Technical Accounting Literature Genealogy

Date	Author	Details
1179	Richard FitzNigel	*Dialoguus de Saccario* – treatise on charge and discharge accounting
1543	Hugh Oldcastle	– *A Profitable Treatyce*...the first English publication on DEB largely copying Pacioli's 1492 text. This was followed by many other similar examples, most notably John Mellis's 1588 *A Briefe Instruction and manner how to keepe bookes*
1620	London Worshipful Company of Bakers	Calculating the cost of baking a loaf, cited by in *Cost Accountant* (November 1941)
1697	John Collins	*The Perfect Method of Merchant Accompts* – dyers process accounts for separate processes with transaction examples dated 1664 and 1665.
1714	Roger North	*The Gentleman Accomptant* – accounting for the results of individual farms and their operations
1750	James Dodson	*The Accountant or The Method of Bookkeeping*- shoemakers accounts that split costs into separate processes
1760	John Mair	*Bookkeeping Methodized* – some cursory mention of plantation accounting for different crop types.
1777	Wardlaugh Thompson	*The Accomptants Oracle* – contains a chapter on thread hosiery manufacture through the putting out system.
1779	Robert Hamilton.	*Introduction to Merchandise* – referred to a small number of accounting records kept by artificers and manufacturers with references to the types of accounts to be kept. It includes farm accounts and an indirect reference to brewery accounting. However the 1820 edition dropped all the prior cost style references. Robert Hamilton (1743-1829) was a Scottish academic who Rector of Perth Academy (1769-1779) later becoming Professor of Natural Philosophy and Professor of Mathematics at Marischal College, Aberdeen (1779-1817).
1818	F. W. Cronhelm.	Notable for discussing accounting for perpetual inventory and work in progress
1832	Charles Babbage.	*On the Economy of Machinery and Manufacturers*- the first treatise on the scientific management of factories - not cost accounting as such but a table of cost analysis.
1858	F. W. Krepp.	*Statistical Bookkeeping* – described as a special system for manufacturers but 'unsophisticated'.

1862	J. W. Sawyer.	*Bookkeeping for the Tanning Trade* – described as a sorry example of cost accounting in this 'Dark Age'
1878	T. Battersby.	*The Perfect Double Entry Bookkeeper and the Perfect Prime Cost and Profit Demonstrator (on the Departmental System) for Iron and Brass Foundries, Machinists, Engineers, Shipbuilders, Manufacturers etc.*.- described six types of cost accounts used by the author in his public practice all of which he criticised.
1881	Edward Amsdon	*Brewery Bookkeeping* – cited by Solomons but noted for excluding any consideration of cost accounting.
1887-1922	E.Garcke and J. M. Fells	*Factory Accounts* - traditionally cited as the most influential cost work of the nineteenth century that endured until a final seventh edition in 1922. However *The Accountant* described it as more theoretical than practical, and pedantic, in the nature of a work on political economy.
1889	G.P. Norton.	*Manufacturers' Bookkeeping* – systematised bookkeeping in manufacturing industries which was widely adopted in the British and American woollen mills with imputed costs that was close to the standard costing concept.
1892	H.C. Tripp.	*Brewery Management* – included complex and detailed financial accounting frameworks and debating the justification and legitimacy of 'overhead' costs included in beer production.
1896	J.S. Slater-Lewis.	*Commercial Organisation of Factories* – included integrated accounts with a consideration of allocation and apportionment of overhead costs based on modern concepts.
1914	E.T. Elbourne	*Factory Administration and Accounts* – synthesised administrative methods, including cost accounting, with the planning of production and control of stock.
1915	E.C. De Payer	*Brewery Accounting and Income Tax* – the paper was focused on financial accounting and tax and excluded any mention of cost accounting. It also debated the problem of which costs could be legitimately included in the cost of production via the Manufacturing Account.
1939	G.S.Hamilton	*Brewery Accounting* – mainly devoted to detailed financial accounting frameworks but notable for including a chapter on brewery cost accounting and the treatment of overheads on modern lines.

Source: Dr Philip A Talbot (unpublished)

Appendix 15: British Professional Accountancy Bodies (1930)

Date of Incorporation	Name	Members
1854 (by Charter)	Society of Accountants in Edinburgh	952
1855 (by Charter)	Institute of Accountants and Actuaries in Glasgow	1,825
1867 (by Charter)	Society of Accountants in Aberdeen	163
1880 (by Charter)	Institute of Chartered Accountants in England and Wales	9,047
1885	Society of Incorporated Accountants and Auditors	5,225
1891	Corporation of Accountants, Limited	1,927
1901 (formed 1885)	Institute of Municipal Treasurers and Accountants (Incorporated)	642
1903	Institute of Certified Public Accountants, Limited	175
1905	London Association of Accountants, Limited	2,900
1905	Central Association of Accountants, Limited	739
1919	Institute of Cost and Works Accountants, Limited	c.796
1923	Institute of Poor Law Accountants, Limited	409
1923	British Association of Accountants and Auditors, Limited	333
1927 (formed 1925)	Society of Statisticians and Accountants, Limited	c.300
1927	Professional Accountants' Alliance, Limited	158
1928 (formed 1927)	Faculty of Auditors, Limited	c.200
1929 (formed 1928)	Institute of Company Accountants, Limited	c.600

Source: Dr Philip A Talbot (unpublished)