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# Management accounting change in South Africa

## Case studies from retail services

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***Abstract*** *Most research on management accounting change relates to practices in developed countries. This paper reports on a field study of management accounting change in the South African context. It uses a contingency theory framework within four retail companies to understand the processes of their management accounting systems change and to explore the rationales for such change processes. The findings indicate considerable changes in management accounting systems within the four cases. Such changes include increased use of contemporary management accounting practices notably activity-based cost allocation systems and the balanced scorecard approach to performance measures. The paper suggests that recent environmental changes in the South African economy arising from government reform/deregulation policy and global competition largely facilitated the management accounting change processes within the participating organisations.*

## Introduction and the study

The recent management accounting literature suggests that the environment in which management accounting is practised certainly appears to have changed with advances in information technology, highly competitive environments, economic recession, new management strategies, and a new focus on quality and customer services (Hopwood, 1990; Innes and Mitchell, 1995; Libby and Waterhouse, 1996; Kaplan and Norton, 1996; Scapens, 1999; Burns and Vaivio, 2001; Haldma and Laats, 2002; Hussain and Hoque, 2002). In a bid to support such changes in the operating environment, management accounting practice in many developed countries has introduced new cost and management accounting systems such as activity-based costing (ABC), activity-based management (ABM), target costing, product life cycle costing, quality cost management, customer accounting, and the balanced scorecard (BSC) approach to performance measures (Innes and Mitchell, 1990; Peasnell, 1993; Libby and Waterhouse, 1996; Vaivio, 1999; Gray *et al.*, 2001; Haldma and Laats, 2002; Hoque, 2003). However, there is little research on the adoption of these practices in developing countries (for example, Wallace, 1990; Hoque and Hopper, 1994, 1997; Anderson and

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Lanen, 1999; Narayan *et al.*, 2000; Abdul-Rahman and Lawrence, 2001; Luther and Longden, 2001). This paper attempts to bridge this apparent gap in prior research by contributing to our understanding of management accounting change in the South African context.

All organisations are open systems since they receive resource inputs from the external environment and the resultant output goes back to the environment (Otley and Berry, 1980). To succeed, a company has to maintain a consistent relationship with the environment (Otley, 1980). Shields (1997) and Scapens (1999) suggest that changes in the environment cause changes in organisations, which in turn causes changes in management accounting practices. Despite this argument several researchers (e.g. Pettigrew and Whipp, 1991; Pettigrew *et al.*, 1992; Atkinson *et al.*, 1997) suggest that we have little understanding of why organisations tend to change their management accounting systems.

However, research on management accounting change mostly relates to practices in developed countries. Literature has cautioned against the transportability of these practices across nations (Kaplan, 1983; Johnson and Kaplan, 1987; Bromwich and Bhimani, 1989; Wallace, 1990; Atkinson *et al.*, 1997). Bromwich and Bhimani (1989) argue that merely transplanting new management accounting systems devised in foreign settings for coping with a changing business environment is not totally satisfactory because of the diverse conditions under which different companies operate. They further argue that consideration should always be made of the political, economic, social and cultural environments that surround the firm. In the context of developing countries insights of the "imported" systems may be gained by undertaking studies of the manner in which foreign companies establishing operations in developing countries adjust their management accounting systems to the context of the developing world (Wallace, 1990; Peasnell, 1993; Chow *et al.*, 1994, 1999).

Vally (1998) investigated the domestic transfer pricing methods used by large South African industrial companies. He found a significant relationship between the size of the company and the transfer pricing method used by South African firms. Shotter *et al.* (2000) examined the relevance of management accounting education in South African tertiary institutions. They found a wide gap between what is taught at tertiary institutions and what is practised in the field of management accounting. Taylor *et al.* (2001) compared the use of performance measures in Australia (a developed country) with Mauritius (a developing country). They found that chief executive officers in Australia relied more frequently on financial measures whereas those in Mauritius relied more on non-financial measures.

In developed countries, evidence exists on the changes that have taken place in management accounting during the last decade. Most of the research carried out in these countries was in reaction to the claim by Johnson and Kaplan (1987) that management accounting had not changed during the last 60 years despite the changes in the operating environment. In Canada, Libby and Waterhouse (1996) reported a 31 per cent change in management accounting systems within a period of three years, refuting claims that management accounting is generally resistant to change. Burns *et al.* (1999) argued that there have been significant changes in management accounting practices in the UK during the last decade. They argued that the change is in the way management accounting is used and not necessarily in the introduction of new systems or techniques.

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This paper expands on prior management accounting change research by presenting evidence from four retail firms in South Africa. So doing, it explores "why" and "how" management accounting systems have changed and why "new" or innovative practices have or have not been adopted in the participating organisations. Using a contingency theory framework, discussion of which follows, the primary objective of this paper is to contribute to our understanding of the adoption of changes in management accounting systems in a developing country context.

The remainder of this paper is organised as follows. The next section presents the study's theoretical framework, followed by the research method adopted. The case studies are then presented, followed by a comparative analysis of the findings. The final section concludes the paper.

## Theory

Contingency theory (Burns and Stalker, 1961; Lawrence and Lorsch, 1967) provides an explanation of why management accounting systems vary between firms operating in different settings (Otley, 1980; Innes and Mitchell, 1990; Fisher, 1995; Chapman, 1997; Drury, 2000). As Otley (1980) suggests:

> The contingency theory of management accounting is based on the premise that there is no universally appropriate accounting system applicable to all organisations in all circumstances.

Rather the contingency theory attempts to identify specific aspects of an accounting system that are associated with certain defined circumstances and to demonstrate an appropriate matching. We identified the following contingent factors, which might influence the change in management accounting systems in the participating organisations:

- economic constraints;
- deregulation/global competition;
- technological advancement; and
- size and type of organisations.

In developing countries wage levels and commodity prices are relatively lower than those of developed countries (World Bank, 1998; IMF, 1999). However, computer costs are much higher partly due to importation costs. The information processing systems are therefore different, which creates the need for different management accounting systems.

Most developing countries still suffer from poor infrastructure components such as telecommunications, transportation networks and unreliable power supply (IMF, 1999). Some contemporary production strategies and management accounting techniques such as just-in-time (JIT) manufacturing and activity-based costing (ABC) may not be practical under such conditions (Peasnell, 1993).

The period between 1990 and 2000 was characterised by the opening up of most developing economies. Many state owned enterprises have since been privatised, while most of the protectionist barriers have been removed, substantially altering the competitive environment in these economies (IMF, 1990; Narayan *et al.*, 2000). Globalisation has exposed companies in developing countries to stiff competition. Most of them now have to cope with the declining market share while several have been

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forced out of the market. Companies operating in these countries now require quality and timely information and hence the need to change their management accounting systems. Research provides evidence that managers faced with high levels of competition require a variety of both financial and non-financial information for making organisational decisions (Libby and Waterhouse, 1996; Hoque *et al.*, 2001; Cooper, 1995).

The introduction of fast microcomputers and the widespread use of the Internet have greatly affected the technological environment within which firms in developing countries operate. Such changes have also affected the production and product or service delivery processes. Customers have also become more demanding insisting on high quality products at competitive prices. This has resulted in an increased focus on quality and better customer service by those firms wishing to retain competitiveness (Whitley, 1999; Cooper, 1995). With globalisation a company can survive and prosper only if its costs, quality and product capabilities are as good as those of the best companies in the world.

Management accounting literature has identified technological advancement as a potential predictor of management accounting change (Johnson and Kaplan, 1987; Kaplan and Norton, 1996). Innes and Mitchell's (1990) study suggests that increased production automation may lead to an establishment of machine and equipment related performance measures. They further report that the importance of maintaining quality standards as technology changes have an important influence in the development of quality cost information. According to Argyris and Kaplan (1994), successful introduction of innovative technical initiatives within organisations requires education of those to be affected by the initiative, sponsorship from senior management, and the creation of internal commitment to the initiative.

Size and nature of business may also determine the range of possible change in organisational systems. For example, since large organisations have adequate resources to develop new management accounting techniques, their systems are expected to be different from those of smaller companies (Innes and Mitchell, 1995; Hoque and James, 2000; Hussain and Hoque, 2002). These two factors were controlled for in the sample, as these were the criteria used for sample selection, thus no deviation would be expected among the four cases.

There are many other factors that hinder management accounting change. These may include lack of adequate accounting skills; new shareholders; fear of change; "no need for change" attitude; and lack of adequate communication between management and staff. There is a wide body of literature to support this (see for example, Lee, 1987; Hopwood, 1990; Innes and Mitchell, 1990; Kellet and Sweeting, 1991; Coates *et al.*, 1992; Cobb *et al.*, 1995; Brignall, 1997; Malmi, 1999; Burns and Scapens, 2000; Luther and Longden, 2001; Hoque, 2003).

The above contingent factors are expected to impact on the adoption of changes in management accounting system in the case study organisations. In this study it is recognised that organisations operate in a wider setting – the internal and external environments. Where these environmental conditions are different among organisations, the patterns of management accounting practices are expected to be different and where these conditions have changed over time the management accounting practices are expected to have changed too (Brignall, 1997). Viewed from such a contingent perspective, one would predict that different environmental

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conditions might create the need for different types of management accounting systems. We attempt to see if the above theoretically defined pattern is found in the cases[1]. So doing we explore the following questions:

- What are the management accounting systems in use in the case organisations?
- Have management accounting systems in the case organisations changed significantly during the last decade?
- What factors facilitate and/or hinder management accounting systems change in the case organisations?

## Research method

This study adopted a multiple case study approach based on detailed fieldwork. The field studies were conducted in 2001 between June and October. A letter requesting the finance directors to participate in a face-to-face interview was sent to seven companies who had earlier responded to a questionnaire survey. The companies were selected on the basis of their size and past financial performance. Size was measured in terms of turnover with companies with a turnover of over 2 billion Rands and an average operating income of over 100 million Rands. Large and better performing companies have the ability to change their management accounting practices as circumstances in their operating environment changes. Two of the selected companies refused to participate in the study citing confidentiality of the information sought and lack of time. Four out of the five companies that agreed to participate were listed on the Johannesburg Stock Exchange (JSE) under "retail". The other company was listed under "hotel and leisure" and at the time of this study it was small in terms of its turnover and number of employees. As such, this company was dropped from the sample for analysis. Table I presents the characteristics of the four participating companies.

An interview guide together with an interview questionnaire (see Appendix) was sent to the participants a week before the date of the interview. It allowed them time to prepare. The interviews took between $1\frac{1}{2}$ to 2 hours. The information collected was supplemented by reviewing other publicly available information relating to the companies (e.g. financial statements) before the interview and management accounting reports during the interview. All the participating companies requested complete confidentiality of the information given. In view of this, the companies' actual names have not been used in the report and will henceforth be referred to as "ACB", "XYZ", "MNO" and "OLA".

| Company | Business life (years) | Business scope | Turnover (billion Rands) | Number of full-time employees | Number of qualified accountants | Average three year operating income (million Rands) |
|---|---|---|---|---|---|---|
| ACB | Over 20 | International | 6 | 10,000 | 35 | 330 |
| XYZ | Over 20 | International | 7 | 28,000 | 14 | 180 |
| MNO | 6 | International | 3 | 5,000 | 8 | 130 |
| OLA | Over 20 | International | 2 | 6,000 | 11 | 170 |

**Note:** The above figures have been approximated to preserve the anonymity of the respondents

**Table I.** Characteristics of the subject firms

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Yin (1994) suggests four tests to establish the quality of a field study. These are:

(1) Construct validity.

(2) Internal validity.

(3) External validity.

(4) Reliability.

In this study construct validity was addressed through multiple sources of evidence that include face-to-face open-ended interviews, archival sources, company Web sites, and structured questionnaires. Internal validity was addressed through pattern matching, which concentrated on how and why the pattern of observation about each case is consistent or inconsistent with the theoretical prediction. External validity was addressed through replications logic. This analysis focused on cross case analysis and comparison of the results. Results from each case were considered to be findings that were subject to replications by other individual cases. If the findings obtained in subsequent cases were also consistent with the theory, the research concluded that the validity of the theory had been strengthened. If the pattern obtained in the second case was similar to the pattern in the first case, we interpreted this as a replication. The research also tried to understand and explain any deviations of the patterns from the theory. Finally, reliability was addressed through the use of face-to-face interviews and a structured questionnaire.

As shown in the Appendix, a list of 27 different management accounting and control systems divided into five main types were provided to the respondents:

(1) Planning.

(2) Controlling.

(3) Costing.

(4) Directing.

(5) Decision making.

A total of 23 systems were adopted directly from Libby and Waterhouse (1996), while the other four were identified through an extensive review of current management accounting literature (e.g. Kaplan and Atkinson, 1998; Horngren *et al.*, 1999; Drury *et al.*, 1993, Drury, 2000). The interviewees were invited to add any other system that existed in their organisation, but none of them did.

**Case study 1: ACB company**

ACB company was founded in the 1930s and is listed on the JSE under the retailing category. It deals mainly with clothing and cosmetics focusing on quality and customer service. At the time of this study, it had an annual turnover of over 5 billion Rand and employed over 10,000 people. It operated both in South Africa and abroad.

We observed the following management accounting and control systems in use in the organisation.

*Planning systems*

ACB currently operates a formal budgeting system. The master budget is prepared every year, but revised every quarter for any changes that had not been taken into account at the beginning of the financial period. This was confirmed by reviewing the

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recent copies of budgets held in the department. We may, therefore, say that the company operates a revolving budget. Hope and Fraser (1998) recommended the use of rolling forecasts rather than fixed budgets in dynamic operating environment. The respondents, however, advised that this form of budgeting was only introduced four years ago after the company realised that the existing fixed budget usually resulted in unrealistic variances at the end of the year.

Forecasting of sales revenue was based on sales revenue relating to the previous year. This was normally increased with a certain percentage decided by senior management. Prices were determined at head office using the cost plus profit method. Divisions and branches were required to submit monthly profit reports until two years ago when the company computerised its reporting system. Presently senior management is able to access this information online and hence the hard copy reports are no longer required.

Capital investment appraisal is presently being done using the net present value (NPV) capital appraisal method. Before computerisation, however, the payback period (PBP) was the most commonly used method. Most developing countries experience high levels of environmental uncertainty, hence the need for sophisticated management accounting systems (Mia and Chenhall, 1994; Taylor *et al.*, 2001; Haldma and Laats, 2002). The respondents, however, emphasised that the company usually adopted more than one method to appraise capital investment projects, which includes managerial judgement. In several cases the company had initiated projects that would have been rejected if the formal accounting methods had been used in isolation (e.g. in the establishment of new branches). Hoque and Hopper (1994, 1997) reported similar observations.

The company maintained a five-year strategic plan. This plan, which was viewed by the researchers, was usually adjusted annually with changes in the operating environment. The respondents, however, viewed that such adjustments only became necessary after the liberalisation of the South African economy in 1993/1994. Before then the operating environment was relatively stable and hence such adjustments were not necessary.

*Performance measurement systems*

The most important performance evaluation systems in the organisation were the team-based performance measures. Developing countries' cultures tend to be more collective when compared to those of developed countries (Anderson and Lanen, 1999; Chow *et al.*, 1999) hence the suitability of team-based performance measures. The company used both financial and non-financial measures to measure the performance of its managers and divisions. Some of the notable performance measures include the ratio of sell and buy, gross revenue per square metre used, and income per head.

Organisational performance measures were mainly based on financial measures such as sales growth, gearing, return on capital employed (ROCE), and return on investment (ROI). However, performance in terms of quality, customer satisfaction and on-time delivery were in the early stages of introduction. For example, in the company food business customers were promised a refund of their money if their orders were not delivered within a specified period of time. Such refunds were debited to the department that caused the delay.

*Costing systems*

Overhead costs were allocated to products using simple allocation bases such as turnover, square metres, and cost of direct labour. The proportion of indirect costs was

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considered to be too low to necessitate the introduction of activity-based costing (ABC). Management accounting textbooks state that the adoption of ABC may not meet the cost/benefit consideration where overhead costs are considered to be insignificant (e.g. Kaplan and Atkinson, 1998; Drury, 2000). Pricing of inter-divisional transfers was mainly based on negotiation between the departmental heads. However, the respondents suggested that it had since been established that this was causing delay and at times conflict among divisions. Consequently, the company was in the process of introducing number of hours spent as a base of setting transfer prices.

*Performance management reporting*

More changes occurred in this category than in any of the three other categories discussed above. For example, reports that were previously prepared on a quarterly or semi-annual basis are now being prepared weekly and at times daily. We reviewed reports such as list of overdue debtors, large debtors' reports, and customer complaints reports. The increase in the frequency of these reports was attributed to the success of the computerisation program. A senior finance director had this to say on the company's reporting process:

> Performance reporting process in the company is now heavily reliant on non-financial measures, unlike five years ago when the process was financially based. Computerisation has also enabled the accounting department to report accounting information using figures, trends and charts. This form of reporting has created a lot of interest in our information particularly among the non-accountants.

Management accounting information is currently reported to a wide range of people unlike previously when the reports were sent to a single or a few people. The company has been able to delegate substantial decision-making authority to the frontline staff. A frontline supervisor remarked:

> This is the point where most of our problems occur. If these problems can be solved at that point, then we can concentrate on other more important issues relating to the company's businesses.

*Incentive systems*

Major changes were made to the company's incentive system two years ago. Bonuses were introduced to reward high performers. A scholarship program was also introduced to benefit those employees who wished to further their education. Employees were also encouraged to buy the company's shares.

In total, ACB had in place 20 out of the 27 management accounting systems listed in the questionnaire.

Interviewees suggested that despite the liberalisation of the economy, most capital investment decisions were still politically motivated. Consequently the capital investment appraisal methods appearing in management accounting literature were not always appropriate for decision making. In regard to the implementation of ABC, the interviewees advised that the company's level of indirect costs could not justify its adoption. When reminded that ABC could still be useful for customer profitability analysis in view of the current levels of competition, the respondents insisted that ABC could still not meet the cost/benefit consideration.

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The respondents advised that just-in-time (JIT) philosophy was considered inappropriate for the company since most of its suppliers were situated far away and that the country's infrastructure could not be relied upon.

The respondents advised that 16 out of the 20 existing management accounting systems had changed during the last decade. For example, the company had introduced a revolving budget three years ago while discounting cash flow methods had replaced the pay back period method. Further, the company had introduced the use of non-financial measures of performance while most decisions were now being made at the point where the problems occur, suggesting some degree of decentralisation. Interviewees identified international competition and change in technology as potential influences on the above designs of management accounting and control systems. Furthermore, lack of adequate computing resources, lack of adequate accounting skills, and fear of change were considered to be factors that hindered change in the organisation's management accounting and control systems. It appears, as contingency theory in management accounting suggests, that different societies with local institutions have influence on the organisational designs such as the management accounting system (Otley, 1980; Chapman, 1997).

**Case study 2: XYZ company**

XYZ company was founded in the 1960s and is listed on the JSE under the retailing sector. At the time of this study, it was one of the largest supermarket chains in the country mainly dealing with retailing food, clothing and general merchandise, with an employment of over 20,000 people and branches throughout Southern Africa. In 1999 it reported an annual turnover of over 7 billion Rand.

We found the following management accounting and control systems in use in the company:

*Planning systems*

XYZ company operates a budgeting system. A master budget is prepared every six months and is revised every month for changes that had not been accounted for at the beginning of the period. Consistent with the recommendations of Hope and Fraser (1998), the company uses zero-based budgeting (ZBB) to prepare its budgets although it intends to introduce activity-based budgeting (ABB) in the near future. The respondents advised that ABB though superior to the other methods had been found to be too expensive. ZBB was introduced six years ago after the company realised that incremental budgets that were being used resulted in unrealistic variances at the end of the period. The respondents took the view that significant money and time were being spent to investigate these variances.

To forecast sales revenue, the company mainly uses the past experience of its senior managers. This information was supplemented by other information obtained from market research mainly conducted by the company's sales team. Once a year the company engaged the services of an outside consultant to conduct a market survey on behalf of the company.

NPV is the most widely used method for capital investment appraisal. This method was adopted in 1996 after the company realised that the PBP method that was being used might yield misleading results due to the changing business environment (Haldma and Laats, 2002). The respondents were, however, quick to point out that NPV

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was never used in isolation. Other methods were also applied depending on the size of the project. For example, the company used PBP for investments that were considered to be small. In all cases, the decision on whether to implement a project or not was vested on the judgement of senior management. Several projects were implemented in the past although they had failed to pass the accounting test. Interestingly, the respondents advised that most of these projects had later proved to be viable.

A senior executive pointed out that strategic issues like the type of business and market to trade in were determined by senior management. The company's strategic plan covered a period of five years, but was under constant revision for any changes in the operating environment. When asked how long the company had maintained a strategic plan, another executive said:

> For as long as I can remember and I have been in this company for the last 25 years.

*Control systems*

The company placed a high emphasis on team performance. The team performance measurement was mainly based on divisional profits and/or reduction of loses (if the division was making losses), profits per head, customer per head, number of customer complaints in the division, and number of staff trained during the period. Recently, the company had introduced economic value added (EVA) as a measure of divisional performance. Individual performance evaluation was mainly based on the extent to which the individual attained the goals set at the beginning of the period. An interesting measure was on the extent to which the individual had participated in theft and fraud prevention.

Organisational performance measures were mainly financial. According to the respondents, the most common measures are profit, ROI, turnover, gearing, dividend paid out, etc. Several non-financial measures had recently been introduced, notably the cost of quality measure, which includes the following: cost of failure (based on customer returns) and cost of prevention (based on quality inspections and supplier evaluation). Organisational performance was also based on the extent to which the company had increased its market share. This evaluation was based on the outside consultant's report.

*Costing systems*

XYZ separated its costs into their fixed and variable components. This classification was based on past managerial experiences. To allocate indirect cost (mainly marketing and branding costs), the company used simple cost allocation bases such as turnover, square metres and cost of direct labour. The respondent advised that the company was currently 60 per cent satisfied with the current product costing system. The company intends to introduce ABC in the near future. Drury *et al.* (1993) argue that companies operating in a highly competitive environment are more likely to consider the adoption of ABC.

The total cost of producing a unit plus a percentage of profit was the method commonly used by the company's divisions in relation to transfer pricing. The mark-up has been set by head office and is applied across the organisation.

*Performance management reporting*

Like ACB, decision-making within XYZ company had experienced the highest degree of change during the last decade. Information was now being reported more frequently.

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For example, reports that were previously prepared on a monthly/quarterly/or semi-annual basis are now produced weekly or daily (as and when they are required). This has been facilitated by the easily available information that previously took a long time to obtain. The respondents attributed this success to the computerisation of the accounting department in the mid-1990s.

XYZ is able to utilise non-financial information in decision making, since this data is now available. Examples of the non-financial measures used include customer satisfaction, cost of quality, on-time delivery. Asked to comment on the effect of the use of non-financial measures on the company's decision-making process, one respondent had this to say:

> The main advantage of these measures is that they allow us to think beyond numbers. These measures are able to give us an indication of the direction our business is taking.

Since the completion of the computerisation process, the management accounting department is able to report its information more broadly, i.e. more managers are able to view the reports online, long before management meetings. This has greatly reduced the time taken in such meeting and has also improved the quality of the decisions made.

*Incentive systems*

In addition to the bonus reward system that the company introduced in the mid-1990s, the company has recently introduced a system where it sponsors highly performing individuals for overseas trips. Cash rewards and recognition certificates are awarded to those employees who are able to prevent theft and fraud.

XYZ had in place 24 out of the possible 27 management accounting systems listed in the interview guide.

As presented above, the respondents advised that due to the current levels of product and price competition, consideration was being made to introduce ABC in the near future. However, like ACB company, the implementation of JIT was considered inappropriate since the company's suppliers were situated far away from the company. Although the respondents claimed to have introduced the balanced scorecard (BSC) philosophy, the performance measures had not been grouped into the four categories advocated in the literature. When asked about the appropriateness of the BSC, one finance manager responded:

> We have implemented what we think is appropriate to our business. We cannot implement everything that was suggested by the two gentlemen (referring to Kaplan and Norton, 1996), as some of these recommendations are inappropriate to our business.

Interestingly, as the interview progressed, it became evident that almost all the measures suggested in the BSC literature were being used in the organisation. We can attribute the respondent's views to a lack of understanding of the BSC philosophy. This is expected in a developing country, which experience low levels of accounting training, as identified in Haldma and Laats (2002).

XYZ's management accounting practices had recently changed considerably. The respondents advised that 22 out of the existing 24 management accounting systems had changed during the last decade. For example, the company now used ZBB and discounted cash flow methods, while EVA was being introduced as a measure of

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divisional performance. Non-financial measures such as cost of quality and on-time delivery had also been introduced during the last decade.

The respondents saw changes in the operations of the business as the main factor that had facilitated management accounting change. They attributed these changes mainly to an increase in both local and international competition after the liberalisation of the South African economy and changes in production and information technology.

The following factors were identified as having hindered management accounting change:

- fear of change;
- lack of resources to finance change;
- problems of communication with line management; and
- "no need for change" attitude.

## Case study 3: MNO company

MNO company was established in the early 1990s after the former company sold its business to a wholly owned subsidiary. The company is listed on the JSE under the retail sector. It engages mainly in discount retailing of toiletries, cosmetics and other merchandise in Southern Africa and abroad. In 1999 the company employed over 5,000 employees and had reported an annual turnover of over 3 billion Rand.

Our field study revealed the following management accounting and control practices in use within the company:

*Planning systems*

The company operates a flexible budgeting system. The master budget, which was viewed by the researcher, is prepared by increasing/decreasing the previous year's sales/costs. Before 1998 the company operated a fixed master budget, which was compared to the actual results at the end of the financial year. The company, however, realised that huge variances, which required investigating and explaining usually occurred at the end of the year. After holding several brainstorming meetings, the company decided to replace the fixed budget with the current flexible budget.

The company mainly relies on the previous year's sales to determine the sales of the coming financial year. The company's top management usually decides the mark-up. Commodity prices within South Africa are also set by the company's head office although branch managers have limited discretion to vary these prices, as long as they are able to meet the targeted profits. Overseas prices are determined by the company officers in those countries, but the target profit figures are always agreed at the beginning of the period with the South Africa head office.

NPV is the most commonly used method in capital investment appraisal. This is consistent with what is expected in a developing country, which experiences high levels of uncertainty (Taylor *et al.*, 2001; Mia and Chenhall, 1994; Haldma and Laats, 2002). However, the method is normally used together with other capital appraisal methods like PBP and IRR. The respondents advised that the company never used the accounting rate of return (ARR), as it was considered to be inferior. The final implementation decision was, however, based on managerial judgement. The respondents cited cases where the company had implemented projects that had failed the formal accounting appraisal test. Although this is inconsistent with theory, most of these projects were said to have been successful.

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*Control systems*

Team-based performance measures were considered to be more important than individual performance measures. The respondents explained that anything that was achieved by the organisation was as a result of teamwork and could not be specifically tied to an individual. Team-based performance measures would be expected in a developing country where cultures are said to be more collective with high levels of risk avoidance (Anderson and Lanen, 1999; Chow *et al.*, 1999). Measures such as income per employee, turnover per head, and turnover per square metre had recently been introduced in the organisation.

To measure the overall performance of the organisation both financial and non-financial measures were used. Non-financial measures were introduced during the last five years after financial measures failed to meet management's expectations. Performance measures in terms of quality, customer satisfaction, and delivery innovations are now being used to supplement financial measures.

*Costing systems*

The company separated costs into their fixed and variable components. This classification was mainly subjectively based on managerial experience. Indirect costs were allocated to individual products mainly using activities performed as the allocation base. This allocation method was introduced two years ago after the company suspected that some of its product prices were not realistic. The company indicated that 40 per cent of the total costs in the organisations are classified as indirect costs. Other allocation bases such as direct labour costs were times used to supplement ABC.

*Performance management reporting*

These systems had experienced the most changes during the last decade. The respondents associated this high rate of change to the introduction of fast computers, which have made information easily obtainable. Consequently, the management accounting department now produces reports more frequently than was previously feasible. Accounting information is also reported more broadly. For example reports that were previously prepared and sent to one or two offices are now available online to all managers.

The use of non-financial measures of performance was also associated with the timeliness and quality of information. Information such as customer complaints (previously held by customer relations alone) can now be obtained from the computer system.

*Incentive systems*

The company respondents reported an increased use of monetary rewards by top management to motivate its employees. The company also introduced a new scheme to assist members of its staff to acquire its shares. The respondents had this to say in praise of the employee share scheme:

> In the long run we want to create an atmosphere where all of us feel like owners rather than employees of this company. Our staff have shown a lot of interest in the scheme and we have all reasons to believe that we shall succeed.

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MNO had a total of 18 out of the 27 management accounting systems appearing in the questionnaire.

The respondents advised that despite the liberalisation of the economy, most capital budgeting decisions were still politically motivated. This made the capital investment appraisal methods described in the accounting and finance literatures inappropriate. Although ABC was introduced two years ago, the interviewees felt that this could not be used in isolation. There was the need to supplement the use of ABC with the traditional cost allocation bases such as direct labour. JIT was considered to be inappropriate as the respondents considered the country's infrastructure to be inadequate. Further, the company's suppliers were spread throughout the country.

A total 15 out of the 18 management accounting systems were reported to have changed during the last decade. For example, the company had implemented a flexible budget in 1998 while non-financial measure of performance had been introduced five years ago. Availability of online information had enabled the company to report management accounting information to more people.

The respondent attributed management accounting change to the following factors:

- increase in local/global competition after the liberalisation of the South African economy;
- changes in technology, in particular information technology; and
- poor financial performance.

With regards to the factors hindering management accounting change the following factors were mentioned: lack of adequate computing facilities; management inertia; and lack of trained accountants.

**Case study 4: OLA company**

OLA company was formed in the 1940s and is listed on the JSE under the retail sector. The company deals with retailing fashion apparel and other related merchandise. It operates in the whole of Southern Africa and in the Middle East. In 1999 the company employed over 6,000 people and had reported annual sales revenue of over 2 billion Rand.

Our field study revealed the following management accounting and control practices in use within the company.

*Planning systems*

The company operates a formal budgeting system, which is prepared on an incremental basis. Occasionally the company uses ZBB to prepare the master budget. The flexible budget was adopted in 1994 after the company realised that fixed budgeting, then in use, did not serve the desired control system. Hope and Fraser (1998) reported similar observations.

Sales are mainly forecast subjectively based on staff experience. However, the company at times conducts marketing research using its own sales people to supplement this information. The researcher reviewed copies of the marketing research reports. Statistical regression methods were never used.

Until 1993 the PBP method was the company's most preferred method for capital investment appraisal. However, due to the dynamic economic environment that prevailed in the country after liberalisation, the company changed to NPV. The PBP is

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still used to evaluate small projects. As with the other companies visited, managerial judgement played a significant role in capital investment appraisal.

Strategic planning is the role of senior management although middle level managers are usually consulted. The company has in place a five-year strategic plan, which is usually revised every year for adjustments on any major changes in the company's operating environment.

*Control systems*

The company uses both individual as well as team based measures to control its operations. The measures used have been changing over time. A notable change is the inclusion of non-financial measures, which were not in use ten years ago. Measures such as customer satisfaction, product quality, and delivery innovations are now widely used in the company.

To measure the overall performance of the organisation, the company utilises financial as well as non-financial measures. The most common financial measures include accounting profit, turnover, ROI, and EVA (introduced recently). The most common non-financial measures include market share, customer satisfaction, and staff turnover. The respondents reported that the company was in the process of introducing cost of quality measurement systems.

*Costing systems*

The company separates its costs into their fixed and variable components. Presently the company estimates that fixed costs average between 30-40 per cent of the total costs. To allocate fixed costs to products, the company now uses the costs of activities performed as the main allocation base. Other traditional allocation bases such as direct labour at times supplement this.

For transfer pricing, the total cost of producing the product plus a negotiated mark-up is used as the transfer price. The divisions involved with the transfer negotiate the mark-up.

*Performance management reporting*

As in the case of the other four companies visited, decision-making systems had undergone the most changes during the last decade when compared to the other management accounting systems. The main contributing factor was again the introduction of new and fast computers, which had greatly improved the processing of information. Accounting information is now reported more frequently and broadly, while the use of non-financial measures has been made possible.

Most of the company's operating decisions have now been delegated to the front office staff. This is facilitated by the fact that the front office staff now has access to online information relating to customers. According to the respondents, the move has greatly improved the company's image in the eyes of the customer.

*Incentive systems*

The company uses both bonus and pay for performance plans to motivate its employees. However, the manner in which these are used has been changing over time. For example, when bonuses were first introduced in 1994, they were given on a fixed

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amount basis. It emerged during the interview that bonuses are now based on a percentage of the improvement in performance.

Other reward systems introduced during the last five years include scholarship for college tuition fees for the best workers, overseas trips, and promotions.

The company had in place 20 out of the 27 management accounting systems that were included in the questionnaire.

Managerial judgement was used as the most important method for making capital investment decisions. This was used to supplement conventional capital budgeting methods such as NPV, which were considered inappropriate in view of the country's social and political conditions. ABC was currently being used to allocate indirect costs to products. However, at times it was supplemented by other traditional allocation bases such as direct labour, an indication that ABC alone was not considered appropriate. JIT was considered inappropriate due to the country's poor infrastructure. Although the company had introduced the BSC, the respondents felt that more qualified personnel were required if the company was to obtain all the benefits of the approach.

A total of 16 out of the 20 management accounting systems that existed in the company had changed during the last decade. Notable was the introduction of the flexible budget in 1994 and the change from non-discounted cash flow methods to the discounted methods in 1993. Consistent with the findings of Taylor *et al.* (2001), BSC type measures of performance had been introduced after the liberalisation of the economy.

The respondents identified the following factors as being the main motivators of change in the organisation's management accounting system:

- increasing competition after liberalisation of the South African economy;
- changes in technology; and
- poor financial performance.

The following factors were said to be the main factors that hindered change in the organisation:

- inadequate computing facilities;
- management inertia; and
- lack of skilled accountants.

## Comparative analysis

Using a contingency theory framework developed in this paper, we now conduct a cross case analysis. This is presented by assessing how well the case evidence matches the pattern suggested by the theoretical framework and the extent to which the findings are replicated over the cases. The discussion is structured along the three research questions identified in section 2. Table II summarises the key findings.

*What are the management accounting systems in use in the case organisations?*

All the companies visited operated a formal budgeting system. All also operated a flexible budgetary system. As reported elsewhere (Hoque and Hopper, 1994, 1997), this type of budgeting fits well in a developing country where the economic environment is considered unstable. It has also been suggested that the economies of developing

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**Table II.** Summary of the key findings

| Summary of findings | Company ACB | Company XYZ | Company MNO | Company OLA |
| --- | --- | --- | --- | --- |
| Number of MASs | 20 | 24 | 18 | 20 |
| Number of MASs that have changed | 16 | 22 | 15 | 16 |
| Predictors of MASs change | Competition, technology, new shareholders | Competition, technology, new customer | Competition, technology, poor financial performance | Competition, technology, new accountants |
| Hindrances of MASs change | Computing resource, accounting skills, management inertia | Fear of change, resource constraint | Computing resources, management inertia | Computing resources, management inertia, accounting skills |
| Planning: budget systems | Flexible | Flexible | Flexible | Flexible |
| Budget process | Incremental | ZBB | Incremental | ZBB |
| Strategic plan | Yes | Yes | Not seen | Yes |
| Capital investment appraisal method | NPV, managerial judgement | NPV, PBP | NPV, PBP | NPV, PBP |
| Controls: non-financial measures | Quality, customer satisfaction | Quality, market share | Customer satisfaction, quality | Market share, customer satisfaction |
| Directing: individual performance measure | Team-based | Team-based | Team-based | Team-based |
| Costing: cost allocation base | Simple | Simple | Simple | ABC plus simple |
| Decision making: reports | More frequently | More frequently | More frequently | More frequently |

**Notes:** MASs = management accounting systems; ZBB = zero-base budgeting; ABC = activity-based costing; NPV = net present value; PBP = payback period

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countries are relatively unstable when compared to those of developed countries (World Bank, 1998; IMF, 1999). In a UK survey, Drury *et al.* (1993) reported that only 42 per cent of the 300 companies surveyed operated a flexible budget. The remaining 58 per cent operated a fixed budget. This may be attributed to the stable economic conditions prevailing in the UK economy.

Companies ACB and MNO prepared their budgets on an incremental basis, while XYZ company used ZBB. OLA company used incremental budgeting, but at times adopted ZBB. The popularity of incremental budgeting amongst these firms may be attributed to the fact that this method is less costly and less time consuming when compared to ZBB.

Sales forecasting was mainly carried out subjectively based on experienced staff in the companies visited. Companies XYZ and OLA usually supplemented this by way of marketing research mainly conducted by their sales people. No company used statistical regression methods to forecast sales. Management accounting textbooks recommend the use of statistical methods to forecast sales revenue. However, in developing countries data may not be available to facilitate the use of these methods. Statistical methods may also not meet the cost/benefit consideration in a developing country where the cost of information processing is still high.

All the companies visited indicated that NPV was the most frequently used method for capital appraisal. All the respondents also indicated that the most frequently used method before liberalisation of the country's economy and the computerisation of their operations was the PBP method. It was also pointed out that NPV was never used in isolation. It was usually supplemented by other methods including managerial judgement. The widespread use of discounted cash flow methods for capital investment appraisal may be attributed to the instability prevailing in their economies, hence the need to discount future cash flows (Taylor *et al.*, 2001; Haldma and Laats, 2002), and the introduction of fast computers which have made computations simple. These findings are consistent to those of Coltman (1995) and Correia (1996). Studies in developed countries have shown widespread use of non-discounted cash flow methods (Drury *et al.*, 1993; Scarbrough *et al.*, 1991; Tranan and Gitman, 1995; Pike, 1996; Dardenne, 1998).

All the companies visited reported that team-based performance measures were more important than individual performance measures. Cultures of developing countries are said to be more collective than those of developed countries (Chow *et al.*, 1994, 1999; Anderson and Lanen, 1999). In developing countries most of the tasks are communal rather than individual-based. Widespread poverty in these countries may have contributed to the development of this form of culture (Wallace, 1990). The companies visited used both financial and non-financial measures of performance. The research findings are consistent with those of Taylor *et al.* (2001). It should, however, be pointed out that unlike in developed countries where use of non-financial measures have existed for a long time, this study reveals that most of the non-financial measures in the organisations are still in the early stages of introduction, for example, the cost of quality measures in companies XYZ and OLA.

Companies ACB and XYZ used simple traditional cost allocation bases like turnover, square metres, and direct labour costs to allocate indirect costs to products. Although companies MNO and OLA indicated that they had since introduced ABC, the system was used mainly for profit analysis rather than for product costing. Even when it was used to cost products, it was usually supplemented with other traditional cost

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allocation bases such as direct labour. The respondents pointed out that the proportion of their indirect costs was still relatively low – hence full adoption of ABC might not meet the cost/benefit consideration. The literature on developing countries suggests that labour is still abundant and relatively cheap in developing countries when compared to developed countries (World Bank, 1998; IMF, 1999).

Transfer pricing in companies XYZ and OLA was based on the cost plus method. The mark-up was determined by head office. The management accounting literature (from economic theory perspective) explains that this form of transfer pricing is desirable, as it tends to promote harmony within the organisation (Kaplan and Atkinson, 1998; Horngren *et al.*, 1999). At OLA company where transfer pricing was based on negotiation, management was in the process of replacing the system, as it had been found to be time consuming and at times leading to conflict among divisions.

All the companies visited used both monetary and non-monetary bonuses for motivating their employees. In three companies a staff loan scheme had been introduced to enable employees to buy the company's shares. Payment for college fees and sponsorship of overseas trips also featured prominently.

The introduction of fast computers in the last decade has contributed to the dramatic changes of the decision-making systems experienced in all four companies visited. Management accounting reports were now being prepared more frequently since information was now readily available. Information was now being reported to more people as they could now view it online. ACB company had already started using graphs, charts and trends to make management accounting information more understandable. The use of non-financial performance measures facilitated by the readily available information was said to have resulted in better decisions.

All the responding companies reported that political and social considerations were still major factors in South Africa when making capital budgeting decisions. The capital budgeting techniques alone were considered to be inappropriate and were supplemented by managerial judgement.

The three organisations that had not implemented ABC felt that their overhead costs were still relatively low to warrant a change in the cost allocation base. Most of them used square metres and labour costs to allocate overheads. For example, ACB company advised that the overhead costs average 10-15 per cent. Accordingly, activity-based costing implementation would not meet the cost/benefit consideration. Asked to state the degree of satisfaction with the current costing system the interviewee put it at between 60 per cent and 70 per cent. The respondents in the other two companies expressed similar views.

At XYZ company, the respondents questioned the view that BSC was a modern performance management technique. One interviewee stated:

> We had been using this technique for as long as I can remember. What the authors have now done is just to put the measures in writing.

Most respondents argued that trying to categorise the performance measure in the manner suggested in the BSC literature would make the information less understood by lower level managers, which is against the company's current policy. Kaplan and Norton (1996) caution that a company can have many performance measure (both financial and non financial) that enable management to capture the necessary vital signs but these are not necessarily the basis for competitive breakthroughs. The link

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between the company's objective and the four or more perspectives of the BSC is what is likely to lead to success.

With regards to JIT most of the respondents used this practice for staff scheduling, on time delivery and to reduce waste. There was limited use of JIT in inventory management. It is to be noted that all the responding firms were from the retail sector. Their goods are fast moving making it difficult for them to implement the JIT purchasing suggested in the literature. As presented in the previous section, Companies ACB, XYZ, and OLA advised that the poor infrastructure in the country coupled with poor supply chain management, hindered the use of JIT for the purpose of managing inventory.

The respondents were asked whether there were any traditional management accounting techniques that were considered superior to the modern techniques from a cost/benefit consideration. The traditional cost allocation methods were generally considered superior to ABC. The complexity of ABC implementation was also mentioned as one of its pitfalls. Also the managers interviewed had relatively low levels of overheads and tend to use ABC as a supplement to the traditional cost allocation methods.

When we asked the respondents whether there had been instances where management accounting information had been used for purposes other than decision-making, most of the respondents cited opening of new branches as a typical example. According to them this had at times been done without any capital investment appraisal, only for management accounting to be called in later to assess whether the project is viable. Two respondents also pointed out that some times in the past, products would be launched without their knowledge, only to be called in later to determine whether such products were profitable. However, this has not happened in the last few years, probably due to increased competition.

*Have management accounting systems in the case organisations changed significantly during the last decade?*

The findings reported indicate that on average, the participating organisations had implemented 17 changes in their management accounting systems during the last decade. If this change was to be interpreted on the basis of the existing systems, then on average 63 per cent of the management accounting systems changed during the last decade. As mentioned earlier, Libby and Waterhouse (1996) reported a 31 per cent change within a period of three years. In our study, performance reporting registered the highest change (34 per cent), followed by control (29 per cent), planning (18 per cent), directing (11 per cent), while costing ranked last with only (8 per cent).

The study provides evidence to reject the general view that management accounting has not changed or is generally resistant to change (Burns *et al.*, 1999). Evidence was also obtained to support the frequent change in systems that support decision-making. The respondents in this study felt that there had been a need to make more decisions at the point where the problems occurred (operational level) unlike in the past where most decisions were made at top management level. For example, ACB company believed that there was a need to make management accounting more understandable to all organisation participants. To achieve this, the company had introduced graphs and charts to replace the accounting numbers. This made accounting information more understandable which was considered to be important in developing countries where education standards are relatively low compared with developed countries.

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ACB company viewed quality of customer service as their main competitive edge. It was therefore necessary that timely and quality decisions be made at the operational level. Of late the customer has become more demanding and has a wider choice, hence the frequent change in the decision-making systems so as to meet the ever-changing customer needs.

When we asked the respondents whether they intended to make any changes in their management accounting systems in the next two years, although all four respondents predicted such changes, respondents in companies ACB and XYZ noted that change was continuous. For example, the respondent in firm XYZ stated:

> We do not plan management accounting changes but make them as and when our business operations demand.

It would appear therefore that the type of change in the organisations' management accounting systems evolved slowly, which is associated with both internal and external environments. Following Argyris and Kaplan (1994) and others, it can also be suggested that change may occur because of the need to build commitment throughout the organisation.

*What factors facilitate and/or hinder management accounting systems change in the case organisations?*

All the companies identified competition as a major trigger for management accounting change. This factor was associated with the government deregulation policy. As a result, the organisations needed to increasingly rely on information about customers and markets.

OLA company added new shareholders to the list, but this was considered to be moderately important. Respondents in companies ACB, XYZ, and MNO added new markets to the list and ranked this as above average importance.

The study also presents evidence that those companies reporting decreasing financial performance are more likely to change their management accounting practices. MNO company, for example, had restructured its businesses four years ago due to poor financial performance and this has resulted in change in most of its management accounting systems.

## Conclusions

This study is about management accounting change in four selected retail companies in the South African context. It adopted a "multiple case-study" approach based on detailed, open-ended and structured questionnaires. The study revealed a number of interesting issues.

The findings supported the view that the internal and external environments surrounding an organisation have "knock on" effects on its management accounting systems (Otley, 1980; Chapman, 1997; Brignall, 1997). They illustrated the roles management accounting systems played in organisations in a developing country where organisational practices were subject to enormous uncertainties and resource scarcity. Further, they provided support to prior research relating to contingent factors forcing organisations to change their management accounting systems (e.g. Hoque and Hopper, 1997; Luther and Longden, 2001).

The increase in global competition and changes in technology were the two main contingent factors affecting management accounting change in the participating

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companies. Therefore the findings reinforce the view of how change is levered through competitive and technological environments (Cooper, 1995; Johnson and Kaplan, 1987; Innes and Mitchell, 1990; Brignall, 1997; Luther and Longden, 2001).

Additionally, lack of resources to funding change, "no need for change" attitude among employees and fear of change were found to be the dominant factors that hindered management accounting change in the subject organisations. These findings are consistent with a wide body of conceptual and empirical literature about the process of management accounting change (referenced in the theory section of this paper).

However, institutional theory relating to external legitimacy suggests that apart from contingent factors, management accounting may be changed to comply with external institutional pressures such as government rules and regulation, professional associations and external stakeholders (Meyer and Rowan, 1977; Meyer and Scott, 1992; DiMaggio and Powell, 1983, 1991). Institutional theory also suggests that organisations may adopt management accounting systems by imitation and copy others to demonstrate conformity with institutionalised practices (DiMaggio and Powell, 1983, 1991). These issues were beyond the scope of the current study. Future research may explore these contemporary issues in developing countries' contexts that are under-researched areas in management accounting change.

This study is constrained to South Africa. Industries in other developing countries differ from their South African counterparts. This may be so because of legal and regulatory constraints and economic policies or structures that might differ among countries. Future research may be designed to compare the findings in this study with findings that relate to industries in other developed and developing countries. Confirmation of these findings is important since companies operating in developing countries may need to adopt them so as to regain competitiveness. Further, as this study related to four organisations in the retail sector from a developing country – South Africa, future research adopting a larger sample using a case study approach or surveys in both developed and developing countries may shed further light on the research issues explored in this study.

Nevertheless, this paper suggests that changes in environmental factors surrounding an organisation can have significant impact on its accounting and control systems. How such changes might contribute to the overall success of the organisation could be an interesting topic for a future study in the context of both developing and developed economies. Furthermore, more case studies of the impact of the change on organisations and their employees will improve our understanding of how management accounting and control systems change may result in improved organisational and managerial performances.

### Note

1. It should be pointed out that this study did not wish to conduct a comparative study of the adoption of changes in management accounting systems in retail organisations between developed and developing countries. Rather, its intention was to understand management accounting change in a developing country context. The theoretical framework has included the wider contextual factors in general to explore their potential influences on the adoption of changes in management accounting systems in the four retail companies in South Africa.

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## Appendix. Interview guide

*Introduction*

The study focuses on management accounting practices in some selected South African retail firms. In particular, the following issues will be explored:

- modern management accounting practices used;
- appropriateness of these practices;
- benefits of these practices;
- changes that have occurred during the last decade in the management accounting system; and
- factors that facilitate/hinder the change process(es).

*Part 1. Open-ended questions*

*Question 1.* Please describe the size and structure of your organization.

(a) Size: Number of employees: . . . . . . . . . . . . Turnover (in million rands): . . . . . . . . . . . .

(b) Structure: does your organisation have a formal organisation chart? What about a departmental chart?

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*Question 2.*

(a) Which systems have been changed during the last ten years? Probe for:

(1) Nature of change.

(2) Reasons for the change.

(b) Which environmental factors have facilitated these changes? Probe for details like the most important and how they have affected.

The following questions ask you to indicate the extent/importance of the above variables with respect to management accounting change (refer to structured questionnaire questions 3, 4, 5 and 6).

*Question 3.* What factors have hindered management accounting change in your organisation? Probe for details in terms of extent and importance of the factors (refer to question 7 of the structured questionnaire).

*Question 4*

(a) Has ABC been introduced in your organisation? If no, probe for:

(1) Are there any plans to introduce ABC?

(2) What costing systems are in use?

(3) Degree of satisfaction in the current systems.

If yes, probe for:

(1) When it was introduced.

(2) Why it was introduced.

(3) How it is used.

(4) Number of cost drivers.

(b) Do you think your company would require another system to replace ABC? If yes, probe for: details of the required system.

*Question 5*

(a) Has BSC been introduced in the organisation? If no, probe for:

(1) Are there any plans to introduce BSC?

(2) What performance systems are in use?

(3) Degree of satisfaction in the current systems.

If yes, probe for:

(1) When it was introduced.

(2) Why it was introduced.

(3) How it is used.

(4) Number of performance measures.

(b) Do you think your company would require another system to replace BSC? If yes, probe for: details of the required system.

*Question 6.* The presence/absence of other management accounting systems will be determined by the presence/absence of the following:

- reports on competitors' information;
- relationship between management accounting and the firms' strategic positioning;
- value determination in the firm; and
- reports on the firm's product/service market.

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*Question 7*

(a) Does the organization obtain information about competitors? If yes, probe for:
   (1) Types of information.
   (2) Types of reports.
   (3) Frequency of the reports.

(b) How does the firm position its products/services in the market? Is it by:
   (1) Offering lower costs.
   (2) Differentiating its products.
   (3) Niche/focusing on a particular market segment?

(c) How does your organisation assess the value of its activities? Is it by:
   (1) The difference between the sales and purchases.
   (2) The above but including the benefits/opportunities of linkages with supplier and customer?

   If (2), probe for details.

(d) Does you organisation determine the market share of its products/services? If yes, probe for:
   (1) How it is determined.
   (2) How often it is done.
   (3) Types of reports produced.

*Question 8.* Do you think your company would require another system to replace any of the above systems? If yes, probe for: details of the required system.

*Question 9.* Has JIT been introduced in the organisation? If no, probe for:
(1) Are there any plans to introduce JIT?
(2) Degree of satisfaction in the current systems.

If yes, probe for:
(1) When it was introduced.
(2) Why it was introduced.
(3) How it is used.
(4) Number of JIT systems.

*Question 10.* Do you think your company would require another system to replace JIT? If yes, probe for: details of the required system.

*Question 11.* In your opinion, what are the most important benefits that have accrued to your organisation as a result of adopting modern management accounting techniques?

*Question 12.* From a cost/benefit consideration, are there any traditional management accounting techniques that you consider superior to the advance management accounting techniques?

*Question 13.* Are there situations where management accounting systems information has been used for other purposes rather than decision-making?

*Question 14.* Do you intend to make any changes in your management accounting systems in the next two years? If yes, probe for details.

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*Part 2: Structured questionnaire*

**Question 1**
**Which of the following management accounting and control systems are in use in your organization?**

**Planning systems**
1 Budgeting
2 Profit Planning
3 Production Planning
4 Capital Budgeting
5 Strategic Planning
6 Other Planning Systems

**Control Systems**
7 Individual Performance Measurements
8 Team based performance measurements
9 Organization Performance Measurements
10 Measurement of performance in terms of quality
11 Measurement of performance in terms of customer satisfaction
12 Measurement of performance in terms of delivery innovations
13 Other performance measures

**Costing Systems**
14 Direct allocation of manufacturing overheads
15 Direct allocation of marketing costs
16 Direct allocations of other overheads
17 Internal (dept. or divisional) transfers
18 Other costing systems

**Directing Systems**
19 Reward systems- bonuses
20 Reward systems- pay for performance plans
21 Other reward systems

**Decision Making**
22 Information reported more frequently
23 Use for more non-financial measures
24 Information reported more broadly
25 Use of existing systems but interpreting the results differently
26 Other changes to reporting systems
27 Other changes to systems that do not appear in the list

**Question 2**
**Please indicate the perceived intensity of competition faced by your organization in respect to the following variables.**

| Competition | Negligible 1 | 2 | 3 | 4 | Extremely intense 5 |
|---|---|---|---|---|---|
| Raw materials | ( ) | ( ) | ( ) | ( ) | ( ) |
| Technical personnel | ( ) | ( ) | ( ) | ( ) | ( ) |
| Selling and distribution | ( ) | ( ) | ( ) | ( ) | ( ) |
| Quality | ( ) | ( ) | ( ) | ( ) | ( ) |
| Variety of products | ( ) | ( ) | ( ) | ( ) | ( ) |
| Price | ( ) | ( ) | ( ) | ( ) | ( ) |
| Other | ( ) | ( ) | ( ) | ( ) | ( ) |

**Question 3**
**Rank in order of importance how the following technological changes have affected management accounting change.**

| Technology | Irrelevant 1 | 2 | 3 | 4 | Extremely Important 5 |
|---|---|---|---|---|---|
| Automation | ( ) | ( ) | ( ) | ( ) | ( ) |
| Short production cycle | ( ) | ( ) | ( ) | ( ) | ( ) |

(*continued*)

**Figure A1.**
Structured questionnaire

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| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Increase in overheads | ( ) | ( ) | ( ) | ( ) | ( ) |
| Quality requirements | ( ) | ( ) | ( ) | ( ) | ( ) |
| Other | ( ) | ( ) | ( ) | ( ) | ( ) |

**Question 4**

**Rank in order of importance how the following organizational changes may have influenced changes in management accounting.**

| | Irrelevant 1 | 2 | 3 | 4 | Extremely important 5 |
|---|---|---|---|---|---|
| Retrenchment | ( ) | ( ) | ( ) | ( ) | ( ) |
| New accountants | ( ) | ( ) | ( ) | ( ) | ( ) |
| New Packages | ( ) | ( ) | ( ) | ( ) | ( ) |
| New products | ( ) | ( ) | ( ) | ( ) | ( ) |
| Poor Financial performance | ( ) | ( ) | ( ) | ( ) | ( ) |
| Other | ( ) | ( ) | ( ) | ( ) | ( ) |

**Question 5**

**Rank in order of importance the influence of the following factors in relation to hindrance of management accounting change.**

| | Irrelevant 1 | 2 | 3 | 4 | Extremely Important 5 |
|---|---|---|---|---|---|
| Accounting staff shortage | ( ) | ( ) | ( ) | ( ) | ( ) |
| Lack of adequate computing resources | ( ) | ( ) | ( ) | ( ) | ( ) |
| Management inertia | ( ) | ( ) | ( ) | ( ) | ( ) |
| Problems of communicating with line management | ( ) | ( ) | ( ) | ( ) | ( ) |
| Lack of authority of accountant | ( ) | ( ) | ( ) | ( ) | ( ) |
| Need to ensure that statutory requirements are met | ( ) | ( ) | ( ) | ( ) | ( ) |
| Lack of autonomy from parent company | ( ) | ( ) | ( ) | ( ) | ( ) |
| Others | | | | | |

**Figure A1.**

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