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Management accounting practices in the British food and drinks industry

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ABSTRACT

Purpose – This paper investigates and reports on the management accounting practices in the British food and drinks industry.

Design/methodology/approach – The data is generated by a large-scale postal questionnaire which was informed by preliminary interviews. Further interviews were carried out to aid interpretation of the responses. Descriptive statistics on the importance and frequency of use of individual practices provide the basis for discussion.

Findings – Direct costing is widely practised and important, by contrast with activity-based costing and full absorption costing. Despite the limitations of conventional budgets, they remain a central management accounting 'pillar' and are frequently used in 'what if?' analyses. The balanced scorecard and other non-financial performance measures are perceived to be important but never or rarely used by 40% of companies. Product profitability analyses are frequently applied, and, surprisingly, the profitability of supplying individual customers is frequently calculated by over 50% of the population. Respondents were sceptical about sophisticated DCF investment appraisals.

Practical implications – Traditional management accounting is 'alive and well' but there are indications of likely increased use of: information concerning the cost of quality; non-financial measures relating to employees and analyses of competitors' strengths and weaknesses. There is evidence of a gap between current textbooks and actual practices.

Originality/value – The survey provides a unique detailed examination of actual management accounting practices and an indication of future trends.

Keywords Management accounting practices, Food industry accounting, Survey, UK.

Paper type Research paper

1. INTRODUCTION

During the 1980s Kaplan, in his review of *The Evolution of Management Accounting*, and with Johnson in the *Relevance Lost* book, levelled strong criticism at the management accounting practices of the day. Since then a number of innovative management accounting techniques have been developed across a range of industries and publicised internationally. The most notable contributions are activity based techniques¹, strategic management accounting and the balanced scorecard. These techniques have been designed to support modern technologies and management processes, such as total quality management and just-in-time production systems, and the search for a competitive advantage to meet the challenge of global competition.

It has been argued² that these ‘new’ techniques have affected the whole process of management accounting (planning, controlling, decision-making, and communication) and have shifted its focus from a ‘simple’ or ‘naive’ role of cost determination and financial control, to a ‘sophisticated’ role of creating value through improved deployment of resources. In 2001 it was claimed by Ittner and Larcker (2001: 350) that “companies increasingly are integrating various [innovative] practices using a comprehensive “value-based management” ... framework”.

The aim of this paper is to report on the current use and importance of a range of management accounting procedures referred to in textbooks and the broader literature. Ittner and Larcker (2002: 788) stress the importance of such reporting as “[i]t is difficult to imagine how research in an applied discipline such as management accounting could evolve without the benefit of detailed examination of actual practice”. Similarly, Brierley et al (2001: 242-3) argue that “[g]iven that notions such as ‘current practice’ and ‘current state’ are situated in time and space there is a continues need for empirical studies to keep track of developments ... and compare the [current] results ... with prior research ...”

The UK food and drinks sector provides the context for this research. The mainly domestic nature of the food and drink industry makes it significant in all countries. In the UK it is the largest industry sector with a turnover representing 15% of all sales by 'manufacturing' companies³. Mann et al (1999b) indicate that it provides employment for over three million people from primary producers to manufacturers and retailers, and accounts for 9% of UK gross domestic product. Being such a dominant sector makes the industry a useful research site for this investigation.

The remainder of the paper is organised as follows. The next section briefly sets out the food industry and management accounting contexts within which the study is positioned. This is followed by details of the empirical design. The survey findings are then summarised, followed by a discussion of their implications. The last section sets out the conclusions.

¹ Including activity based costing, activity based budgeting and activity based management

² See, for example, Ittner and Larcker, 2001; Kaplan and Atkinson, 1998; Otley, 1995; Fullerton and McWatters, 2002; Hoque and Mia, 2001; Haldma and Laats, 2002

³ The food and drinks industry is the single largest manufacturing sector in the UK. Its turnover in 2003 was about £67.6 billion representing 15% of total manufacturing. The industry employs some 500,000 people or 13.1% of the whole UK manufacturing workforce. A total contribution of £20 billion GVA (Gross Value Added) is made to the UK economy.

2. LITERATURE REVIEW

Despite the significance of the food and drinks industry, little attention was given in the UK to its management control systems until 1996 when the “Benchmarking and Self-Assessment Initiative” was launched. This initiative, managed by Leatherhead Food Research Association and supported by the Ministry of Agriculture, Fisheries and Food and the Department of Trade and Industry, aimed to improve the competitiveness of the industry by increasing the awareness and use of practical business improvement techniques (Mann et al, 1999a). A self-assessment component of the initiative sought to encourage and enable companies to assess their management systems and business performance against a European Business Excellence Model⁴. Mann et al (1999a) concluded that, while the food industry is strong in resource and process management, its "companies have less well developed management systems than other industries ... [and] were not as good ... at meeting financial targets using appropriate non-financial indicators, and were less likely to benchmark their results." (p.18). This was partly attributed to a lower level of exposure to international competition than other industries. Likewise, Ratnatunga, Hooley and Pike (1990), on the basis of 21 in-depth interviews with senior executives in the food industry, found that "almost half of the responding firms ... did not involve accountants in choosing alternatives in the marketing mix, and almost a quarter used them only as information providers." (p.12) Asquer (2003), in a paper about the food industry, explains that "many state of the art technologies - activity based costing and management systems, for instance - use a range of tools to assess operational efficiency and the achievement of organisational goals. Yet many firms are far from adopting most of these innovations." (p.28).

Mann et al followed up their 1999a survey with an investigation (1999b) of the 'best practices' employed by nine companies that scored well in the Business Excellence Model, and concluded that the industry needs to be more progressive and more willing to learn and apply new methods. In particular, companies require leaders who develop policies and strategies that really address the needs of the customer (and do not just provide what they think the customer wants) and utilise the full potential of their employees. Performance against policies and strategies needs to be monitored using a performance measurement system that addresses all the financial and non-financial measures that are critical to an organisation's success. These should include measures of customer satisfaction, employee satisfaction and impact on society; only by so doing will long-term financial success be achieved. The aim of the current study is to examine whether or not the industry adopts a range of (traditional and new) management accounting practices within the UK food and drinks industry.

A significant body of research has been published in the field of management accounting practices. For example, Chenhall and Langfield-Smith (1998), Ghosh and Chan (1997), Guilding, Lamminmaki, and Drury, (1998), Luther and Longden (2001), Wijewardena and Zoysa (1999), Mendoza and Bescos (2002), Yohikawa (1994) and Drury et al (1993). These studies report on the use of various management accounting techniques in different countries⁵. Our study builds on, and is informed by, the tradition and accumulated findings of such research. However, the work is distinguished from earlier studies in that it looks at a broad set of management accounting practices (budgeting, performance evaluation, costing, decision-making, communication and strategic analysis). In so doing it responds to the call

⁴ See Mann and Adebajo, 1997.

⁵ For a review of empirical management accounting within European countries, see Bhimani (2002).

for research with ‘greater understanding of both individual practices and macroscopic relationships among practices ... we found very little of the latter in the extant literature’ (Anderson and Lanen, 1999: 408-9).

3. RESEARCH DESIGN AND DATA COLLECTION

A postal questionnaire was used to collect empirical data. This facilitated access to a large number of respondents and provided sufficient data for statistical analysis⁶. In addition, face-to-face interviews were carried out to refine the questionnaire *ex ante* and to check the reliability of the survey results *ex post* and seek further explanation of some of the responses. The questionnaire was also reviewed by seven academics.

In order to remove distractions arising out of variations between industry sectors, we decided to concentrate on one broad, representative sector; the food and drinks industry was ideal for this purpose. ‘FAME’⁷ which provides extensive information about public and private companies was used to choose a sample frame. A number of criteria were used in selecting companies for inclusion in the sample:

- a SIC UK industry code of ‘15’ (manufacture of food products and beverages),
- employment of at least 30 people, and
- being active and independent companies.

A letter was sent, in May 2001, to the company secretary of the 658 companies that satisfied these criteria to obtain the names of the most appropriate persons to complete the questionnaire. Two letters were returned by the post office stamped ‘addressee has gone away’ and six companies asked to be removed from our sample leaving 650 potential responses. By the end of June names of 148 persons responsible for heading the management accounting function were received. Questionnaires were sent to all 650 companies and were addressed to the names that had been obtained or, in cases where they had not been obtained, ‘For the attention of The Management Accountant’.

Respondents were asked to indicate the frequency of use of 38 management accounting practices⁸ (MAPs) using a five point Likert-type scale (1 indicating *never* and 5 indicating *very often*). They were also asked to rate the importance of each technique/practice using either ‘*not important*’, ‘*moderately important*’ or ‘*important*’. The 38 MAPs were classified into five groups: costing system, budgeting, performance evaluation, information for decision making, and strategic analysis. In addition separate questions were asked concerning the communication of management accounting information. A covering letter explained the purpose of the study and assured the confidentiality of the information provided.

Three weeks later a second copy of the questionnaire was sent to all non-respondents. By the end of first week of September we received 96 responses from management accountants. Follow-up telephone calls were made to all non-respondents and a third copy of the questionnaire was sent. By the end of October, 122 usable completed questionnaires were received from management accountants giving a usable response rate of 18.8% which was considered acceptable.

⁶ Such a large number would be difficult to achieve through face-to-face interviews because of the constraints of time and cost. In addition, the pressures on respondents would have restricted the number willing to be interviewed.

⁷ Financial Analysis Made Easy

⁸ One limitation of using surveys is that survey questions may lack specificity (Ittner and Larcker, 2001). To overcome this and ensure consistency of responses, each MAP was briefly explained as part of the question.

A potential threat to the conclusions of a postal survey is non-response bias. In order to assess the possibility of bias, t-tests were conducted on company size measured by turnover, fixed assets, and number of employees for the year ended 2001. There was no significant difference between the two samples for each size measure. Further, the answers to the main questions in the questionnaire from respondents who replied without the follow-up telephone calls were compared with the answers from respondents who replied only after the follow-up telephone calls. There was no significant difference between the two groups of answers. We conclude that the two samples are drawn from the same population and the existence of non-response bias is not likely to be a threat to the conclusions.

4. SURVEY FINDINGS

4.1. Costing systems

Traditional absorption costing systems have long been subject to criticism. Two long-standing issues have been the choice of appropriate overhead recovery rates i.e. plant wide or more specific, and secondly the controversy about the need to recover/allocate (absorb) overheads at all. The marginal costing versus absorption costing debate⁹ ‘ran out of steam’ in the UK when SSAP 9 was adopted, but we explore our expectation that the separation between fixed and variable costs is ‘very much alive’ in practice. During the last two decades the problems of traditional absorption costing were again brought under the spotlight. This time the focus of criticism was that these systems do not accurately measure costs for decision making purposes and activity based costing (ABC) has been developed and promoted. Also, target costing and the ‘costing of quality’ were introduced as tools for confronting increased competition.¹⁰

To find out the extent to which practitioners applied their costing system to provide more accurate cost information for decision making purposes, respondents were asked to indicate how often and how important are seven techniques related to costing systems. The responses are summarised in Panel A of Table 1.

It can be seen that 48% (29% + 19%) of the companies either *often* or *very often* distinguish between variable/incremental costs and fixed/non-incremental costs for decision making purposes. The importance of this separation was acknowledged by 83% of respondents rating it as either *moderately important* or *important*. By contrast only a small number indicated high usage of the three techniques (plant-wide, multiple-rate or ABC) for allocation of overhead to cost objects; overhead allocation does not appear to be done very frequently. The combination of these two findings suggests that variable costing is much more common than various forms of absorption costing. While absorption (including ABC) costing has a relatively low usage rating (76% *never* or *rarely* using ABC), it nevertheless seems to have considerable perceived importance; 44%, 51% and 46% of respondents rated the three forms either *moderately important* or *important*. Ernst & Young (1995) and Groot (1997) reported that ABC was applied in 18% and 12% respectively in food sector companies in the US and Holland. It seems that respondents are aware of the importance of overhead allocation techniques but many believe that it is not worth implementing them frequently. This may indicate that they are seen to be important in non-routine ‘costing/pricing studies’ carried out

⁹ See Dugdale and Jones (2002) Battles in the Costing War: UK Debates, 1950-1975

¹⁰ Costs of quality are typically classified into four groups: prevention, appraisal, internal failure and external failure. Providing information related to quality costs is important when making decisions between differing quality-related alternatives.

from time to time, but that, in the food sector, managers rely upon direct and variable costs for *ad hoc* decision making. Likewise the costing of quality is seen to be extremely important but not very frequently calculated. Finally, mathematical modelling of cost relationships and behaviour is neither seen to be important nor often used.

4.2. Budgeting

The literature of management accounting emphasises that budgeting is an essential technique for planning and controlling the activities of an organisation (Drury et al, 1993). The implementation of ABC was followed by the introduction of activity-based budgeting (ABB). In the questionnaire we asked respondents to rate the usage and the importance of budgeting for planning, budgeting for controlling costs, activity-based budgeting, budgeting with ‘what if’ analysis, flexible budgeting, zero-based budgeting and budgeting for long-term (strategic) planning. Panel B in Table 1 summarises the responses.

The survey shows that budgeting is either *often* or *very often* used for planning and for controlling costs by an impressive 84% and 73% respectively. Taken together, budgeting for planning and control was considered either *important* or *moderately important* by more than 90% of respondents. It can be concluded that almost all companies use budgeting for planning and control. A significant proportion (32%) use flexible budgeting *often* or *very often* and consider it *important* but, on the other hand, 29% clearly do not flex their budgets at all! ‘What if’ analysis is clearly very important but, as expected, is only applied from time to time.

ABB was considered either *moderately important* or *important* by the majority of respondents (63%). However, only 19% of respondents were using it *often* or *very often*. When ABC and ABB were cross-tabulated we found that all companies which reported high level of usage for ABC did the same for ABB. It may be that companies start implementing ABC and then they use the activities analysis performed during ABC implementation to prepare their budgets. It is interesting to observe, however, that ABB is seen to be markedly more important and frequently used than ABC. This supports our general finding that budgeting is more valuable than costing. One would not expect zero-based budgeting to be applied very frequently but it was perhaps surprising to see that it is also seen to be largely unimportant (58% of respondents). Finally, 83% rated budgeting as an important part of their long-term strategic planning.

4.3. Performance evaluation

The choice of measures to guide and evaluate the performance of business units is one of the most critical challenges facing organisations (Ittner and Larcker, 1998). Management accounting should report all relevant information related to the evaluation of business units’ performance. Systems which focus solely on financial measures such as profits, return on investment, standard costs and variance analysis have been widely criticised (e.g. Ittner et al, 1997; Kaplan and Norton, 1996; Shields, 1997). The criticisms arise because these measures are distorted by external reporting conventions, they promote short-termism and accounting manipulation, and do not take into consideration the cost of capital or non-financial ‘leading’ measures such customer satisfaction, labour efficiency or innovation.

To incorporate the cost of capital into financial measures a variety of “economic value” measures have been introduced (Ittner and Larcker, 1998). Residual income was developed in 1950s but more recently “Economic Value Added” (EVA[®]) was promoted as a proprietary adaptation of residual income. EVA[®] can be defined as adjusted operating income minus a capital charge, and implies that a manager’s action only adds economic value when the resulting profits exceed the incremental cost of capital. It was seen by Thatcher (1998) as being an important 'organisational glue' in pulling Grand Met and Guinness together in the merger that formed Diageo.

Kaplan and Norton (1992; 1993 and 1996) introduced the Balanced Scorecard (BSC) as a way of integrating financial and non-financial performance measures. In their model business unit performance should be evaluated from four perspectives: financial, customer-related, internal business processes, and learning and growth.

Financial measures are conventionally compared with previous periods’ performance to identify whether there is an improvement or deterioration. The underlying assumption that the previous period is an appropriate comparator can lead to the entrenchment of problems and inefficiencies. To overcome this, benchmarking was introduced and made popular as an organisational improvement tool by the Xerox company. Benchmarking is based on identifying a ‘best practice’ either internally or externally and then studying how this can be used to improve current and future performance.

We asked respondents to rate the usage and importance of five groups of measures: financial measures; EVA[®]; benchmarks; and non-financial measures related respectively to customers, to operations and innovation, and to employees. Panel C of Table 3 shows the results.

As expected, the majority of respondents (78%) rated financial measures as *important* and about the same percentage reported frequent usage of these measures. Non-financial measures related to customers and to operations and innovation are clearly very influential with 87% (42% + 45%) and 77% respectively scoring them as at least *moderately important*. The pre-eminence of customer related non-financial performance measures confirms the finding of Abdel-Maksoud et al (2004); and the importance, for food sector companies, of performance in supply chain management and product innovation/differentiation supports the findings of Rudder et al (2001), Riley (2005), Grunert et al (2005), Henschion and McIntyre (2005). However, a significant minority of companies (38% for both categories of measures) produce such measures either *never* or *rarely*. This interesting dichotomy perhaps reflects the fact that, for some, non-financial performance evaluation is frequent and important while, for others it is merely infrequent ‘tokenism’. The non-provision of employee related measures is even more marked, with 41% of respondents answering *never* (Adebanjo et al 1999a reported 72% of UK food companies not measuring employee satisfaction); this is not inconsistent with the casualization of the food industry workforce as discussed in Wright and Lund (2003). Our results show also that neither EVA[®] nor benchmarking¹¹ have yet gained popularity despite the Benchmarking and Self-Assessment Initiative described in Section 2 above.

¹¹ Mann et al (1999a) had found that, relative to other industries, food companies were less likely to benchmark their results against best in class figures.

4.4. Information for decision-making

One of the stated objectives of management accounting in the 1970s was to provide relevant information for internal decision making. For regular or short-term decisions management accountants can use cost-volume-profit (CVP) analysis, product profitability analysis, customer profitability analysis, and stock control models. For capital investment decisions management accountants can produce accounting rates of return and payback periods as well as more complex signals based on discounted cash flow. Also information on non-financial factors, such as quality of output, flexibility of processes and lead-times could affect capital investment projects. Finally, risk analysis techniques such as probability analyses, computer simulation and 'what if' analysis can be used.

Summaries of the responses to questions about decision-making MAPs are shown in Panel D. It can be seen that product profitability analysis and customer profitability analysis are *often* or *very often* calculated in the majority of companies – 69% and 51% respectively. Respondents also rated these analyses as *important* – 72% and 59% respectively. CVP analysis, recommended for the food industry by LeBruto et al (1997), is seen to be *important* or *moderately important* by 86% of respondents and is also surprisingly frequently produced with 44% indicating that such analyses are used at least *often*. Stock control models are largely *moderately important* and *sometimes used*.

Regarding capital investment decisions, 41% of respondents used traditional accounting measures such as accounting rate of return and payback period to evaluate major capital projects, while the equivalent figure for discounted cash flow models such as internal rate of return and net present value is only 19%. This apparent scepticism of 'advanced' investment appraisal is confirmed by the figure of 42% answering that calculating the cost of capital was *not important!* There is clear confirmation here that the lower importance attributed to financial performance, relative to companies in other industries, found what Mann et al (1999a), appears to have persisted. In addition, while non-financial factors relating to capital projects are perceived to be either *important* or *moderately important* by 82% of respondents, only 33% of companies *often* or *very often* report and document such factors. Finally 'what if' analysis is the most popular technique in evaluating the risk of projects though only 22% of respondents used it often or very often.

4.5. Strategic analysis

Traditional management accounting systems have been criticised because they focus on reporting information related to internal processes with little attention being given to the external environment and the effect of competitors' decisions and cost structures on current and future processes of the business. The externally oriented approach has become known as 'strategic management accounting', a term that first appeared as the title of an article by Simmonds in 1981. However, there is no agreed conceptual framework for what constitutes strategic management accounting¹². In this study we explore characteristics of strategic management accounting identified by Guilding et al, (2000). These are: a concern with customers and the external environment; a focus on competitors; and a long-term, forward-looking orientation. Eight strategic practices were given to respondents who were asked to

¹² See, for example, Tomkins and Carr, 1996; Lord, 1996, Guilding et al, 2000; Ittner and Larcker, 2001; Roslender and Hart, 2003.

indicate how often they use them as well as their importance. Panel E in Table 3 shows the results.

It can be seen that only long-range forecasting was *often* or *very often* done by 43% of the companies. This was followed in frequency by the analysis of competitive position (33%) and the analysis of competitors' strengths and weaknesses (21%). It may be concluded that food companies are, at present, more interested in conventional long-range planning and lateral competitive analyses than in contextual stakeholder, industry, life-cycle or value chain analyses. The high scoring of importance, relative to frequency of use, of analyses of competitive position (and competitors' strengths and weaknesses) and of value chains suggests that the application of these practices may become more widespread and frequent. This is not surprising given the clear indications of increased chain cooperation in the food industry (see Grunert et al, 2005).

4.6. Communication of management accounting information

Drury et al (1993) argue that the most significant challenges relating to the timing of management accounting reporting were concerned with: providing accurate and timely information on-line to the shop floor; improving timeliness of reporting data, and changing the information gathering system so that it becomes real-time and interfaces with other systems. From a series of interviews in the food industry Ratnatunga et al found that, in 1990, although accountants were able to quickly respond to Marketing's informational requests, this was not always so in the provision of non-routine information.

To explore these issues management accountants were asked to assess the importance to their business of four levels of accessibility of internal reports. The results, shown in Table 2, indicate that it is *important* to provide detailed management accounting information on a systematic, regular, short-term basis (91% of respondents). The ability to provide 'detailed information immediately on request' was rated *important* or *moderately important* by 86% of respondents (but the 'I rating' is down from 91% to 37%). Immediate updating and the provision of real-time information was *important* to only 11%. Although real-time reporting is not widespread, it is clear that organisational changes have altered information dispersion channels; 48% of respondents indicated that it is *important* for detailed management accounting information to be reported direct to line manager. This confirms anecdotal evidence that there is now widespread 'ownership' of management accounting which is increasingly less subject to 'filtering and analysis' by accounting specialists.

5. DISCUSSION AND FURTHER ANALYSIS

To structure the discussion of the survey findings we ranked the 38 MAPs according to their usage and importance in Table 3. Six levels of MAPs have been identified based on a ranking of their usage and importance.

Looking first for the extreme positions apparent from Table 3 we find four management accounting practices (Level 1) which are indisputably widely used and important in the food and drinks industry. They are *Budgeting for planning*, *Budgeting for controlling costs*, *Performance evaluation based on financial measures* and *Product profitability analysis*. Ranking these practices high in terms of their adoption and importance is consistent with previous UK cross-industry surveys. For example Dugdale (1994) found out that budgeting for planning ranked third out of 30 MAPs. Similar results were reported regarding financial

performance measures. For example, in a survey of UK manufacturing sector conducted by CIMA (1993), most companies base their decisions primary on financial performance measures such as profit, turnover, cash flow and return on capital. Chenhall and Langfield-Smith (1998) confirmed the importance of financial performance measures and budgeting practices in Australian companies. In their study, budgeting for controlling costs ranked first and financial performance measures (return on investment) ranked second. Luther and Longden (2001) had similar findings concerning budgeting practices and financial performance measures in UK and South African companies. These results were also confirmed in many European studies (for example, Bruggeman et al (1996) in Belgium; Israelsen et al (1996) in Denmark; Scherrer (1996) in Germany; Groot (1996) in Netherlands)

At the other end of the scale (Level 6), are six well known practices that may be dismissed as peripheral. They are two 'operations research type' practices *Regression and Learning curve techniques*, and *Risk evaluation with probabilities and simulation* and four more modern techniques that are associated with 'strategic management accounting' i.e. the analysis of *Economic value*, *Shareholder value*, *Industry analysis*, and *Product life-cycles*. Drury et al (1993) found that only 3% of respondents always or often used regression techniques, and 6% often or always used probability analysis. However, they argued that the advancement of such techniques in textbooks would lead to their wide adoption; for instance regression analysis was recommended by LeBruto et al (1997) for separating fixed and variable costs in the food industry. The results of our survey do not support this expectation. Similarly, Chenhall and Langfield-Smith (1998) found, in their Australian survey, that operation research techniques were ranked 39 out of 42 MAPs. Scapens (1991) suggested that cost of using complex mathematical and statistical techniques may not outweigh their benefits.

The low ranking of strategic management accounting techniques is contrary to expectations as recent developments in the literature suggest that such techniques can assist companies in the contemporary settings characterised by intense global competition, rapid technological change and the new development of management approaches such as total quality management and just in time. Similar results to ours were reported by Chenhall and Langfield-Smith (1998); they found that *Shareholder value analysis* and *product life cycle analysis* were ranked 37 and 41 respectively. One explanation, conveyed to us in the follow up interviews, was that the existence of such practices may not be known about by companies' management accountants. For example product life cycle analysis is usually carried out by production specialists. We did, however, get evidence of higher adoption and importance of some strategically focused techniques such as *Analysis of competitive position* and *Analysis of competitors' strengths and weaknesses* which appear in Level 3.

This simple 'high-low' snapshot provides a strong indication that traditional management accounting is 'alive and well' in the food sector. Traditional MAPs are ranked in the first level of usage and importance and the more recent MAPs are ranked in the sixth level of usage and importance.

The next stage of our analysis of the data is to identify those practices which are ranked significantly¹³ differently on usage and importance scales. On the assumption that, over time, the ranking of usage will, in many cases, move towards the ranking of importance, our interpretation is that practices ranked markedly higher in terms of 'importance' than 'usage'

¹³ Those in which the ranking of importance is three or more places different from the ranking of usage.

are likely to become more widespread and *vice versa*. On this basis we make the predictions shown in Table 4.

Before considering the specific data shown in Table 4 it is worth noting that the practices with higher ranking of usage than importance dominate the more traditional practices. By contrast the practices showing markedly higher importance than usage dominate the 'younger' MAPs.

The lower ordering of importance than usage for *plant-wide* and *departmental overhead rates* is not surprising and can be attributed to the costing advances related to ABC. The increasingly common multiple cost driver analyses related to ABC perhaps also explains the predicted demise of the *fixed – variable costs* distinction. However, it is curious that, despite the move to cost drivers other than volume¹⁴, respondents still rate *CVP analysis* as a practice whose importance exceeds its usage.

Another interesting, contrasting 'pairing' concerns non-financial measures of performance. While those relating to employees (e.g. productivity, or value added per employee) are seen to be more important than used, the opposite applies to *non-financial measures of operational performance* such as waste, or schedule adherence. This may be attributable to the increased (fashionable) emphasis currently being placed on performance measurement in combination with empowerment and devolution of accountability¹⁵. Another explanation is that food and drinks firms have, for a long time focused on operational measures of performance; as stated in Mann et al (1999a) "the food industry is strongest at resource and process management ... these areas typically need strong control to ensure that the supply chain, from raw materials to manufacture and to delivery to the consumer is met." (p.13)

DCF investment appraisal, despite its steady infiltration through the 20th century into corporate financial management, is still ranked more important than widely used. This supports various research findings in other industries that, at the final level of evaluation, decisions are often made on the basis of strategic rather than financial analysis.

Finally, our results show that both the calculation and reporting of the *cost of quality* and the *analysis of competitor strengths and weaknesses* are likely to become more widespread. These practices reflect the increased competitive and regulatory pressures faced by organisations. Henschion and McIntyre (2005, p.419) state that "The environment is becoming increasingly competitive and regulated, basic pre-conditions of trade are becoming more demanding raising costs and other resource requirements, and thereby barriers to entry, and the basis for competition is changing". We find clear support for our study's central theme of the ongoing evolution of management accounting.

6. SUMMARY AND CONCLUSIONS

The central aim of this paper was to report on the current state of management accounting practices in the UK food and drinks industry. This is particularly relevant given the twin conclusions of past research that, firstly, the industry lags in the monitoring and control of business results (LeBruto et al, 1997; Mann et al, 1999a), and secondly, powerful retailers treat suppliers' cost management systems as an important criterion when developing supply

¹⁴ This flexible 'modern' interpretation of CVP analysis, with a range of cost drivers, was discussed in Luther and O'Donovan (1998).

¹⁵ See Abdel-Maksoud et al (2004).

chain relationships (Fearne and Hughes, 1999). Our findings are based on the analysis of 122 questionnaires completed by management accountants. Some notable findings are identified below.

- The separation of costs into variable and fixed was acknowledged to be at least *moderately important* by 83% of respondents and in almost half the companies the distinction is *often* or *very often* applied. This contrasted with lower levels of importance and usage of ABC and other full costing techniques. This resonates with the statement by Asquer (2003) that food and drinks managers discounted the relevance of full cost information due to "inconsistency between the cost allocation criteria and their understanding of the production processes" (p.28)
- Budgeting for planning and control is either *important* or *moderately important* for more than 90% of companies. It was interesting that a high proportion do not flex or amend their budgets for changes in volumes or other factors, but work only with fixed budgets. 'What if' analyses are, however, fairly frequently applied. Activity based budgeting, in common with activity based costing, has higher ratings of importance than actual usage. There seems to be very little support in firms for the concerns expressed by Hope and Fraser, and others, in the 'Beyond budgeting' literature¹⁶.
- Over three quarters of companies consider financial measures of performance to be fully *important*. Non-financial performance measures are also perceived to be highly important, especially in connection with customer satisfaction. However, despite this importance, some 40% of companies reported that they *never* or *rarely* actually used non-financial measures of performance in connection with customers, operations, innovation or employees. We get an impression that the balanced scorecard is more talked about than applied, and that performance measurement is still very much dominated by financial figures.
- CVP analysis is considered to be at least *moderately important* by a high proportion of respondents - a finding which ties in with the prominence, mentioned above, that is given to splitting costs into fixed and variable, and the mistrust of allocations of fixed overheads. As expected, the majority of companies apply product profitability analysis frequently; what is perhaps more interesting is that 51% indicated that customer profitability analyses are conducted either *often* or *very often*. Relative to other industries this might be considered high, but is perhaps a reflection of the high concentration of the food and drinks market; Fearne and Hughes (1999) report that the top four multiples account for two thirds of UK grocery sales.
- We found scepticism about DCF investment appraisal as compared with earnings-based or payback methods. This finding was corroborated by the fact that 42% of respondents indicated that calculation of cost of capital was not important in their companies. Non-financial factors relating to capital projects are perceived to be either *important* or *moderately important* by 82% of respondents, but only 33% of companies *often* or *very often* report and document such factors.
- Strategic analysis techniques 'come across' as *moderately important* but mostly not very frequently applied. The high scoring of importance, relative to frequency of use, of analyses of competitive position (and competitors' strengths and weaknesses) and of

¹⁶ See for example Hope and Fraser (2001), (2003).

value chains suggests that the application of these practices is becoming more widespread.

The following practices are shown to have pre-eminent emphasis in terms of both their importance and adoption: *budgeting for planning and for controlling costs*, *product profitability analysis*, and *performance evaluation based on financial measures*. We conclude that traditional management accounting is very much alive and well.

To conclude we refer back to the Mann et al (1999a) view that UK food sector companies had less well developed management systems than other industries and were not as good at meeting financial targets using appropriate financial and non-financial indicators. However, they ended that paper on an optimistic note based on their perception of a general recognition of the need for improvement. Our study is neither longitudinal nor a comparative study with other industries, so we are unable to confirm improvement nor make definitive statements relative to other sectors. Nevertheless, our results do provide a detailed, large scale survey of the perceived importance and actual usage of management accounting practices in the industry and an indication of future trends. They suggest that UK food and drinks companies are not in the vanguard when it comes to adopting new management control techniques, but that specific features of the industry, such as the high level of safety and other regulation, and the power of a small group of dominant retailers, are leading to the application of appropriate management accounting practices.

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Table 1 Management accounting practices and techniques: summary statistics shown by percentage of respondents

How important?					How often used?					
<i>n</i>	NI	MI	I		<i>n</i>	S1	S2	S3	S4	S5
Panel A. Costing System										
114	17	35	48	A separation is made between variable/incremental costs and fixed/non-incremental costs	116	13	11	28	29	19
113	56	27	17	Using a plant-wide overhead rate	115	54	11	12	14	9
112	49	35	16	Departmental or multiple plant-wide overhead rates	113	48	15	24	4	9
112	54	34	12	Activity-based costing (ABC)	114	55	21	13	6	4
112	42	37	21	Target costs	112	43	12	21	15	9
111	41	44	14	The cost of quality	111	44	24	18	10	4
110	85	12	3	Regression and/or learning curve techniques	111	83	12	4	2	0
Panel B. Budgeting										
118	8	15	76	Budgeting for planning	120	2	3	13	28	56
119	8	19	73	Budgeting for controlling costs	120	3	5	19	25	48
113	37	44	19	Activity-based budgeting	116	35	25	21	8	11
117	19	47	34	Budgeting with 'what if analysis'	118	17	16	36	23	8
117	27	40	32	Flexible budgeting	117	29	16	23	19	13
116	58	30	12	Zero-based budgeting	117	52	19	14	9	7
114	17	33	50	Budgeting for long-term (strategic) plans.	117	14	21	26	26	14
Panel C. Performance Evaluation										
118	7	15	78	Financial measure(s)	120	7	5	13	26	50
119	13	42	45	Non-financial measure(s) related to customers	120	15	23	24	20	18
116	23	37	40	Non-financial measure(s) related to operations and innovation	117	21	17	26	16	20
116	36	53	11	Non-financial measure(s) related to employees	117	41	23	25	8	3
114	64	29	7	Economic value added or Residual income	116	63	22	8	3	4
113	43	48	9	Benchmarks	116	45	25	20	9	2
Panel D. Information For Decision-Making										
116	14	36	50	Cost-volume-profit analysis (break-even analysis) for major products.	118	10	25	20	28	16
115	3	24	72	Product profitability analysis.	117	3	9	19	34	35
116	8	33	59	Customer profitability analysis.	118	9	14	25	25	26
114	20	44	36	Stock control models.	116	17	25	28	18	12
113	34	41	26	Evaluation of major capital investments based on discounted cash flow method(s).	115	37	21	23	9	10
116	13	44	43	Evaluation of major capital investments based on payback period and/or accounting rate of return.	118	14	14	32	17	24
113	18	45	37	For the evaluation of major capital investments, non-financial aspects are documented and reported.	115	17	17	33	22	11

How important?					How often used?					
<i>n</i>	NI	MI	I		<i>n</i>	S1	S2	S3	S4	S5
113	68	27	5	Evaluating the risk of major capital investment projects by using probability analysis or computer simulation.	115	71	18	4	3	3
115	34	45	21	Performing sensitivity ‘what if’ analysis when evaluating major capital investment projects.	116	32	28	19	14	8
114	42	40	18	Calculation and use of cost of capital in discounting cash flow for major capital investment evaluation.	116	44	22	16	14	3
Panel E. Strategic Analysis										
117	13	41	46	Long-range forecasting	117	14	16	26	26	17
111	75	19	6	Shareholder value	111	68	22	5	5	1
109	65	28	6	Industry analysis	110	67	15	6	6	5
114	20	40	39	Analysis of competitive position	114	17	18	32	25	8
112	52	28	21	Value chain analysis	113	51	16	14	9	10
113	63	28	9	Product life cycle analysis	112	60	21	15	4	1
111	48	36	16	The possibilities of integration with suppliers’ and/or customers’ value chains	112	46	16	27	8	4
115	17	50	33	Analysis of competitors’ strengths and weaknesses.	117	16	26	36	18	3

n: number of respondents, NI: not important = 1, MI: moderately important = 2, I: important = 3, S1: never, S2: rarely, S3: sometimes, S4: often, S5: very often.

Table 2 Communication of management accounting information

	% of respondents				Mean	Std. dev.
	<i>n</i>	NI	MI	I		
Detailed management accounting information is available on a systematic, regular, short-term basis (e.g. weekly or monthly).	119	1	8	91	2.90	0.33
Detailed management accounting information is available immediately upon request.	118	14	49	37	2.24	0.68
Detailed management accounting information is updated and made available on a real-time basis	118	41	48	11	1.70	0.66
Detailed management accounting information is reported direct to line managers.	117	17	35	48	2.31	0.75

n: number of respondents, NI: not important = 1, MI: moderately important = 2, I: important = 3.

Table 3 Ranking and descriptive statistics of management accounting practices

	Importance ^a			Usage ^b		
	Mean	Std. dev.	Rank	Mean	Std. dev.	Rank
<u>Level 1</u>						
Budgeting for planning	2.68	0.63	3	4.33	0.91	1
Budgeting for controlling costs	2.66	0.62	4	4.12	1.05	2
Performance evaluation based on financial measures	2.71	0.59	1	4.08	1.20	3
Product profitability analysis	2.69	0.54	2	3.90	1.07	4
<u>Level 2</u>						
Customer profitability analysis	2.53	0.65	5	3.46	1.27	5
A separation is made between variable/incremental costs and fixed/non-incremental costs	2.32	0.74	9	3.30	1.27	6
Evaluation of major capital investments based on payback period and/or accounting rate of return	2.32	0.73	10	3.24	1.32	7
Long-range forecasting	2.33	0.69	7	3.17	1.28	8
Cost-volume-profit analysis for major products	2.36	0.72	6	3.14	1.26	9
Budgeting for long-term (strategic) plans.	2.33	0.75	8	3.05	1.25	10
Performance evaluation based on non-financial measure(s) related to customers	2.32	0.71	11	3.04	1.33	11
<u>Level 3</u>						
Performance evaluation based on non-financial measures related to operations	2.16	0.78	15	2.97	1.40	12
For the evaluation of major capital investments, non-financial aspects are documented and reported.	2.19	0.72	12	2.94	1.23	13
Analysis of competitive position	2.19	0.75	13	2.89	1.19	14
Budgeting with 'what if analysis'	2.15	0.71	17	2.88	1.17	15
Stock control models	2.16	0.74	16	2.83	1.26	16
Flexible budgeting	2.05	0.78	18	2.70	1.40	17
Analysis of competitors' strengths and weaknesses.	2.17	0.69	14	2.66	1.06	18
<u>Level 4</u>						
Performing sensitivity 'what if' analysis when evaluating major capital investment projects.	1.87	0.73	20	2.38	1.28	19
Target costing	1.79	0.77	22	2.36	1.39	20
Activity-based budgeting	1.81	0.73	21	2.34	1.33	21
Evaluation of major capital investments based on discounted cash flow method(s)	1.92	0.77	19	2.32	1.31	22

	Importance^a			Usage^b		
	Mean	Std. dev.	Rank	Mean	Std. dev.	Rank
<u>Level 5</u>						
Using departmental overhead rates	1.67	0.74	28	2.12	1.30	23
Using a plant-wide overhead rate	1.61	0.76	30	2.12	1.42	23
Value chain analysis	1.69	0.79	26	2.10	1.38	25
Calculation and use of cost of capital in discounting cash flow for major capital investment evaluation	1.75	0.74	23	2.10	1.21	26
Performance evaluation based on non-financial measure(s) related to employees	1.75	0.64	23	2.09	1.13	27
The possibilities of integration with suppliers' and/or customers' value chains	1.68	0.74	27	2.08	1.17	28
Cost of quality	1.73	0.70	25	2.05	1.16	29
Zero-based budgeting	1.54	0.70	32	1.99	1.28	30
Benchmarking	1.65	0.64	29	1.97	1.08	31
Activity-based costing	1.57	0.69	31	1.83	1.14	32
<u>Level 6</u>						
Industry analysis	1.41	0.61	35	1.65	1.14	33
Product life cycle analysis	1.46	0.66	33	1.65	0.93	34
Performance evaluation based on residual income or economic value added	1.43	0.62	34	1.63	1.03	35
Shareholder value analysis	1.32	0.59	37	1.50	0.88	36
Evaluating the risk of major capital investment projects by using probability analysis or computer simulation	1.37	0.59	36	1.48	0.93	37
Using regression and/or learning curve techniques	1.17	0.45	38	1.24	0.61	38

^a Based on 3-point scale (1 = not important, 2 = moderately important, 3 = important).

^b Based on 5-point scale (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = very often).

Table 4 Prediction of the usage of MAPs

MAPs that will be phased out	MAPs that will be increasingly adopted
Plant-wide overhead rates	Cost-volume-profit analysis for major products
Separation between fixed and variable costs	Investment appraisal using DCF
Departmental overhead rates	Information concerning cost of quality
Non-financial measures related to operations	Non-financial measures related to employees
	Analysis of competitors' strengths and weaknesses