Application of Management Accounting Techniques to Decision-Making in a Developing Country

*John Matsoha** and *Nessan Ronan***

ABSTRACT

The business world has available a plethora of decision-making techniques. But to what extent do they use these techniques when they make decisions. This paper addresses this crucial issue. A sample of firms in the Lesotho garment industry were surveyed. All these firms are producing for export and can thus be described as competing in the global business arena. The results of the study are reported and recommendations are made as to how the financial decision-making process could be improved.

Decision-making, although intertwined with planning and control, is viewed as a simple, systematic process which involves a series of logical steps such as stating and prioritising objectives, identifying alternative solutions and evaluating them against the objectives, selecting the best alternative, and controlling the adverse consequences of the alternative chosen (Drury, 2000:412; Upchurch, 1998:19; Arnold & Turley, 1996:13). It is desirable that the objectives are measurable in order to determine the extent to which they are achieved. As a consequence, quantitative data is preferable to qualitative data.

Quantitative data embraces both financial and non-financial data. Qualitative data, generally understood not to be measurable, is however not ignored in decision making. It is argued that where qualitative data is available the decision-maker needs to carry out some evaluation of the probable impact of the qualitative factors on the outcome of the alternatives being considered. The evaluation is done in order to improve decision-making by supporting judgment (Drury, 2000:280; Bonini *et. al.*, 1997:6).

This paper reports on an empricial study into the decision-making techniques used by firms in the textile industry in Lesotho.

GOVERNMENT SUPPORT

By encouraging the Clothing, Textile and Footwear organisations to produce for export, the Lesotho Government Policy facilitates strategic decisions. Lesotho's organisations are expected to achieve and maintain their

* Lecturer - Department of Business Administration, University of Lesotho

**Professor of Accounting - National University of Lesotho

competitiveness. Investment incentives such as the exemption from General Sales Tax (GST) on raw materials, production machinery and equipment (VAT introduced from 1st July 2003) and the securing of free or highly concessionary access to regional and international markets, are meant to encourage production and distribution of products respectively at low cost. Other decisions such as cost-based pricing are similarly influenced by such investment incentives.

Furthermore, promoting export-led production places the Lesotho textile industry in the environment of World-Class Manufacturing (WCM). World-Class Manufacturing is focused on quality, shorter lead-times, adaptability/flexibility, and low cost. In pursuance of WCM standards, businesses in the Lesotho textile industry are obliged to produce at the lowest cost possible while at the same time maintaining a position that is consistent with the quality of their products and other competitive factors.

Problem Statement

Costs are treated as an important factor in decision-making. Costs for one alternative course of action are compared with costs of other acceptable alternatives. Differences in costs account for the differences in the profitability of the alternatives being considered, consequently influencing the choices to be made. Management accounting techniques used for cost determination and relevance for different alternatives are dictated by the kind of decisions being made, such as pricing decisions, marketing or investment appraisal.

Objectives of the Study

To identify

- Management accounting techniques used by the Lesotho textile organisations in pricing decisions;
- Management accounting techniques used by the organisations in marketing and distributing their products.
- Management accounting techniques to evaluate capital expenditure decisions.

Research Methodology

A literature review of the different management accounting techniques used for pricing and marketing products and for investment appraisal decisions has been carried out. A structured questionnaire interview was conducted to find out what techniques are used in the textile industry in Lesotho.

Management Accounting Techniques

The role of the management accountant, as provider of information in decision-making, essentially begins when alternative courses of action have been identified. At this stage the management accountant is expected to collect and analyse the data and use appropriate techniques to evaluate each alternative (Hilton, 1997:780). Uncertainty and risk in each alternative are also assessed. Both quantitative and qualitative factors are considered.

Accounting information is applied. Whereas financial accounting is concerned with the supply of objective and verifiable information which relates to the past financial performance of a business, management accounting provides information to management in the form of future forecasts, including the monitoring of information on current and actual past performance. Management accounting can use data that is less objective and less verifiable and also more future oriented than financial accounting. It also uses non-financial data and thus management accounting is more flexible as an information

system than financial accounting. (Kaplan & Atkinson, 1998:1; Arnold & Turley, 1996:6).

Techniques in Pricing Decisions

It is generally accepted that in market economies, prices are fixed by the market. Techniques such as those found in Economics, which portray price/demand relationships, are applied; but other techniques, such as those which rely on cost as a basis for determining the price, are equally used. Cost-based models are associated with accounting.

The price/demand relationship model is considered theoretically sound. It incorporates the concepts of marginal costs and marginal revenues and establishes prices at the optimal level of output where marginal revenues equal marginal costs. Despite its conceptual merits, the model has serious limitations and may not be regarded as practical. The reason advanced is that it is very difficult to estimate the demand for individual products. The task becomes even harder when competitive factors are taken into consideration. It is also assumed that price is the only factor that influences demand whereas, in real-life situations, other factors such as the quality of a product, advertising, and credit terms, come into play. Furthermore, extensive analysis is required to determine marginal costs of individual products. Even after expending much effort, only an approximation of the marginal cost is made. For these reasons the economics model may seldom be used (Drury; 2000:377).

Cost-based approaches such as cost-plus-pricing methods are available. Briefly cost-plus techniques involve adding a certain profit mark-up to the cost of a product. Absorption costing or variable costing may be used. A variety of cost bases is considered acceptable for the calculation of a profit mark-up, for example, the prime cost; the manufacturing cost; or the total cost (Hansen & Mowen, 2000:702). The profit mark-ups maybe arbitrarily fixed, although, less arbitrary approaches that are associated with demand and competition of a product are used. A higher mark-up tends to be fixed on a product that is in great demand, and a lower mark-up fixed where competition is seen as fierce (Drury, 2000:388). Sometimes a mark-up that is equivalent to the rate of return on the investment (ROI) is preferred.

Cost-based approaches are criticised mainly for ignoring demand and for the problems associated with overhead cost allocations. They do not take consumers' preferences into consideration. It is argued that successful pricing efforts must consider the value which customers place on products. Customers are deemed to know what they want and that ultimately it is not the suppliers who choose them but that they, the customers, choose the suppliers (Newcomb, 1998:22; Dolan, 1995:175).

A technique which seems to balance the two approaches, that is, the market-oriented and the cost-based methods, is target pricing. A target price is taken as a form of market-based price, as it is a predetermined price which potential buyers are expected to be prepared to pay. It is not an actual market price, although a market price if available would not be rejected. It is reasoned that the estimated price reflects customers' perceived value of the product and competitors' reactions (Hansen & Mowen, 2000:702; Horngren *et. al.*, 2002:372). It is understood that when selling prices are estimated, it is the responsibility of the management during the design stage to ascertain target prices that can be met by controlling costs in a way that ensures that the desired profit is made.

The control of costs eventually results in the fixing of a target cost. The target cost is achieved through a process of value engineering which examines products with the aim of reducing costs while maintaining functionality and performance (Atkinson *et. al.*, 2001:375). Value engineering may be a complex exercise which, in some cases, demands the change of the design of the product or the replacement of the product materials, or even the redesign of the manufacturing process. Thus, setting the target price unavoidably leads to the determination of the target cost which really represents a long-term cost that allows a business to make its target profit (Atkinson *et. al.*, 2001:375; Horngren *et. al.*, 2000:429; Morse *et. al.*, 2000:381).

Techniques in Marketing Decisions

Accounting is criticized for tending to over-emphasize the financial aspect. It is argued that while it is important to preserve the financial perspective, non-financial indicators are equally important as they provide the results of current activities which, in turn, influence the future financial performance of businesses (Horngren *et. al.*, 2000:468; *McCann*, 1998:34; Hilton, 1997:497).

Marketing activities are regarded in this paper from the non-financial perspective, providing information of a qualitative nature which may not be easily susceptible to measurement. Market segmentation such as niche marketing and mass marketing and the use of brand names or generic names have an influence on the financial performance of a business.

Briefly mass marketing creates segments according to the size of a population, occupation and income, whereas niche marketing narrows down the population by focusing on personal traits such as lifestyle and values. Mass marketing may be driven be factors such as low cost and wide selection of products whereas niche marketing tries to satisfy the unique demands of a small market segment (Atkinson *et. al.*, 2001:37, Leontiades, 2001:81; Kotabe & Helsen, 1998:199).

Brands, including private labels of well-known stores, are taken to signify the capability of a business to produce a particular product, or some distinctive quality, such as consistency of fit. Brands are therefore considered to add value to products, protect consumers from imitations, and to create price differentials between rival products (Levicki, 1997:98). To prevent Lesotho's products from being treated as imitations, organizations use brand names. The labels also serve as confirmation that Lesotho's businesses adhere to certain standards and have certain competencies on which consumers can rely. It becomes clear that products with no names, that is, with generic names, require a great deal of advertising before they become known and are able to compete with those that have already established brand loyalty.

As the Lesotho textile industry produces for export, marketing strategies such as those just described in the preceding paragraphs are important and management accounting information ought to evaluate them for the purpose of understanding better the financial performance of the businesses. There may be non-financial indicators, such as those which highlight the size of the market share or the relationship of the market share to profitability.

Information of this nature for reasons of confidentiality is not easily accessible. What is dealt with in this study as far as marketing is concerned is only the information on market segmentation and the product brands.

Techniques in Capital Budgeting Decisions

Capital investment decisions involve expenditure of large sums of money with the expectation that the future returns will be sufficient to recover the original outlay and also provide a return on the investment. Typical decisions comprise the purchase of new machinery and equipment, replacement where the original machinery has become old or less efficient, or the choice between several machines (Garrison & Noreen, 2000:668).

With reference to the Lesotho Clothing, Textile and Footwear industry, the decisions taken are expected to cover investment in machinery and equipment, but not in buildings as the Lesotho National Development Corporation (LNDC) provides purpose-built factories for rental as part of the investment incentives (LNDC, 1997:8).

The acquisition of capital assets carries a great risk. As a result, careful screening is required to ensure that unwanted assets are not acquired. This screening entails demanding that projects in which the assets are used meet certain fixed minimum standards of acceptance such as fixed rates of return on the investments (Garrison & Noreen, 2000:668; Morse & Zimmerman, 1997:472).

RESEARCH RESULTS

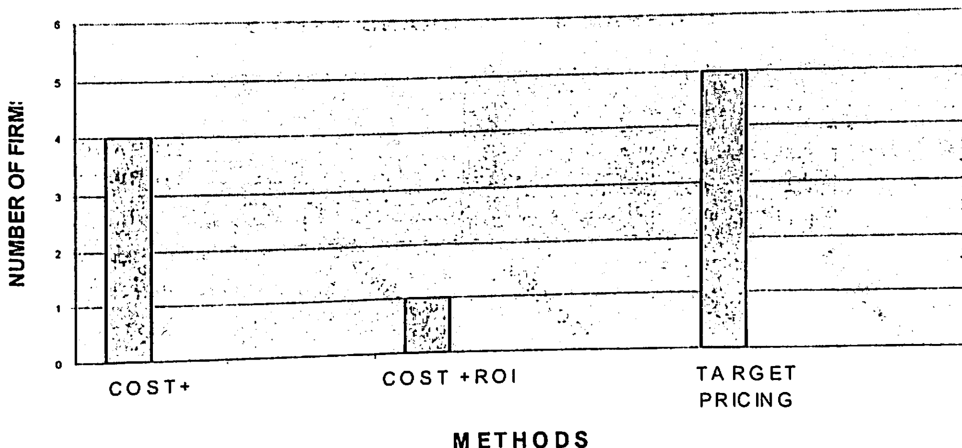
Pricing

The aim of the question which managers of the Lesotho Textile Industry were asked, was to find out whether economic models such as those involving supply and demand, or cost-based techniques are relied upon. The following bar chart was drawn up based on the managers' response:

Pricing Methods

The bar chart shows that Lesotho's organisations employ cost-based pricing methods. Cost-plus methods are used by as many as four (forty percent) of the ten organisations. The cost, plus a desired rate of return on investment method, is used by ten percent of the organisations, and represents only one organisation. The remaining five (fifty percent) of the ten organisations use target pricing.

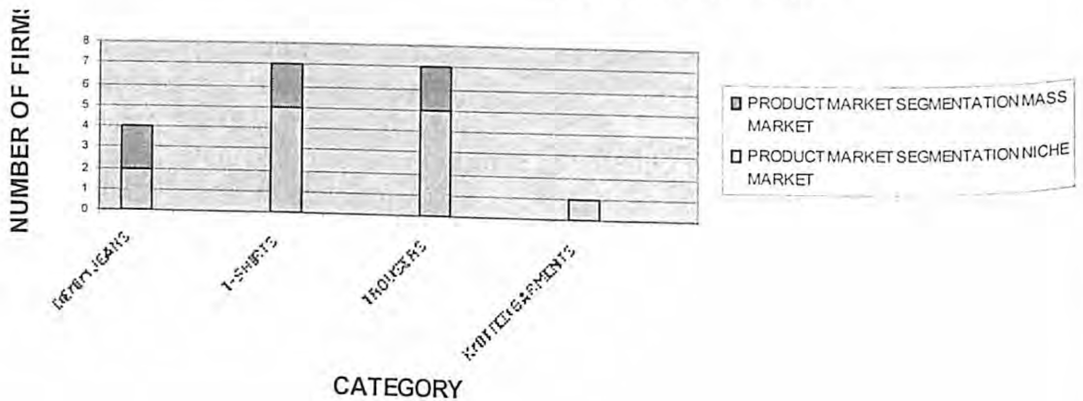
DIAGRAM 1 PRICING METHODS



Marketing

Lesotho's products are sent to the Republic of South Africa (RSA), the Southern African Development Community (SADC), the European Union (EU), Canada and the United States of America (USA). The largest proportion is exported to the USA. For marketing, two questions were directed to the managers and Diagram 2 was prepared from the responses received.

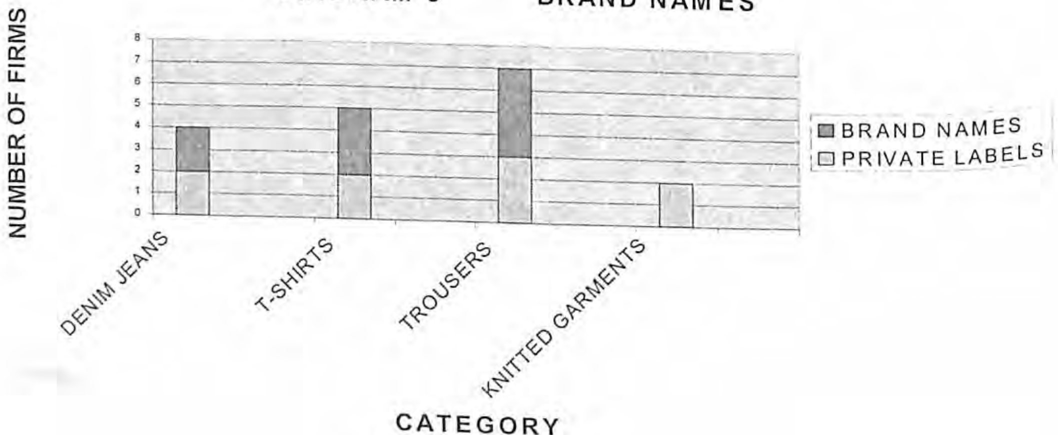
DIAGRAM 2 PRODUCT MARKET SEGMENTATION



PRODUCT MARKET SEGMENTATION

From the comparative bar charts, it is illustrated that trousers and T-shirts tend to be produced more according to the lifestyle than the income of consumers. Knitted garments are also produced according to lifestyle. Footwear and umbrellas are not depicted on the bar chart, but it has been noted that these are manufactured to suit both the lifestyle and income of the buyers. With respect to brand names, two questions were similarly asked of the managers. Diagram 3 shows the results of the responses.

DIAGRAM 3 BRAND NAMES



BRAND NAMES

Comparative bar charts have been compiled. They illustrate that only products with brand names and private labels are being produced. What is also apparent is that private labels are used more than brand names for trousers and T-shirts.

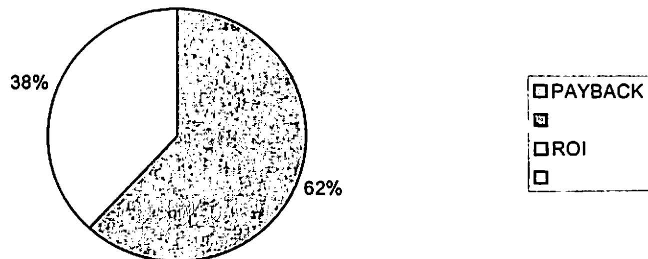
Knitted garments carry only private labels. Greater use of private names than brand names serves as an indication that Lesotho's manufacturers are producing for big stores in the market.

Although no bar charts are provided for organizations engaged in the production of footwear and umbrellas, it is has been noted that brand names or trademarks and personal names are also used for these.

Capital Budgeting

Two questions were directed to the managers. The first was concerned with four techniques which are generally accepted as part of the evaluation criteria, namely, the pay-back period, return on investment, internal rate of return (IRR), and the net present value (NPV). The second was meant to identify what managers would regard as a minimum acceptable payback period. The pie chart, Diagram 4, is provided to show the results of the responses to the first question:

DIAGRAM 4 INVESTMENT METHODS



METHODS OF INVESTMENT CRITERIA

Only two methods of investment appraisal are depicted as the other methods, namely, the internal rate of return (IRR) and the net present value (NPV) are never used by the organizations. Both the return on investment and the payback period are non-discounting methods. Of the ten organizations, two claimed that their capital budgeting decisions, including any policies, were handled by their head offices. The head offices are overseas and not in the RSA; contact was therefore not made. As indicated, the pie chart shows responses from eight organizations only.

The payback period is used by five organizations (62%) whereas the return on investment is employed by three organizations (38%).

Responses to the second question regarding the minimum acceptable Payback Period, numbered five as only five organizations claimed

to use the payback period. Three organizations consider a maximum period of three (3) years as an acceptable period, whereas the remaining two organizations accept four (4) years.

There is little difference between the organizations. Three and four years are short periods which would be considered compatible to a rapid recovery of the initial investment in a project.

The conclusion reached is that a maximum acceptable payback period of either three or four years reflects an organisation's need to minimize risk through quick recovery of the investment.

SUMMARY AND CONCLUSIONS

Pricing

In the discussion on the pricing strategy, albeit that it is accepted that prices are determined by the market and that the theory model is applicable, it is realised that the economics theory model, even though considered reasonable and logical, is not easy to apply in practice. As a result, cost-based methods, even though they ignore demand, are used because the information on costs is relatively easy to secure. However, the argument is that these cost-based methods are used only to estimate a minimum price. This minimum price is subject to change once the market price becomes known.

The cost-based methods used by the Lesotho textile businesses are: total cost plus a profit margin, total cost plus a desired rate of return on investment, and target costing. Target costing is the method used most frequently as it is applied by fifty percent of the organizations.

Marketing

Everything Lesotho produces is for the export market. The regional markets are in the RSA and the SADC (excluding the RSA). International markets are overseas, and comprise mainly the USA, Canada and the European Union.

Some organisations confirmed that they use niche marketing which focuses on demographic and lifestyle factors; and mass marketing, which selects the middle-income group as target consumers.

It was found that Lesotho exports products with brand names and private labels. There are a number of benefits accruing from the use of these brand names and private labels. Brand names add value to products and protect consumers from imitations. They also serve as proof that Lesotho organisations adhere to certain standards, and have certain competencies on which consumers can rely. Selling products with brand names and private labels reduces marketing costs, interalia advertising, which would otherwise be incurred on the sale of a "no-name" (generic) product.

Capital Budgeting

For capital investment decision-making, the relevant cost approach is used, which includes techniques that apply the principle of the time value of money. Discounting and non-discounting techniques are available for appraisal. Discounting techniques take the time value of money into account, whereas non-discounting methods do not.

Eighty percent of Lesotho's organisations acknowledged that they undertake capital investment decisions. They use non-discounting methods for appraisal, such as the payback

period and the return on investment. The payback period is used by five of eight businesses (62%), while the return on investment is applied by three of the eight organisations.

In regard to the time considered long enough to recover investments in the textile industry, a period of three or four years is regarded as the maximum acceptable payback period.

RECOMMENDATIONS

Pricing

Lesotho's businesses use cost-based methods for pricing their products. However, costing methods such as absorption costing are criticised for assigning overhead costs to products on the basis of volume-related cost drivers which do not necessarily take into account the cause-and-effect relationship between overhead cost items and cost drivers. Consequently it is understood that volume-based cost drivers tend to distort product costs, such as over-costing some products and under-costing others.

In view of costing problems caused by the assignment of overhead costs to products through traditional costing techniques, it is recommended that Lesotho's organisations consider introducing activity-based costing (ABC) to ensure that appropriate cost drivers which take into consideration cause-and-effect relationships, are used. However, it is expected that the benefits of implanting ABC will be weighed against cost considerations by individual organizations.

ABC is also considered useful in cost management since it permits value analysis to be undertaken with ease. By applying value analysis, businesses are able to identify value-adding activities from non-value adding activities. As a result, non-value adding activities which are taken to increase costs without adding value to products are isolated and eliminated. Thus cost reduction may be achieved.

Marketing

The bulk of Lesotho's exports goes to the USA. Very little is exported to SADC, EU and Canada. Lesotho's businesses which originate from overseas countries tend to focus on the USA, whereas businesses of South African origin tend to split their exports between SADC and the overseas markets. It is recommended that further research be undertaken to find ways to increase exports to the smaller markets of SADC, EU and Canada.

Capital Budgeting

Non-discounting techniques such as the payback period and the return on investment are the only techniques used for capital budgeting in the Lesotho textile industry. While it is accepted that they are simple and easy methods to understand, they ignore the time value of money and cash flows. They are regarded as being concerned with short-term liquidity and not long-term profitability (Arnold & Turley, 1996:301). There is nothing wrong in using them but they should not be used as the only means of investment appraisal. It is recommended that discounting techniques such as the NPV be incorporated in the evaluation of investments, since they take into account the time value of money and the cash flows. They are concerned with long-term profitability.

References

Allen, D. 1996. "Net Present Value Revisited." *Management Accounting*, 74(5):56, May.

Anold, J. & Turley, S. 1996. *Accounting for Management Decisions* 3rd ed. London: Prentice-Hall. 481 p.

Atkinson, A.A., Banker, R.D., Kaplan, R.S. Young, S.M. 2001. *Management Accounting*. 3rd ed. Upper Saddle River: Prentice-Hall. 595 p.

Bonini, C.P., HAusman, W.H. & BIerman, H. 1997. *Quantitative Analysis for Management*. 9th ed. Chicago: Irwin. 540 p.

Dolan, R.J. 1995. "How Do You Know When the Price is Right?" *Harvard Business Review*, 73 (5): 174-192, September/October.

Drury, C. 2000. *Management and Cost Accounting*. 5th ed. London: Thomson Learning. 1194 p

Garrison, R.H. & Noreen, E.W. 2000. *Managerial Accounting*. 9th ed. Boston: McGraw-Hill. 923 p.

Hansen, D.R. & Moven, M.M. 2000. *Management Accounting*. 5th ed. Cincinnati: South-Western College Publishing. 850 p.

Hilton, R.W. 1997. *Managerial Accounting*. 3rd ed. New York: Mc Graw-Hill. 1002 P.

Horngren, C.T., Bhimani, L. Datar, S.M. & Foster, G. 2002. *Management and Cost Accounting*. 2nd ed. Harlow: Pearson Education Limited. 919 p.

Horgngren, C.T., Foster, G. & Datar, S.M. 2000. *Cost Accounting: A Managerial Emphasis*. 10th ed. Upper Saddle River: Prentice-Hall. 906 p.

Kaplan, R.S. & Atkinson, A.A. 1998. *Advanced Management Accounting*. 3rd ed. Upper Saddle River: Prentice-Hall. 798 p.

Kotabe, M. & Helsen, K. 1998. *Global Marketing Management*. New York: John Wiley & Sons, Inc. 711 p.

Lefley, F. 1997. "Modified Internal Rate of Return; Will It Replace IRR?" *Management Accounting*, 75(1): 64-65, January.

Leontiades, J.C 2001. *Managing the Global Enterprise*. Harlow: Pearson Education Limited. 215p.

Levicki, C. 1996. *The Strategy Workout*. London: Pitman. 263 p.

LNDC (Lesotho National Development Corporation). 1997. *News: 30th Anniversary Commemorative Issue, 67/97*. Maseru. 32p.

Lumby, S. & Jones, C. 1999. *Investment Appraisal and Financial Decisions*. 6th ed. London: Thomson Learning. 647 p.

Mccunn, P. 1998. "The Balanced Score-card." *Management Accounting*, 76 (11): 34-36, December.

Morse, C.D. & Zimmerman, J.L. 1997. *Managerial Accounting*. Chicago: Irwin. 619 p.

Morse, W.J., Daview, J.R. & Hartgraves, A.L.L. 2000. *Management Accounting: A Strategic Approach*. 2nd ed. Cincinnati: South-Western College Publishing. 704 p.

Newcomb, L.M. 1998. "Best Pricing: Beyond Market Share and into the Profit Zone." *Marketing Mix*: 22, August.

Upchurch, A. 1998. *Management Accounting: Principles and Practice*. London: Pitman Publishing. 706 P.