

INAUGURAL PAPER

ORGANISATIONAL COMPETITIVENESS AND THE ROLE OF MANAGEMENT ACCOUNTING TECHNIQUES IN DECISION MAKING.

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Abstract

Decisions about costs in organizations often arise from a detailed knowledge of both the firm's cost structure and management's competitive strategy. Management accounting helps identify the costs and benefits of different planning decisions, thus allowing managers to make choices that increase organizational value. There have been many developments in both management accounting research and practice on the use of management accounting tools and models by managers to achieve organizational competitiveness. Hence, the paper seeks to review the current state of knowledge on management accounting tools and models (i.e emergent techniques) relevant in the decision making process. In summary, the paper highlights management accounting information as a resource for decision making. Consequently, it advocates that managers adopt management accounting tools to enhance organizational competitiveness.

Keywords: accounting information; decision making; management accounting techniques; competitiveness.

1. Introduction

The world has shrunk with the advent of electronic communication, faster transportation, and financial flows. Hence, global competition has intensified and few enterprises are now safe from foreign competition. As a result, the pace of innovation in products and services has accelerated. This increased global competition has forced many firms to become more cost competitive. Competitiveness is how effectively an organization meets the wants and needs of customers relative to others that offer similar goods or services in competitive environments (Zimmerman, 2009:661). Businesses compete using operations and marketing. Using operations, businesses compete through low cost, high quality, fast delivery, flexibility, and value added service.

Along with decisions about markets, products and operating policies, managers must focus on cost issues to build profitable organizations. Decisions about costs often arise from a detailed knowledge of both the firm's cost structure and management's competitive strategy. Thus, planning for the future and exercising day-to-day control over businesses to retain organizational competitiveness involves a wide range of decisions being made. Evidence suggests that managers make better decisions when they use relevant information. However, changing business environment leaves business managers with no choice in extraordinary circumstances other than to make decisions through intuition. Intuition relies on patterns developed through continual exposure to actual situations (Simon, 1987).

Therefore, to make better decisions, managers use decision making support models and techniques (Atril and Mclaney, 2009: 24; Horngren, Sundem and Stratton, 2002:9). These models include the rational model (Ansoff, 1965); incremental model (Quinn, 1981); bounded-rational model (Simon, 1958) and garbage can model (Cohen, March and Olsen, 1972). Decision making methods refer to procedures and techniques utilized to arrive at a decision. This may refer to cluster analysis (Bittman and Gelbard, 2007), fuzzy logic (Gu and Zhu, 2006), simulation (Eldabi, Irani, Paul and Dove, 2002), Delphi

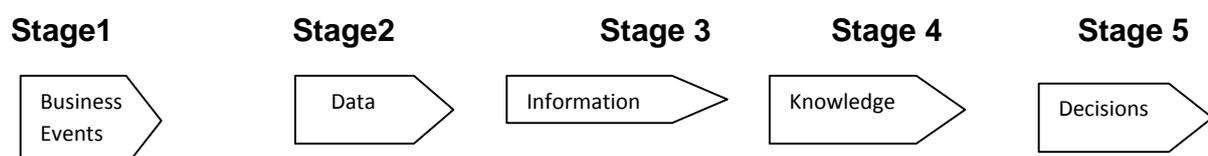
The important aspect of decision making process is the interrelatedness of the functions, to create a synergy of the total process. The presence of this synergy means that the decision making functions have more value as components of the process than as functions in their own right (Harrison, 1996:49). Management accounting is one such component as it assists in planning and control decisions.

Management accounting plays an integral role in the organizational structure by assigning responsibilities through the budgeting process and by providing managerial performance measures. Management accounting also identifies the costs and benefits of different planning decisions, thus allowing managers to make choices that increase organizational value (McWatters, Zimmerman and Morse, 2008:555).

There have been many important developments in both management accounting research and practice following developments that have taken (and are still taking) place in business that focus on the use of management accounting techniques by managers to achieve competitive advantage. For example, Zimmerman (1997) discerns two purposes of a management accounting system as: to provide some of the knowledge necessary for planning and decision making and to help motivate and monitor people in organizations. Thus, the main objective of this presentation (paper) is to provide management accounting information as a resource for decision making, management decisions requiring management accounting information, emergent management accounting techniques in decision making, and organizational innovations impacting management accounting.

2. Management accounting information as a resource for decision making.

Management accounting develops cost information for making decisions at the strategic, tactical and operational level. The information is developed and used within the organization's information value chain, from stage 1 through stage 5 as shown blow.



At lower stages of the value chain, management accountants gather and summarize data (stage2) from business events (stage1) and then transform the data to information (stage3) through analysis and use of the management accountant's expertise. At stage 4 the information is combined with other information about the organization's strategy and competitive environment to produce actionable knowledge. At stage 5 management accountants use this knowledge to participate with management teams in making strategic decisions that advance the organization's strategy.

Cost information is used to manage the firm and make the firm more competitive and successful. Thus, cost management information is provided for each of the four major management functions: (1) strategic management, (2) planning and decision making, (3) management and operational control, and (4) preparation of financial statements. See table 1 below for details.

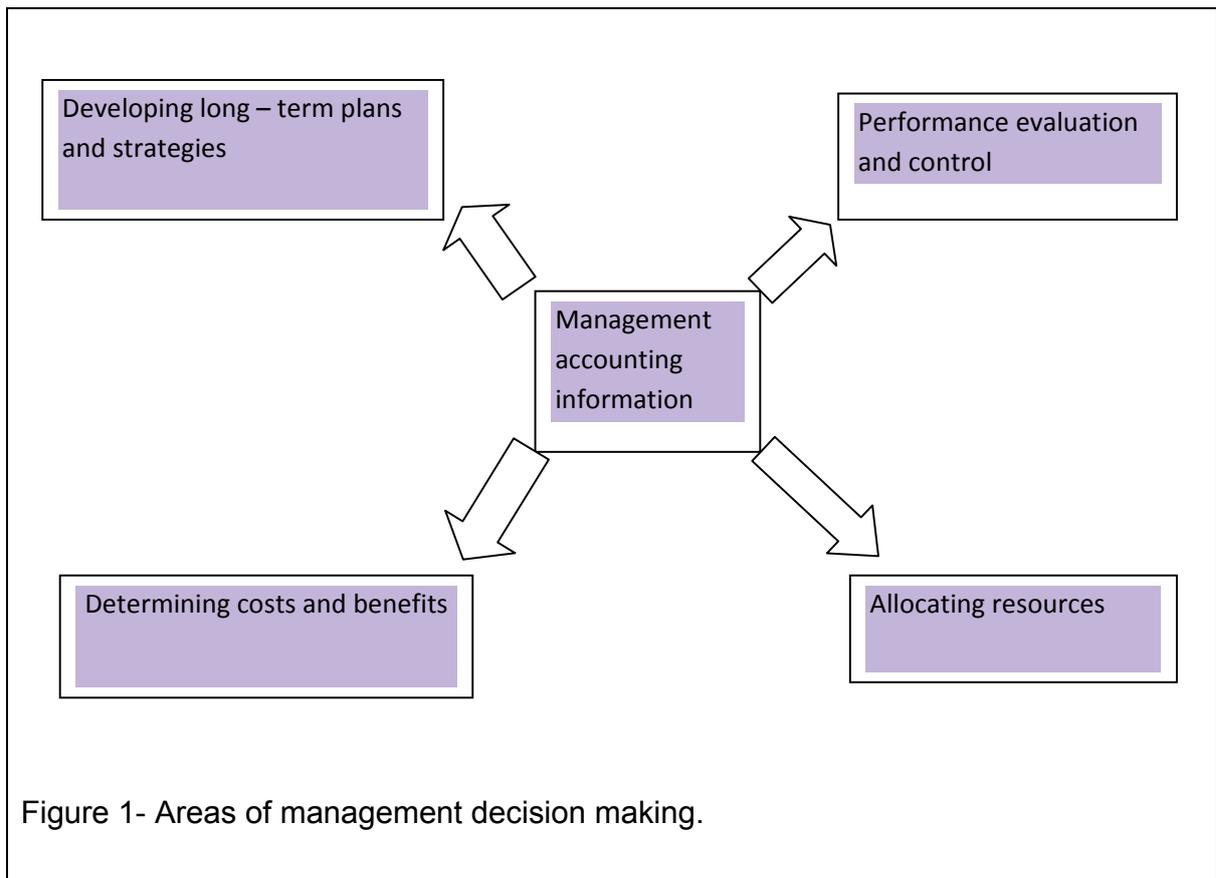
Table 1 :Management functions

1. **Strategic Management.** Cost management information is needed to make sound strategic decisions regarding choice of products, manufacturing methods, marketing techniques and channels, assessing customer's profitability and other long – term issues.
 2. **Planning and Decision Making.** Cost management information is needed to support recurring decisions regarding replacing equipment, managing cash flow, budgeting raw materials purchases, scheduling production, and pricing.
 3. **Management and Operational Control.** Cost management information is needed to provide a fair and effective basis for identifying inefficient operations and to reward and motivate the most effective managers.
 4. **Preparation of Financial Statements.** Cost management information is needed to provide accurate accounting for inventory and other assets, in compliance with reporting requirements, for the preparation of financial reports and for use in the three other management functions.
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Management accounting information aid managers in developing long-term plans and strategies, performance evaluation and control, allocating resources and determining costs and benefits (Atril and Mclaney, 2009: 24).

Decisions concerning such matters as the optimum level of output, the optimum mix of products and the appropriate type of investment in new equipment will all require management accounting information. Furthermore, many management decisions require knowledge of the costs and benefits of pursuing a particular course of action such as providing a service, producing a new product or closing down a department. The decision will involve weighing the costs against the benefits. The management accountant can help managers by providing details of particular costs and benefits. In some cases, costs and benefits may be extremely difficult to quantify; however, some approximation is usually better than nothing at all.

The areas of management decision making are set out in Figure 1 below.



3. Selected management accounting techniques and decision making

Various management accounting techniques have been adopted by managers in making and implementing strategic decisions in dynamic environments (Waldron, 2007). Some of the techniques focus on strategy implementation, while others focus on process improvement. The selection of the techniques discussed in this paper is based on current discussions in management accounting circles. Hence, while—activity-based costing (ABC), Activity-based management(ABM), value chain analysis, the balanced scorecard (BSC), profitability analysis, target costing, product life-cycle costing, strategic management accounting and business intelligence focus on strategy implementation, benchmarking, business process improvement, total quality management, lean accounting, the theory of constraints, enterprise sustainability, and enterprise risk management focus on process improvement (Waldron, 2007; Simon, Marko and Maja, 2005; Zawawi and Hoque, 2010; Blocher, Stout and Cokins, 2010: 10-11). Each of these techniques is briefly explained in the following sub-sections.

3.1 Strategy implementation management accounting techniques

The following sub-sections present management accounting techniques focusing on strategy implementation.

3.1.1 Activity-based costing (ABC)

Cost allocation in firms can provide misleading information about the profitability of products, product lines, customers, and markets. Traditional cost allocation practices allocate all manufacturing overhead costs using a single driver such as direct labour hours or machine hours. Sales-related costs are typically ignored. While technically accurate, in most complex organizations a single overhead cost driver is not sufficient to

accurately assign the pool of overhead costs to the products that are being produced or the customers that are being served (Doyle, 2002:1).

Many firms—from manufacturing to banking and financial services to hospitality and not-for-profit organizations—have benefited from designing and implementing ABC overhead allocation systems. Hence, using ABC tools has helped these organizations to understand profitability more clearly, and has provided meaningful information about processes and costs associated with delivering goods and services. A well designed and implemented ABC system is a powerful aid to management evaluation and decision-making, thereby improving organizational performance (Kennedy and Affleck graves, 2001; Turney, 1992).

ABC requires identification of the activities required to make the products, the resources used to provide for those activities, and finally the cost of those resources .Thus, firms continuously search for ways to eliminate waste – a process known as continuous improvement (Mowen et al, 2009). Thus, activity- based costing (ABC) and activity-based management (ABM) are management accounting techniques used in the continuous improvement processes , both in manufacturing and service organisations.

An ABC analysis provides managers with a wealth of financial and operational information. The benefits of ABC include the following (Mowen et al, 2009):

- Costs are associated with activities that create those costs.
- Profitability can be calculated from multiple perspectives, such as product line, customer, or market.
- It provides information about “hidden” losers and winners, i.e. which product lines/customers/markets have lower profit margins than was originally thought and which give better profit margins.
- It provides cost rates for organizational activities that are helpful for benchmarking and making process decisions.

- It aligns with business process reengineering work by helping managers to put a price tag on non value-added activities, such as waste or rework.
- Attention is focused on process costs and how they interact with profitability segments.
- In conclusion, ABC is used to Improve Processes and Evaluate Customer Profitability.

The supplementary technique to ABC is Activity-based management (ABM). Activity-based management (ABM) is a management control technique involving the identification of activities, establishing the cost of those activities and the actual management of them. It helps managers to identify diversionary activities and costs reduced accordingly, improve profitability by establishing accurate product costs, measure performance, eliminate unprofitable customers, raise or lower product prices, and or drop certain services or products (Dyson, 2010:451).

ABM focuses on the dimensions of cost and process in cost management. The cost dimension focuses on resources, activities and cost objects involved in the production of goods or provision of services. It also focuses on process value analysis (PVA). The process dimension focuses on cost reduction. To achieve the cost reduction objective, information is obtained about: What activities are performed, why they are performed and resources required (cost driver analysis), and how well they are performed (i.e performance measures). In this regard, activities can be classified as value-adding or non-value- adding. Value-adding activities- are those activities necessary to remain in business. Value adding activities contribute to customer value or help meet the organisation's objectives. Non-Value adding activities are those activities that are unnecessary, those that fail to produce a change in the state of the organization's product /service or those that replicate work because it was not done correctly the first time. Non-value adding activities give rise to non-value -added costs. These costs may also be caused by inefficient performance of value added activities. Therefore, activity analysis attempts to identify and eventually eliminate all unnecessary activities, and

simultaneously, increase the efficiency of necessary activities. Assessing the value content of activities enables managers to take decisions to eliminate waste, thus reducing cost (Blocher, Stout and Cokins, 2010).

According to Joseph (2006), organisations utilise management accounting techniques like activity based costing and activity based management (ABC/M) as an 'enabler' for business improvement programmes that focus on cost reduction and process improvement.

Despite the mentioned benefits of ABC, adoption rates in both the private and public sectors have been low (Maelah and Ibrahim, 2007). In particular, the existing literature on ABC adoption in the public sector has not illustrated a clear picture of the nature and understanding of ABC. Reasons for this can be attributed to contextual and organisational factors. These factors include: firstly, perceived costs of its implementation, lack of support by top management, limitations on capacity to employ ABC, non-involvement of non-financial managers in the implementation of ABC/M, and lastly difficulties in establishing precise performance criteria for evaluating expenditure (Hansen, and Mowen, 2009:444). Notwithstanding low adoption, the arguments against ABC adoption are shadowed by potential benefits in cost reduction (Anderson, 1995; Banker and Johnson, 1993; Kaplan, 1992, Foster and Swenson, 1997; Krumwiede, 1998; McGowan and Klammer, 1997; Shields, 1995).

3.1.2 Value chain analysis (VCA)

The value chain analysis (VCA) is an investigatory technique used to assess the value added to a product as it goes through a sequence of activities right from the development stage through to the point when it is delivered to the customer (Dyson, 201:465). Organizations use VCA to identify the specific steps required to provide a competitive product or service to the customer. It is argued that by determining the value added to the product at every stage of the production process a company can

gain an advantage over its competitors (Porter, 1985). VCA help management spot non-value adding activities, that is, where costs can be reduced. Also, the analysis is used to find ways to increase value for the customer at one or more steps of the value chain. A key idea of the value-chain analysis is that the firm should carefully study each step in its operations, to determine how each step contributes to the firm's profits and competitiveness (Blocher, Stout and Cokins, 2010).

3.1.3 Balanced scorecard (BSC)

The balanced scorecard is a performance measurement tool that links the organisation's objectives with its performance (Kaplan and Norton, 2000; Epstein and Birchard, 2000). The BSC has gained prominence in accounting research as a way of integrating financial and non-financial performance measures into an overall control system (Atkinson et al., 1997; Hoque and James, 2000; Malina and Selto, 2001; Simons, 2000).

The BSC translates the strategy of the organisation into an action plan that identifies specific objectives and performance measures to help determine whether the organisation is moving in the right direction. The scorecard has four perspectives (financial, internal business process, innovation and learning, and customer), each with a number of objectives (Niven, 2002: 107). In turn each objective has a measure and a target set for it. In addition, managers are expected to come up with an initiative, i.e what measures they would take to achieve each objective. Thus, the scorecard helps promote growth; track performance; provide focus; create alignment to goals; create goal clarity to the workforce; and promote accountability (Gumbus and Lussier, 2006: 410; Kaplan and Norton, 2008a:64, 66; Niven, 2002: 107).

Table 2: A balanced Scorecard

	Objectives	Measures	Targets	Initiatives
Financial perspective, e.g 1. 2. 3				
Internal business perspective				
Innovation and learning perspective				
Customer perspective				

Source: Adapted from Kaplan, R. S. And Norton, D. P. (1996)'Using the balanced scorecard as a strategic management system', Harvard Business review.

As competitiveness within the business environment increases, companies have been forced to acknowledge that traditional financial measures of performance such as Return on Investment (ROI), sales growth, gross profit or net profit are not adequate to measure performance. Financial measures of performance need to be balanced with operational measures for managers to have a broader view of business performance. To deal with this challenge, the Balanced Scorecard was developed (Kaplan and Norton, 1992).

Despite criticism against financial measures of performance, this perspective still forms an important part of the balanced scorecards because firstly, it defines the financial results expected from an organizations strategy. Secondly, the measures chosen in this perspective serve as targets for other perspectives to base their objectives and

measures on; and determine whether the chosen measures in other perspectives lead to improved bottom-line results (Kaplan and Norton, 1996a: 47).

Different financial objectives and measures may be used depending on the life cycle stage of the enterprise and its products and services. More specifically, financial objectives in the growth stages may be emphasized by measures of sales growth; traditional financial measures such as operating income and gross margin; and cash flow respectively (Kaplan and Norton, 1992: 178; 1996a: 52; Niven, 2002: 119; Gumbus & Lussier, 2006: 412).

The Balanced Scorecard addresses the customer perspective by identifying objectives on market share; customer acquisition; customer retention; customer satisfaction; and customer profitability. To ascertain whether these objectives are being met, managers obtain feedback from customers through instruments such as surveys (Kaplan and Norton, 1992: 175-76).

As for the Internal-business-process perspective, the BSC addresses operations management processes; customer management processes; regulatory and social processes; and Innovation processes (Kaplan and Norton, 2006). See the BSC representation in figure 2-below.

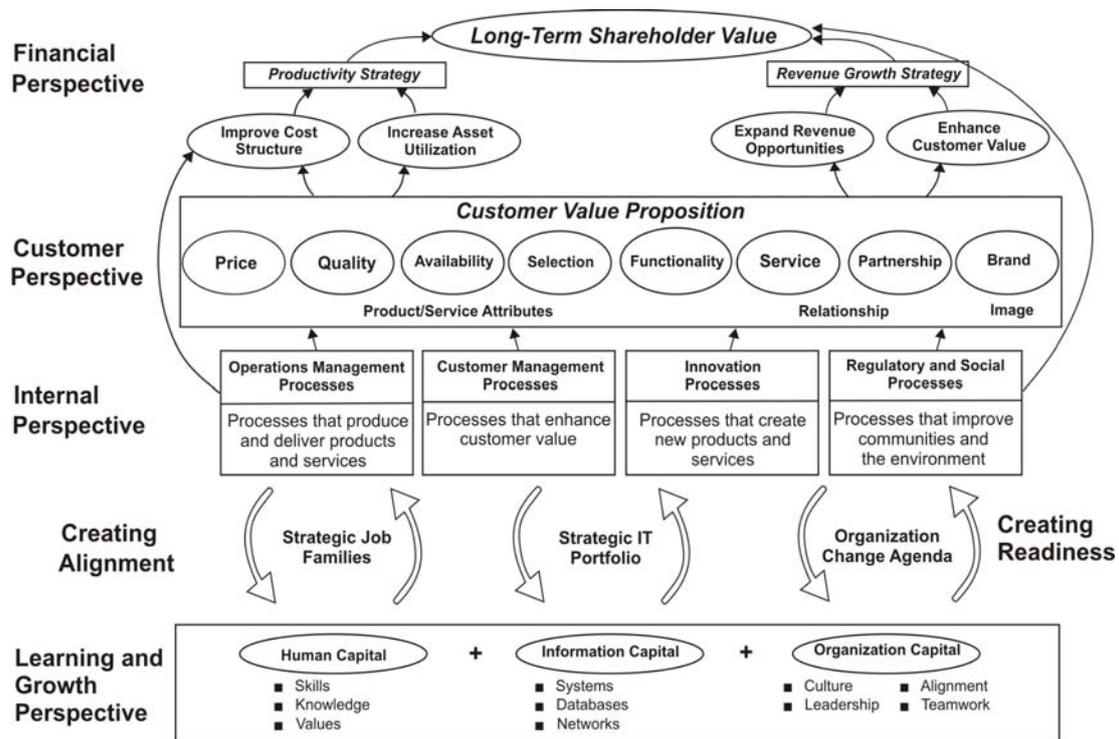


Figure 2 - Source: Adapted from Robert S. Kaplan and David P. Norton, *Strategy Maps*, 2004c:34.

3.1.4 Profitability analysis

Managers use profitability analysis in the economic evaluation of existing or proposed products or services (Morse, Davis and Hartgraves, 2003:84). Profitability analysis involves examining the relationships between revenues, costs and profits. Performing profitability analysis requires an understanding of the relationship between variable costs, fixed costs, unit selling price, and the output level. Thus, profitability analysis also known as cost-volume profit (CVP) analysis is a powerful tool for planning and decision making. It is a valuable tool in identifying the extent and magnitude of the economic trouble a company is facing and helping pinpoint the necessary solution. The applications of profitability analysis include:

- Setting the number of units that must be sold to break-even

- Deciding on level of fixed costs
- Setting prices for products and services
- Introducing a new product or service
- Replacing a product or service
- Deciding whether to make or buy a given product or service
- Determining the best product mix
- Performing strategic what - if analyses (or sensitivity analyses) by examining the impact of various price or cost levels on profit.

The CVP analysis aid managers make sound business decisions (Ojugo, 2009). The analysis also helps managers execute organisational strategy by providing an understanding of how changes in sales volume affect costs and profits. It also shows the risks in increasing fixed costs if volumes fall (Blocher, Stout and Cokins, 2010: 327).

Also, CVP analysis is important in using both life-cycle costing and target costing. In life-cycle costing, CVP analysis is used in the early stages of the product's cost life cycle to determine whether the product is likely to achieve the desired profitability. Similarly, CVP analysis can assist in target costing at these early stages by showing the effect on profit of alternative product designs that have different target costs.

3.1.5 Life- cycle costing

Although product life- cycle costing is thought of as a costing method, its primary purpose is cost management. It is used to identify and monitor the costs of a product throughout its life cycle. The life cycle consists of four phases: introduction, growth, maturity and decline (Dyson, 2010:460). These phases include (1) research and development; (2) product design (3) manufacturing, inspecting, packaging, and warehousing; (4) marketing, promotion, and distribution; and (5) sales and service.

Life cycle costing aid managers take decisions on new products or service; replacing a product or service; or deciding whether to outsource a product or service for the customers (Seal, 2010: 159).

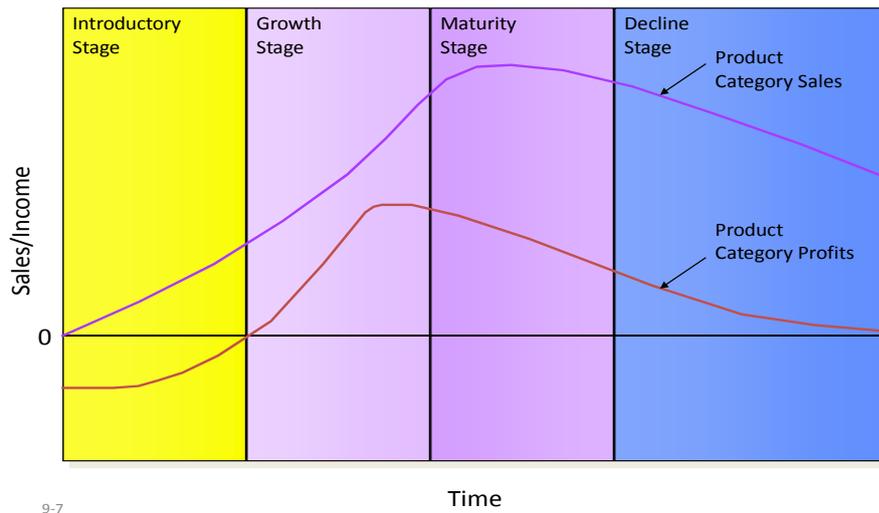


Figure 3: The Product Life Cycle

3.1.6 Target costing

Target costing is a management accounting technique to product pricing and cost management (Seal, 2010: 157). The technique is useful in recognition that many companies have less control over product price. The technique is employed in intensely competitive markets. Target costing determines the desired cost for a product on the basis of a given competitive price, such that the product will earn a desired profit. Cost is thus determined by price. The firm using target costing must often adopt strict cost reduction measures or redesign the product or production process to meet the market price and remain profitable.

Target costing forces firms to become more competitive. Target costing is a common strategic form of analysis in intensely competitive industries where small price

differences attract consumers to the lower-priced product (Seal, 2010: 157). Thus, target cost is worked backwards from the price. Target cost = target price (anticipated selling price) – desired profit. Once the target cost has been determined, the product /service is designed and the production processes linking marketing, design, production and procurement are reviewed to eliminate non-value adding activities so that the product/service can be made available for no more than the target cost (Mowen and Guan, 2009 : 671–674).

For example, XYZ products Ltd of South Africa is anxious to enter the electronic calculator market. Through market analysis, XYZ management believes that in order to be competitive in world markets, the electronic calculator that the company is developing cannot be priced at more than R 15. XYZ requires a minimum return of 12% on all investments. An investment of R 5,000,000 would be required to acquire the equipment needed to produce the 300,000 calculators that management believes can be sold each year at the R 15 per each calculator. What is the target cost of one calculator? The target cost for each calculator = $[(15 \times 300,000) - (12\% \times 5,000,000)] = [4,500,000 - 600,000] = 3,900,000 / 300,000 = R13$. The R 13 is expected to cover marketing, design, production and procurement expenses. Hence, to remain within the target cost, a decision has to be taken to eliminate all non-value adding activities. The aim of target costing is to choose a product and process that give an acceptable profit at a planned level of output.

3.1.7 Business intelligence (BI) and analytics

Firms gather business intelligence information to help increase the firm's competitiveness. But information by itself is not enough to fulfill this mission. The information needs to be interpreted in terms of the strategic and tactical objectives of the firm. As Davenport and Harris (2007), in their book *Competing on Analytics: The New Science of Winning* point out, the role of analytics is to drive managerial decisions and actions. Thus, various techniques are employed to present information for decision

making. These include real-time analytics, ad hoc queries, slice-and-dice and drill down to deal with exceptions and to find the components of a particular number or result, or to provide more detail that helps explain why results are what they are. Besides, dashboards (i.e charts and graphs) and scenario analysis are used to enable managers understand information for decision making. Management accounting information augments business intelligence in enhancing the competitiveness of an enterprise.

4. Organizational innovations, competitiveness and implications for management accounting techniques

In response to customer preferences, technological advances and global competition, organizations are searching for ways to deliver more cost effective, high quality services/products. Hence, a number of organisational innovations have been pursued to enhance organisational competitiveness. These include; Total Quality Management, Lean manufacturing (production), the theory of constraints, enterprise sustainability, enterprise risk management, Just-in-time, and Six Sigma. These innovations have important implications for management accounting (McWatters, Zimmerman and Morse, 2008:555).

4.1 Total Quality Management (TQM)

Total Quality Management (TQM) , also known as continuous quality improvement (CQI) encompasses both improving the tangible aspects of product quality and enhancing the efficiency of the organisation (lowering costs and increasing productivity) (Seyed-Hosseini, Bakhsha and Taleghani ,2009) . The key elements in CQI/TQM include continuous improvement, customer focus, structured processes, and organization- wide participation. CQI/TQM differs from the traditional quality assurance in many ways; among the most important is CQI/TQM's focus on understanding and improving underlying work processes and systems versus the traditional quality assurance emphasis on correcting after-the-fact errors of individuals.

TQM programmes require accounting systems to design and measure activities within processes aimed at cost reduction and quality improvement (Zimmerman, 2009:663). TQM has three dimensions, namely; employee empowerment, continuous organisational improvement and the creation of a new organisational culture . This is displayed below.

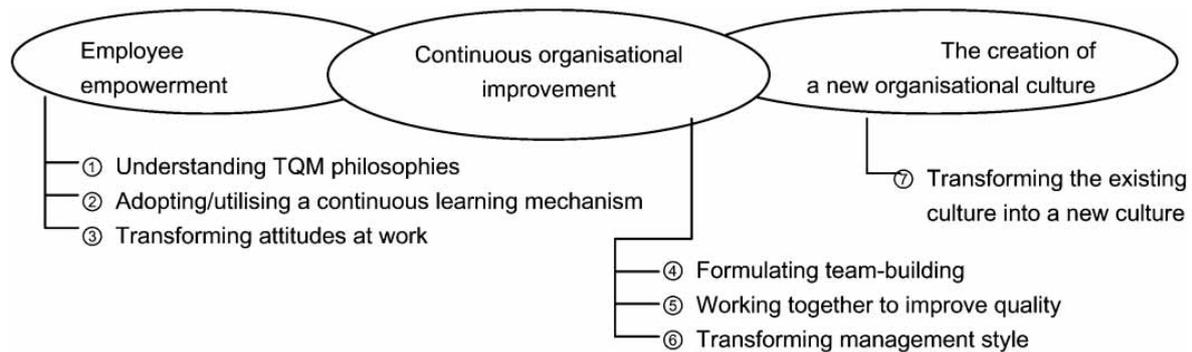


Figure 4: Total Quality Management (Adapted - Hur, 2009:850)

Employee empowerment refers to the ability of employees to meet the customer requirements and can be obtained by understanding, learning/internalising, and utilising the mechanism of the quality chain (Hur, 2009). On the other hand, continuous organisational improvement cannot be accomplished without employees that are empowered. Bergvall-Kåreborn, Bergquist and Klefsjö (2009) assert that TQM is a system that has a culture driven by values, and that is supported by methodologies, like process management, benchmarking or improved teams, which in turn must be supported by suitable concrete tools, for instance routines, diagrams and matrices (see figure 2)

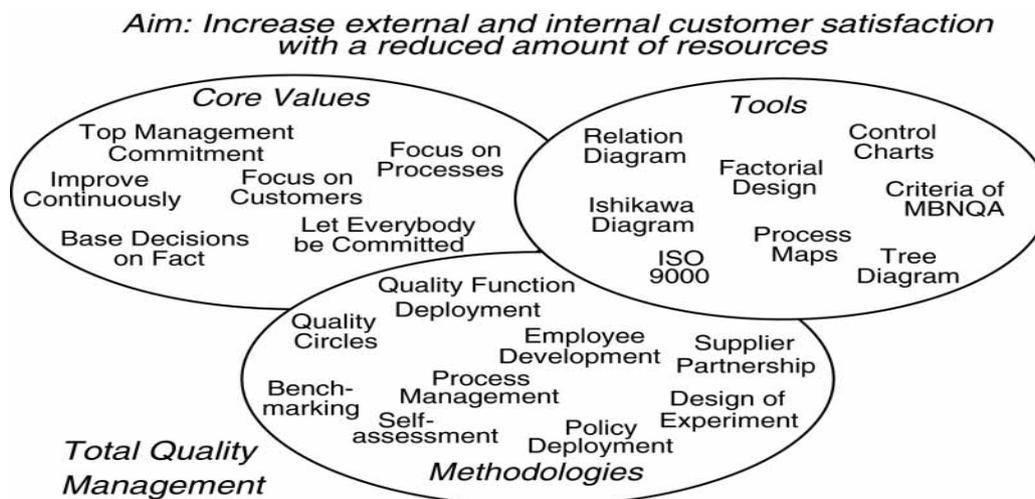


Figure 1: TQM - (Bergvall-Kåreborn *et al.*, 2009:1377).

Cost management is used to analyze the cost consequences of different design choices for TQM and to measure and report the many aspects of quality including, for example, production breakdowns and production defects, wasted labour or raw materials, the number of service calls, and the nature of complaints, warranty costs, and product recalls. Thus, TQM ensures:

- high quality products and services.
- Waste reduction and efficiency improvement.
- proper and efficient benchmarking of process, technology and products.

4.2 Lean Accounting

Lean accounting uses value streams to measure the financial benefits of a firm's progress in implementing lean manufacturing. Lean accounting places the firm's products and services into value streams, each of which is a group of related products or services. For example, a company manufacturing consumer electronics might have two groups of products (and two value streams) – digital cameras and video cameras – with several models in each group. Accounting for value streams can help the firm to

better understand the profitability of its process improvements and product groups, which leads to better decision making.

4.3 The Theory of Constraints (TOC)

A constraint is anything that prevents you from getting more of what you want. Since a constraint prevents you from getting more of what you want, the theory of constraints maintains that effectively managing the constraint is a key to success. Thus, firms should effectively improve on critical success factors that present themselves as constraints. This theory helps identify and eliminate bottlenecks in the production system. In the competitive global marketplace common to most industries, the ability to be faster than competitors is often a critical success factor. Many managers argue that the focus on speed in the TOC approach is crucial. They consider speed in product development, product delivery, and manufacturing to be paramount (Seal, 2010).

4.4 Enterprise Sustainability

Enterprise sustainability means the balancing of the organization's short- and long term goals in the dimensions of social performance, environmental and financial performance. It includes identifying and implementing ways to reduce cost and increase revenue as well as to maintain compliance with social and environmental regulations and expectations. This can be accomplished through technological innovation and new product development as well as common-sense measures to improve the social and environmental impacts of the company's operations.

4.5 Enterprise Risk Management

Enterprise risk management is a framework and process that organizations use to manage the risks that could negatively or positively affect the company's competitiveness and success. Risk is considered broadly to include (1) hazards such as fire or flood, (2) financial risks due to foreign currency fluctuations, commodity price

fluctuations, and changes in interest rates, (3) operating risk related to customers, products, or employees, and (4) strategic risk related top management decisions about the firms strategy and implementation thereof.

5. Conclusion

Increased global competition has forced firms to become more cost competitive. To this end, business managers have adopted various decision making models and methods. Among the methods are management accounting techniques. These techniques enhance organizational competitiveness through organizational reengineering, cost reduction, process improvement, and quality management, amongst other relevant applications. Also, a number of organisational innovations have been pursued to enhance organisational competitiveness. Lastly, various other techniques such as real-time analytics, dashboards (i.e charts and graphs) and scenario analysis are used to present information for decision making.

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