Strategy, Management and Accounting:

A New Zealand Case Study

by

Beverley R. Lord

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Abstract

Manufacturing has changed dramatically since the introduction of mechanised factories during the Industrial Revolution. The application of computers to factories has altered the proportions of human and machine hours. Relaxation of tariffs and trade barriers has increased markets to the size of the globe. In this new environment, businesses need to position themselves so they have competitive advantage.

Today's large, diversified, multi-national firms have evolved from the individual craftsmen that "manufactured" in the Middle Ages. Accounting for manufacturing enterprises evolved in tandem with the evolution of factories, being added to and changed as the need arose.

As business strategy becomes more important in the new environment facing manufacturers, so management accounting also needs to change to give managers the information they need. Some traditional management accounting techniques may be obsolete or misleading in the new environment. Management accounting may have to be extended to include techniques that have not been necessary in the past.

This thesis shows how one New Zealand firm, Cyclemakers Group (NZ) Ltd, has adapted its management accounting to give its managers the information they need for strategic positioning in global markets.
Acknowledgments

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PART A:

INTRODUCTION
Chapter 1: Introduction

I. Introduction

II. My "thesis"

Major changes in the organization and technology of a firm's operations may be making the accounting and control systems of corporations obsolete ... Yet these phenomena will go unobserved and unstudied by accounting researchers unless they undertake studies in actual organizations (Kaplan (1986a): 430).
I. Introduction

The last two decades have seen major changes in manufacturing. Smokestacks and labour intensive enterprises are diminishing. Humans are being replaced by computers and "high-tech" machinery. Long, repetitive production runs are being replaced by flexible manufacturing, with "production runs" as small as one unit. Have other systems within the factory changed as a result of manufacturing changes? Kaplan (1986a) believes that the way to find out is to go to individual enterprises and see.

The business environment has also changed. Widespread deregulation in many countries worldwide has increased the competitive environment. To be successful, businesses must not only compete in the domestic market; they must be globally competitive.

Due to these changes both within and without manufacturing, managers must decide on strategies that will enable their businesses to obtain competitive advantage in the global market.

II. My "thesis"

It is my thesis that traditional management accounting is not adequate for supporting and providing the information necessary for strategy formulation in the new environment facing manufacturers today. I believe traditional management accounting needs to be adapted and added to - producing what could be called "strategic management accounting" - in order to be useful in providing the information needed in carrying out strategies of the firm.
To assess the truth of this thesis, I will undertake a study of the literature on the subject (chapters 2-5) and also do a case study of a firm that has successfully pursued strategies supported by an amended management accounting system (chapters 6-9).
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I. Introduction

Robb (1981) defines management accounting as "a subset of accounting which has as its primary aim the reporting to management of information needed for decision making, planning and control" (45). Unlike external financial reports, management accounting is not subject to externally imposed regulations or audit. Therefore, each firm is free to develop its own management accounting methods and reports.

II. Roles of management accounting

There are three main ways in which management accounting can assist managers: (A) costing, (B) planning and control, and (C) providing information for decision-making. Any introductory management accounting textbook will cover each of these roles in detail. A brief outline of the key features of each role follows.

A. Costing

The costing or "score-keeping" role provides financial information for internal use by managers. This includes collecting and classifying costs, assigning costs to products (for example, by job-order costing or process costing), and allocating service costs and overheads that cannot be traced directly to products.

B. Planning and Control

Planning is an integral part of control. The main vehicle for planning and control in an organisation is the budget, which is usually worked out using standard costs. Actual results are then compared with the budget
as an indication of how well in control the business is. Budget performance may be used to direct attention toward problem areas or areas in which the business is doing well. Budgets may also be used to motivate employees and managers to achieve corporate goals. Budget performance is often used as a basis for performance appraisal and reward.

C. Decision-making

An economist, Clark (1923), was one of the first to suggest that managers require different cost figures depending on the decision with which they were faced. Management accounting students are taught how to use accounting information for decisions about problems such as product pricing, product mix, whether to make or buy a product, continuance of a product line, acceptance of special orders, whether to sell or process further, whether and when to invest in new plant and equipment, and whether or not to implement new management techniques. For each of these decisions, the management accountant must decide what information is relevant and useful.

Over recent years, the accountant's role has been extended to include providing information that is relevant to long-term, strategic decision-making. This information gathering and providing process has been called "strategic management accounting" or "strategic cost management". The various suggestions about what strategic management accounting comprises are covered in detail in chapter five.

The techniques currently taught in management accounting courses developed over several centuries, as the need for them arose. The rest
of this chapter traces the way that management accounting developed alongside developments in manufacturing, showing the factors that seem to have caused the development and acceptance of each technique.

III. History of management accounting

A. Cost Accounting

1. Artisans

In 1494 Luca Paciolo published the first textbook setting out the method of double-entry book-keeping "used by many merchants of the time both in Italy and in the Netherlands and Southern Germany" (Solomons (1968): 3). Solomons attributes the textbook's exclusive emphasis on buying and selling to the smallness of industrial enterprises at that time, manufacturing processes being largely in the hands of individual craftsmen (3).

However, as businesses expanded, the owners often "gave out materials to be worked on by artisans in their own homes" (Solomons (1968): 3). The owners were thus forced to start keeping records of the amount and value of materials given out and the amount paid to the artisans. There are examples of these early uses of accounting in industry dating back to the fourteenth century. At this time, direct materials and labour were the only significant costs of production.

According to Pollard (1968), before the Industrial Revolution there were three separate types of accounting. Stewards on estates kept a kind of "receipts and payments" account. Merchants used double-entry book-keeping. The third type of accounting was that used by "the immediate
predecessors of the factory-owners, the putting-out hosiers, clothiers, and others" (250). They kept a check on raw materials used, rent of equipment, and labour. At each stage the product had a market price, and there was also negligible fixed capital. This method of accounting had evolved without being "developed into a body of doctrine, taught and transmitted by qualified practitioners" (251).

2. The Industrial Revolution

With the Industrial Revolution, the home-based manufacturing system was replaced by factories with expensive machinery, introducing the problem of overheads, such as depreciation, repairs and maintenance of machinery. Pollard (1968) asserts that one of the main responses by large firms to the problems of management in the Industrial Revolution was the development of accounting for industry.

The stewardship system of accounting was deficient for the industrialist, as it could not provide "a check on his capital investments, and on technical and other innovation" (Pollard (1968): 248). The double-entry system used by merchants did not "relate profits to any fixed investment or 'capital' of a firm as a whole: their calculations showed the costs and returns from individual journeys, or individual commodities, and were designed to allow an appropriate division of profits among the shifting groups of associates for each separate venture" (Pollard (1968): 249). The accounting used by the putting-out craftsmen-owners could not be used for tracking of internal transfers when there was no market price at each stage.
Large industrialists drew from all three types of accounting, each firm progressing at its own speed (Pollard (1968): 252), and developing their own systems to meet their own particular needs. The main emphases were "bringing of records of industrial activity within the double-entry framework of bookkeeping and the devising of means of tracking internal transfers of goods from one process of manufacture to another" (Edwards and Newell (1991): 36).

3. France

In the first half of the nineteenth century, the French wrote the most advanced books about cost accounting, recognising problems that had arisen with the development of factories. The French writers dealt with questions of depreciation and maintenance of buildings and plant, pricing out of materials purchased at varying prices, and keeping perpetual inventory systems. They developed systems for both process and job order costing.

4. The United States

Parker (1986) considers that the USA was a pioneer in costing techniques, which developed along with the textile and steel industries and the railways. Writers such as Church (1910) developed and refined the idea of allocation of overheads, a problem that had risen in importance "as industry became more capital intensive" (Parker (1986): 80).

The "scientific management" school, often called "Taylorism" after one of its leaders, F.W. Taylor, formed around the turn of the century. Although
their initial focus was on efficiency of physical processes, the application of the principles to monetary efficiency led to the development of standard costing. There are isolated instances of standard costing being used prior to this time, for example, standard yields in agriculture in the thirteenth century, standard smelting costs at Keswick in the seventeenth century; and standards based on time and motion studies at Carron Co. in the eighteenth century (Edwards and Newell (1991): 48). However, standard costing was not widely adopted until the early part of the twentieth century.

Although there are references to budgets in the nineteenth century writings, the idea of using budgets for control purposes developed alongside standard costing in the first two decades of the twentieth century. According to Parker (1986), "the use of budgetary control grew rapidly in the USA and the UK from the 1920s onwards" (80).

After World War I, the development of new corporate structures, such as multi-divisional organisations, conglomerates and multi-national enterprises, raised new problems. Managers needed to evaluate divisional performance, often for divisions remote from head office. There was also the need to establish transfer prices between divisions in the same organisation. In the 1920s, Du Pont introduced return on investment (ROI) as a means of measuring "the commercial success of each operating unit and of the entire organization" (Johnson and Kaplan (1987): 11).
5. Great Britain

Even though the British were leaders in the Industrial Revolution, their accounting for factories lagged behind the French and the U.S. Solomons (1968) states that "there is plenty of evidence that even at the turn of the [twentieth] century anything that could be called a costing system was still to be found only exceptionally both in British and American industry: the typical situation was for a manufacturer to compute product costs on some rough and ready basis" (17).

Pollard (1968) concludes that until the twentieth century "accountancy in its wider sense was used only minimally to guide businessmen in their business decisions, and where it was so used the guidance was often unreliable" (285). He suggests that accounting was relatively unimportant at that time because selling prices were so much higher than total costs that the business would show a profit no matter what costing system was used.

Parker (1986) agrees with this view. He notes that the first adequate textbook of cost accounting for factories, Factory Accounts by Garcke and Fells, first published in 1887, did not appear until more than a century after the "factory system had been established in Britain" (79). By that time, "profit margins were declining and pricing was becoming more competitive" (80).

In his review of several Victorian treatises on management, Horn (1974) shows how most of the early books were mainly about the production process, with the emphasis gradually changing to advice on cost control, as epitomised by Garcke and Fells' textbook on Factory Accounts.
Edwards and Newell (1991), however, argue that although there were not many books on the subject of cost accounting it does not necessarily follow that there was "a corresponding lack of interest in costing on the part of businessmen" (35). There are several well documented cost accounting systems which were in existence before the nineteenth century, for example, Plantin's printery in the fourteenth century; the Medici family's woollen cloth manufactory in the sixteenth century; and Boulton and Watt's Soho works and Wedgwood's pottery works, both in the late eighteenth century. The fact that there are not more examples could be attributed to business records not having survived from this era.

Loft (1986) shows how the First World War provided the incentive for the adoption of cost accounting in Britain. To prevent profiteering in manufacturing of items for use in the war, the government enacted a law requiring businesses to prepare detailed costings of their goods, the government having powers to audit these internal cost accounts.

Chandler and Daems (1979) provide some other explanations for the slower acceptance of management and management accounting techniques in Britain and Europe. Many European firms were owned by families who retained a dominant position in management. Control of subordinates relied on "traditional values of respect and loyalty" (18), rather than accounting control systems. Because of "national differences in tariffs, languages and tastes" (19), mass marketing opportunities did not develop until after World War II. Therefore speed, efficiency, coordination and control of costs did not seem to be so urgent or important in Europe.
B. Management accounting

From World War II onward, the internal accountant's role began to broaden. As well as dealing with costing and budgeting issues (the first two roles of management accounting), more emphasis began to be placed on ways in which accounting information could assist in managerial decision-making. Gradually the name "cost accounting" was replaced by "management (or managerial) accounting".

Wilson and Chua (1988) suggest that another reason for the name change could have been the expansion in the number of government, quasi-government and service-oriented organisations, for example, advertising agencies, accounting firms and hospitals. Traditional cost concepts and costing techniques that had been developed for manufacturing enterprises had to be modified; and new forms of budgeting suited to service and non-commercial organisations were introduced (6-7).

IV. Conclusion

Management accounting has gradually developed its roles of costing, planning and control, and providing information for decision-making. Each technique has evolved out of pressures caused by changing manufacturing and business environments.

The next chapter shows changes that have taken place in the manufacturing environment over the last two decades. These changes may force management accounting to add to its techniques if it is to continue to be relevant for managers.
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Chapter 3: The modern manufacturing environment

I. Introduction

In the last 20 to 30 years, manufacturing has changed dramatically as the result of both external and internal influences. Management accounting, which was developed alongside manufacturing over the last two centuries, may now be irrelevant or even wrong when applied in this new manufacturing environment.

This chapter examines changes in manufacturing and their impact on management accounting. Chapter 4 examines one management solution to remaining competitive in a changed environment, strategic planning. Chapter 5 suggests the role of management accounting in strategic planning.

II. Changes in manufacturing

There have been three major influences on manufacturing in recent years: (A) computerisation, (B) the so-called "Japanese" management philosophy, and (C) globalisation of markets. Computerisation has resulted in changing proportions of labour and overheads. The "Japanese" management philosophy, which includes just-in-time purchasing and production, total quality management, and continuous improvement, has had several effects, including substantially decreasing inventories and putting an increased emphasis on measuring non-financial factors. Globalisation of markets has made ascertaining and meeting customer needs crucial to gaining competitive advantage.
A. Computerisation

Many manufacturing firms have introduced computerisation to some extent. This may only involve one process, for example, computer-assisted production planning systems such as materials requirements planning (MRP) or materials resource planning (MRPII). Even at this basic level, the information provided by MRP can result in minimised "inventory levels, production run disruptions, storage costs and extra expenses incurred in accepting rush orders" (Bromwich and Bhimani (1989): 20).

Computerisation may be more integral to the manufacturing process, for example computer aided design (CAD), computer aided manufacturing (CAM), flexible manufacturing systems (FMS) and computer integrated manufacturing (CIM). These systems can lead to reduced design and set-up time, enhanced product quality and flexibility, and greatly reduced direct labour, although entailing high capital cost initially.

Berliner and Brimson (1988) point out that the accelerating rate of change of technology is also affecting manufacturing, "dramatically shortening the life cycles of products and manufacturing facilities" and providing "superior performance for less cost" (21).

Jönsson and Grönlund (1988) note that the flexibility allowed by new technology makes it possible to "satisfy an ever-increasing demand [by the customer] for variation in the product line", because "the drastically shortened set-up times with new technology make it possible to produce in very small batches and still have mass production" (515).
Chapter 3: The modern manufacturing environment

As far as computerisation goes, New Zealand manufacturers are not being left behind by the rest of the world. From a 1989 survey of 21 New Zealand manufacturing companies, Northcott et al. (1991) noted with surprise that "manufacturing in New Zealand has undergone a quiet revolution because ... all [of the companies in the survey] appear to have made some progress in adapting to the modern manufacturing environment." Almost two-thirds of the sample used MRP, "half had flexible manufacturing systems, and a third had some robotics" (239).

Berliner and Brimson (1988) point out that computerisation results in changing cost-behaviour patterns. In earlier manufacturing methods, direct labour was a significant proportion of total product cost. Therefore, direct labour was carefully controlled and recorded.

The introduction of new technologies has resulted in direct labour becoming a much smaller proportion of total costs, with overheads and capital costs assuming much greater importance. The decreasing importance of direct labour cost has caused many writers¹ to question the continuing focus on recording, controlling and trying to reduce direct labour and using it as a basis for allocation of overheads.

B. The "Japanese" manufacturing philosophy

The following techniques have been labelled "Japanese" because they were first publicised in relation to the running of large Japanese corporations such as Toyota. However, some aspects of the overall

¹ For example, Kaplan (1986b), Cooper (1987), Berliner and Brimson (1988), Langfield-Smith and McBride (1989)
philosophy were already being practiced outside Japan, and all aspects of the philosophy have been successfully implemented in many Western companies. The main essence of the "Japanese" philosophy is that techniques should not be introduced in isolation - it is the complete philosophy which will result in successful companies.

Just-in-time (JIT) purchasing and production result in smaller raw materials and work-in-process inventories, decreasing the importance of inventory tracking and evaluation. For JIT to be successful, the relationship with suppliers must be one of cooperation, not confrontation. The change to JIT is often accompanied by a change in the layout of the factory, reducing unnecessary movements of materials. Employees may be multi-skilled, for which they will be better remunerated. Less specialised labour will result in less idle time. There should also be fewer errors and less carelessness attributable to boredom, and thus improved morale.

Total quality management focuses on continual improvement rather than just meeting acceptable standards. Howell and Soucy (1987c) note that companies are achieving better quality by building quality into the design of products and ensuring quality is achieved during manufacture, rather than "after-the-fact inspection" (26). Employees are encouraged to participate in controlling quality and to make suggestions for improvements. Firms will also reduce the number of suppliers, being prepared to pay higher prices for raw materials of guaranteed high quality. Any extra cost for quality raw materials will be offset by reduced costs of scrap and/or rework.
Northcott et al. (1991) remark that there is evidence of "concern with quality manufacturing" among the New Zealand manufacturers they surveyed. "Although only half the sample professed to having adopted a full JIT approach to manufacturing, two thirds had introduced frequent supplier deliveries and the use of standard containers. Nearly all respondents were attempting to achieve synchronised flow between stages of production." (239).

C. Global competition

Deregulation of industries in most Western countries has brought an increase in competition from countries all over the globe, especially Asian and third world countries with lower labour costs. Even companies not involved in importing or exporting themselves still face global competition, because they have to compete against imported products in the domestic market. Many companies have found that to remain competitive they need to differentiate their products on the basis of such things as quality and flexibility, yet without excessive extra cost.

Northcott et al. (1991) found that nearly all of the New Zealand companies surveyed showed an implied "concern with adaptability and willingness to respond to markets rather than a preoccupation with long 'manufacturing efficient' production runs" (239).

Faced with much larger markets, manufacturers may need to adopt target pricing. This has been practiced successfully by several Japanese firms, as documented by Hiromoto (1988). A target price for a product is assessed by market analysis, regardless of the cost of making the product. The target cost is determined by subtracting the desired profit
margin. Driving the product cost down to the target cost is then a co-operative effort between product designers, purchasing specialists, manufacturing and process people and the accountants.

Parker (1969) shows that this idea is not new or necessarily Japanese. He cites the example of Gaines, who wrote in 1905 that prices are ordinarily determined more by the market than by what a manufacturer wants to get (Parker (1969): 25).

III. Management accounting in the modern manufacturing environment

Traditional management accounting has been variously described as inappropriate (Kaplan (1984b): 101), too unsophisticated (Finnie (1986): 219), obsolete (Neumann and Jaouen (1986): 132), inhibiting (McNair et al. (1988): xviii), or simply wrong (Kaplan (1988): 40) for the new manufacturing environment. Several areas in which traditional management accounting is deficient or wrong are detailed below.

A major proportion of traditional management accounting is budget oriented: variance analysis compares budgeted figures with actual, and often performance measurement and reward is based on achievement of budgets.

However, the technique of standard costing is based on "an assumption of long production runs of a standard product, with unchanging characteristics and specifications" (Kaplan (1983): 688). Therefore, standard costing is not appropriate in an environment of flexibility, where a production run may consist of one, unique unit. "Monthly cost
variances may provide little useful information under these types of manufacturing conditions" (Langfield-Smith and McBride (1989): 36).

Standard costing and variance analysis may have dysfunctional results in a "Japanese" management environment. For example, highlighting the materials price variance may encourage acquisition of lower quality materials or large lot sizes, violating the management principles of total quality control and continual improvement in the one case and zero inventories in the other. Likewise, emphasis on the labour efficiency variance may discourage idleness, resulting in production for inventories rather than demand.

Howell and Soucy (1987b) predict that "we will see a de-emphasis on standard costs and particularly variance analysis in the new factory and much greater emphasis on actual costs ... how they are changing ... different layers of cost variability, and the individual product." (48). They urge management accountants to "seize the opportunity and wean themselves from the classical budget versus actual and variance methodology. They should move toward an actual trend and continual improvement in the reporting orientation" (Howell and Soucy (1988): 29).

Traditional management accounting has emphasised measuring and controlling direct labour. However, in an environment in which direct labour is shrinking to a negligible proportion of total costs, management accounting needs to focus on other costs and causes of cost.

Berliner and Brimson (1988) advocate identifying and eliminating non-value-adding activities, those activities "that can be eliminated with no deterioration of product attributes (performance, function, quality,
perceived value)" (3), for example, inventory carrying, storage, expediting, production control, inspection time, move time, wait time, down time, set-ups, bottlenecks, insufficient orders, idle shifts (3-4). They also propose only measuring and controlling "financial and operational performance information about significant activities of the business" (6) constituting "the bulk of the total work within [the] organization" (9).

Langfield-Smith and McBride (1989) suggest that traditional "management accounting techniques fail to provide accurate product costs ... because of the use of simplistic and arbitrary measures to allocate costs to products" (34). Berliner and Brimson (1988) believe that "the key to improved decision making for pricing, product-line profitability analysis, make/buy decisions, and cost reduction" is to improve tracing of costs to products "by determining the cause-and-effect relations between activities and ... product costing" (10).

One of the traditional reasons for product costing is the valuation of inventory. In a JIT environment, where inventory is reduced to negligible amounts, this reason for product costing becomes obsolete.

Another criticism of management accounting involves the traditional financial reports, which are produced at pre-determined, discrete, regular periods. The time taken to prepare reports such as annual accounts often makes the information too out of date to be useful for decision-making. Also, the periodicity may cause a short-term focus. Langfield-Smith and McBride (1989) assert that the "linking of remuneration and salary bonuses to accounting data" has led to the increased importance of "achieving annual profit targets" and an emphasis on "short-term
performance in preference to performance over the entire business cycle" (36).

Howell and Soucy (1988) state that "two principal flaws in current management reporting are: reports produced often are irrelevant to the needs of management, and half of all reports are either not used or are repetitive in content" (22). These flaws can be exacerbated by the computerisation of accounting systems. As well as often producing too much information, Kaplan (1986b) suggests that "complex and not easily modified computerized accounting systems provide a barrier to innovative and adaptive changes in the firm's managerial accounting system" (195).

Berliner and Brimson (1988) note that, although "cost accounting should assist the manufacturing manager in making difficult decisions in this dynamic environment ... most cost accounting systems are not providing the information necessary" (21). Traditional management accounting does not include measurement of non-financial items such as quality, reliability, lead times, reduced inventory levels, flexibility, innovation and customer satisfaction.

Langfield-Smith and McBride (1989) blame "the growth in organisational size and complexity" for the reliance of top management on financial data, as it is "more difficult for a centralised management to control distant units without an increasing reliance on accounting-based information" (35). Nevertheless, they note that "radical changes in the competitive global environment and advances in technologies" mean that "a focus principally on cost minimisation may not provide sufficient flexibility and assistance to allow organisations to remain competitive."
Chapter 3: The modern manufacturing environment

Traditional cost measurements may not be adequate in measuring the performance of new process technologies, and computer-assisted manufacturing systems" (36).

Several empirical studies reviewed by Bromwich and Bhimani (1989) show that a "greater stress is being put on quality, delivery performance, customer satisfaction, etc., [making] the development of measures to account for such factors ... desirable. In addition, these empirical studies point to the need for management accounting to cultivate an understanding of marketing problems and processes, as well as to become increasingly integrated with the strategic components of organisational activities" (85-86).

One response to these criticisms of traditional management accounting is examined in detail in chapter five, and is shown working in practice in the case study of Cyclemakers.
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I. Introduction

In most organisations, management has decisions to make daily. Frequently these are *operational* decisions, which aim for maximum *efficiency*. However, some decisions concern the long-run strategy of the organisation. These decisions affect the maximum *effectiveness* of the organisation. As Green and Lovelock (1983) point out, it is "important that sufficient attention is given to an organisation's effectiveness as long run success is probably more dependent on the major 'effectiveness' decisions" (1).

With the changes taking place in manufacturing and competitive environments, business strategy formation has become more important. This chapter will look at the main schools of thought about business strategy and strategic management.

II. Business Strategy

A. Strategy

The term "strategy" has been borrowed from the military. The Concise Oxford Dictionary defines strategy as the "art of so moving or disposing troops or ships or aircraft as to impose upon the enemy the place and time and conditions for fighting preferred by oneself." Using the military analogy, Tricker (1989) defines business strategy as "the longer-term deliberations and decisions which determine the direction the enterprise is to take, to achieve its objectives in the light of expectations about the activities of others in the field" (26). Accordingly, business strategy is not simply long term planning. Strategic planning must also consider the
plans of competitors, the main objective being to place and keep the firm in a position of competitive advantage.

Another military term related to strategy is "tactics". However, strategy implies "longer-term thinking, broader horizons and ... higher levels of abstraction" (Tricker (1989): 26). Strategy is a plan of how to position the firm so it has a competitive advantage; tactics are the actions taken to achieve the strategic plan.

B. Development of Theory of Business Strategy

When businesses are small, with the founder in control, strategy is often not formalised; the strategy is known to only one person, usually the founder, and is not written down or shared with others. After this entrepreneurial stage, however, the larger number of people involved makes it necessary to communicate the firm's strategy to others in the business.

Gluck et al. (1980) report four phases that all firms studied went through in developing their planning processes. Bowman (1990) draws a parallel between developments in the American economy and the four phases, implying that the firms studied by Gluck et al. went through the phases simultaneously with changes in emphasis in the economy.

The first phase in developing and implementing an effective business strategy is basic financial planning, primarily budgeting. The emphasis on meeting the budget has two drawbacks: it omits variables external to the firm, and it has too short a time frame. Bowman (1990) links this phase with the development and emphasis on budgeting in the 1940s and 1950s.
Chapter 4: Business Strategy

The second phase is the introduction of long range planning, typically with three to five year time frames. This improves the effectiveness of strategic decision making, because it "forces management to confront the long-term implications of decisions" (Gluck et al. (1980):294). Bowman (1990) links this phase with the 1960s.

However, in today's changing business environment, predictions and plans for five years ahead become less reliable and less useful for strategic decision making. Furthermore, such long term plans include no information about what the customer expects, and provide no details about competitors.

In this phase, planners may use sophisticated forecasting models, such as trend and regression analysis, and computer simulation. They may also use portfolio analysis, which depicts product attractiveness in matrix form. In this phase, though, "portfolio analysis tends to be static and focused on current capabilities, rather than on the search for options" (Gluck et al. (1980):295). Strategies are determined based upon the present competitive position, rather than trying to change to obtain competitive advantage.

Despite its widespread use, especially in the 1960s and 1970s, Tricker (1989) notes some limitations to the portfolio analysis approach. As the matrix is only a model, it had to simplify the real strategic situation. Many of the variables omitted in the simplification process were vital to the strategic decision making process. These included "the rate of technological change, new relationships in global markets and the forces of competition, ... fundamental differences between different types
of industry ... [and] whether the industry faced future growth or was in decline" (28).

Phase three, externally oriented planning, looks outside the firm. Bowman (1990) notes that the focus in this phase, which took place in the economic stagnation of the 1970s, was on the firm in its industry. An economic orientation was taken, in which external "actors were considered adversaries who tended to drive profits toward zero" (13).

Following comparison of the firm's products with those of its competitors, planners may suggest several ways of achieving competitive advantage. Due to the number of issues raised and alternatives offered, planners and managers lower down in the organisation may make choices without top-level participation (Gluck et al. (1980):297).

Phase four is strategic management, which "joins strategic planning and management in a single process" (Gluck et al. (1980):297). Strategic management is characterised by links between strategic planning and operational decision-making. To achieve this, three mechanisms are necessary. Firstly, there must be planning at different levels of the business, cutting across organisational boundaries. For example, there could be planning at product, market, business unit, shared resources, shared concerns, and corporate levels. Secondly, the planning process should stimulate entrepreneurial thinking, emphasising flexibility and creativity. Planning will take place when needed, not necessarily annually. Thirdly, managers' commitment to the corporate strategy can be reinforced by teamwork, commitment to making things happen, open communication and a shared belief that ambitious goals can be achieved.
Bowman (1990) sees the influence of sociology in this 1980s phase of global competitiveness. Whereas the economic orientation saw competitive forces as enemies, the sociological orientation sees the possibility of partnership with suppliers, competitors and customers, with benefit to all.

C. Competitive forces

Using the association between strategy and war, managers in phase three identified competitive forces as the "enemy". These external forces are: the bargaining power of suppliers and buyers, the threat of substitute products or services, the threat of new entrants to the industry, and rivalry among existing firms in the industry. These forces influence the prices, costs, and investment of firms in an industry, and hence determine their profitability. The balance of the competitive forces may be influenced to some degree by the strategic decisions of the firm.

1. Bargaining Power of Suppliers and Buyers

The firm cannot achieve competitive advantage if the suppliers of their raw materials or components are in a strong position. A supplier has bargaining power if his product is differentiated. To achieve competitive advantage in this situation, the buying firm would need to make structural alterations, such as integrating backwards, or making themselves the major purchaser of the product. Buyers are in a strong position when they can dictate price. To overcome buyer power, the firm needs to differentiate its product or achieve lower costs than competitors.
2. **Threat of Substitute Products or Services**

Substitute products or services effectively place a ceiling on prices. Porter (1979) suggested upgrading the quality of the product or differentiating it somehow in order to maintain earnings and growth (142).

3. **Threat of new entrants**

New entrants to an industry will cause a drop in market share for those firms already in the industry. To combat new entrants, companies need to focus on erecting, maintaining or raising entry barriers. Barriers to new entrants include economies of scale, product differentiation, high initial capital requirements, access to distribution channels, and government regulations to be met (e.g. licensing).

4. **Rivalry among Existing Firms**

Rivalry within an industry increases as the number of competitors increases, as competitors become more equal in size, as overall industry growth slows, as products in the industry become less differentiated, as firms become more diverse, and where there is excess capacity in the industry (Green & Lovelock (1983): 50-52).

5. **Strategic Benefits of Competitors**

Porter (1985) points out that there are positive as well as negative aspects to competition. Instead of viewing competitors only as "enemies", management needs to consider the benefits of competitors.

Competitors can help to increase competitive advantage by absorbing demand fluctuations, enhancing the ability to differentiate ("by serving as
a standard of comparison" (Porter (1985): 203)), and serving unattractive segments. Also, the very existence of competitors can increase motivation.

Competitors can improve current industry structure by increasing industry demand, providing a second or third source of important inputs (mitigating the risk of supply disruptions), and reinforcing desirable elements of industry structure.

By sharing the costs of market development, competitors can aid market development. By providing an alternate source, competitors reduce buyers' risk of not being able to upgrade or find replacements, parts or service. Competitors can also aid market development by promoting the image of the industry.

Another strategic benefit of competitors is that their existence can help deter entry by increasing the likelihood and intensity of retaliation, blocking logical entry avenues, and crowding distribution channels.

6. Forces causing change

Green and Lovelock (1983) classify forces driving industries to change as:

(a) Long run changes in demand patterns because of demographic changes, lifestyle trends, penetration of the customer group, substitution, or changes in complimentary products.

(b) Long term learning changes, including buyer learning, increased technological knowledge, better competitor knowledge, and the "learning curve".
(c) Increasing size of market and individual firms

(d) Innovation

(e) Changes in input costs such as changes in the cost of capital, transport, labour, materials, etc.

(f) Changes in adjacent industries

(g) Government and social influences including regulation of new entrants, environmental control, wage setting, fiscal policy, tariff policy, pricing policy, import control, etc.

(h) Entry of established firms from other fields (Green and Lovelock (1983): 60-64)

These changes, which affect the structure of firms in an industry, are the motivation for the development of new strategies.

III. Strategic planning

Strategic planning is "the process by which a manager looks to the future and discovers alternative courses of action open to him. ... It seeks to look at the relationships which exist between the organisation, its objectives and its environment, then change those relationships where they can be improved" (Green & Lovelock (1983): 2). Some writers (for example, Bhattacharya (1988a)) suggest that in strategic planning all possible or likely outcomes should be considered, and a plan of action be developed for each possible outcome.
Pogue (1990a, b, c, d) summarises strategic planning under five main steps: (1) setting the corporate objective, (2) determining the present position, (3) deciding on a strategy or strategies for moving from the present position to a position of achievement of the corporate objective, (4) preparing and implementing the strategic plan, and (5) monitoring and updating the strategic plan.

The following section will examine what various authors have written on each of these steps.

A. Setting the corporate objective

Many writers\(^1\) hold that the corporate objective must be clearly stated, capable of measurement, and attainable with effort. Johnson and Scholes (1984) argue that generalised objectives may be just as helpful as measurable, specific objectives. For example, the "mission", or overall central vision for the firm, may be stated only in general terms, yet "may be a very important influence on strategy: it may concentrate the manager's perception of his operation on the needs of his customers and the utility of his service, for example, and at the same time set the boundaries within which he sees the business developing" (159-160). Johnson and Scholes (1984) note that some objectives, although important, may be difficult to quantify. They also point out that many successful companies do not have explicit objectives. However, Quinn (1980) found that specific objectives are required at times of crisis or strategic transitions.

\(^1\) For example, Ansoff (1965): 44; Pogue (1990a): 46
The corporate objective may encompass any or all of financial, marketing and product aims. For example, the objective may be to achieve a certain return on capital, to increase market share to a certain amount within a certain time frame, to establish a new market, to develop and market a new product, or to diversify horizontally or vertically.

B. Determining the present position

Many writers refer to this stage of strategic planning as "SWOT" analysis, that is, analysing the Strengths and Weaknesses of the firm, and the Opportunities and Threats that the firm faces. Pogue (1990) divides this step into two parts: examining the position of the firm (position audit) and examining the position of competitors (environmental audit).

1. Position audit

The position audit is an assessment of the internal strengths and weaknesses of the company. The firm may consider strengths and weaknesses in areas such as factory space and layout, machinery, manpower, products, marketing, materials, systems and finance.

2. Environmental audit

The environmental audit identifies opportunities and threats, which primarily come from outside the firm. These opportunities and threats may have technological, economic, social, political or legislative origins, and include the competitive forces examined above.

Simmonds (1981, 1983) and Bhattacharya (1988b) have pointed out the importance of trying to determine what competitors are able and likely to
do in response to the firm's strategic decisions, and in response to changes in the environment.

This assessment of competitors should include the goals, perceptions and capabilities of competitors. This information may be obtained through public, formal sources, such as published reports and the business press, or through informal channels, such as the firm's sales force, its customers, its suppliers.

C. Defining strategy

Strategy can be viewed as building defenses against the competitive forces or as finding positions in the industry where the forces are weakest. ... The key to growth - even survival - is to stake out a position that is less vulnerable to attack from head-to-head opponents, whether established or new, and less vulnerable to erosion from the direction of buyers, suppliers, and substitute goods. Establishing such a position can take many forms - solidifying relationships with favourable customers, differentiating the product either substantively or psychologically through marketing, integrating forward or backward, establishing technological leadership. (Porter (1979): 143, 145)

The strategies selected should move the company from its present position to a position from which it can achieve the corporate objective, assuming that the position audit reveals that the firm is not currently in that position.

Porter (1979, 1980, 1985) details two specific ways in which managers can position their firms so they have a strategic advantage over their competitors: firms need to either differentiate their product(s) or achieve a position of cost leadership.
To differentiate its product, the firm must provide something unique that is of value to the purchaser, for example, better quality, or features that are not included in the competitors' products. Competitive advantage can then be attained by being able to ask a higher price, by being able to sell more at the given price, or by increased customer loyalty. However, superior performance can only be achieved if costs are kept as low as possible, especially the costs of differentiation.

Cost leadership involves not just lowering costs, but having costs lower than all competitors.

A firm can employ either cost leadership or differentiation strategies targeting the entire market, or targeting a segment of the market. The market may be segmented by industry or by geographical region. "Serving only a particular industry segment may allow a firm to tailor its value chain to that segment and result in lower costs or differentiation in serving that segment compared to competitors. Widening or narrowing the geographic markets served can also affect competitive advantage" (Porter (1985): 34).

D. Preparing and implementing the strategic plan

The strategic plan specifies the details of how to implement the strategies for achieving the corporate objectives. The plan will specify the availability and timing of resources required.
1. Differentiating the product

Porter (1985) lists and expands on several routes to differentiation. These include communicating to the buyer why the product has higher value, exploiting all sources of differentiation that are not costly, minimising the cost of differentiation by controlling cost drivers, emphasising forms of differentiation where the firm has a sustainable cost advantage in differentiating, reducing cost in activities that do not affect buyer value, and being unique in entirely new ways.

Uniqueness may arise out of policy choices. Designers may include features in a product that other similar products do not have, which affect product performance or appearance. They may differentiate their product on the basis of high quality raw materials inputs. The firm may choose to offer a unique service, for example, speed and consistency of deliveries; or after-sales service. The technology employed in performing an activity, the quality of inputs procured for an activity, or the skill and experience level of personnel employed in an activity may influence the unique nature of the resulting product. Marketing and sales activities may also be a source of uniqueness, for example, by selective distribution through well-chosen outlet channels.

*The "value chain" for any firm in any business is the linked set of value-creating activities all the way from basic raw material sources for component suppliers through to the ultimate end-use product delivered into the final consumers' hands.* (Shank (1989): 50)

Uniqueness may also arise out of exploitation of linkages in the value chain, whether within the firm or external to it. For example, location or scale of operations may differentiate a product or firm; or "a good
relationship with its union may allow a firm to establish unique job definitions for employees" (Porter (1985): 127).

2. Reducing costs

Reducing costs is important no matter which strategy is chosen. Firms involved in product differentiation will want to reduce costs to maximise their profits; cost leaders want to reduce costs to a level below all their competitors. Cost can be reduced by exploiting linkages in the value chain, and by reducing activities that cause costs without increasing value.

Costs can be reduced if linkages are found between activities in the value chain. For example, "explicit attention to post-purchase costs by the customer can lead to more effective market segmentation and product positioning. Or, designing a product to reduce post-purchase costs of the customer can be a major weapon in capturing competitive advantage" (Shank (1989): 52).

The Cylemakers case study provides several examples of the successful exploitation of internal and external linkages, some to enhance differentiation, others to reduce costs. These are analysed in detail in chapter nine.

Another way to gain competitive advantage is to reduce costs of activities in the value chain, especially those activities that add little value. Porter (1985) defines structural causes of the cost of activities as cost drivers. He cites ten major cost drivers: "economies of scale, learning, the pattern of capacity utilization, linkages, interrelationships, integration, timing, discretionary policies, location, and institutional factors" (70).
Analysing the cost drivers for each activity enables the firm to understand and change its relative cost position.

Differentiation usually involves a cost, which must be considered when deciding whether or not to differentiate. Not only is there the initial cost of differentiation, but there may also be a cost to sustaining differentiation. The differentiator may ignore or minimise the importance of the cost of differentiation, because of having chosen differentiation in apposition to cost leadership. However, Porter (1985) emphasises that "cost is also of vital importance to differentiation strategies because a differentiator must maintain cost proximity to competitors. Unless the resulting price premium exceeds the cost of differentiating, a differentiator will fail to achieve superior performance" (62).

The cost of differentiation will differ depending on the part of the value chain at which differentiation is achieved:

Differentiation that results from superior coordination of linked value activities may not add much cost, for example, nor may better product performance that results from close parts tolerances achieved through an automated machining center. ... Similarly, differentiating through having more product features is likely to be more costly than differentiating through having different but more desired features. (Porter (1985): 128)

E. Monitoring and updating the strategic plan

"The internal and external environments will change during the implementation time period" (Pogue (1990b): 49). Management must be aware of any changes which may prevent achievement of the strategic objective. Therefore there must be some system for collection and
analysis of information about the environment, and for updating the strategic plan if necessary.

**IV. The process of strategy formation**

Some writers assert that the concept of strategic planning and positioning only covers part of business strategy. Strategies may be deliberate, that is, achieved as planned. However, in many cases strategies emerge from interaction between management, employees, and the environment. Accordingly, in some cases the emergent strategy may differ from the strategy originally planned by management.

Mintzberg (1978) was one of the first to point out that the strategic planning literature ignored other types of strategy formation. Some strategies do arise from strategic planning. This is achieved in purposeful organisations with highly ordered, neatly integrated processes. Planned strategies may also be achieved in an entrepreneurial firm, where a powerful leader makes bold, risky decisions to implement his or her vision.

However, some organisations may consist of many decision makers with conflicting goals. As they bargain among themselves they may produce incremental, disjointed decisions. Strategies will form out of this adaptive process.

Mintzberg made a distinction between strategy formulation and formation. He defined strategy formulation as the long-range planning by leaders of organisations. Strategy formation, on the other hand, he defined as the result of interplay between the environment, the organisational operating
system and the organisation's leadership. The environment is changing continuously but irregularly; the organisational operating system seeks stability; and the leadership mediates between the other two, trying to achieve both organisational stability and the ability to adapt to change.

Mintzberg (1978) defined the strategies that formed, called "the realised strategies", as "a pattern in a stream of decisions." He considered a strategy to have formed "when a sequence of decisions in some area exhibits a consistency over time" (935).

He made a distinction between deliberate strategies and emergent strategies. Perfectly deliberate strategies arise out of precise intentions, common to virtually all the actors in the organisation, which have been realised exactly as intended. The deliberate strategy is only possible when the external environment has no influence over the organisation. A perfectly emergent strategy is a pattern over a period of time without any express or deliberate intention by the organisation to form the same. An emergent strategy can result where the external environmental imposes patterns of action. Although purely deliberate and purely emergent strategies are unlikely to exist, the reality is that most strategies fall somewhere on a continuum between the two extremes.

Dent (1990) continues the attack on the strategic planning/positioning school, labelling it normative. Dent criticises the overemphasis on "the volitional content of strategy, as if appealing to its militaristic origins" (21). He also criticises the assumption that "decisions are supposed to emerge through ordered, sequential procedures in a linear manner" (13), noting that "it fails to capture the emergent process through which organizations' strategies take shape" (14). He supports his argument by
quoting several behavioural and organisational theories of choice which are not consistent with the normative strategic framework.

Dermer's (1990) criticisms are similar to those of Dent. He labels the strategic planning/positioning school "teleological", that is, "predicated on the assumption that organizations are purposeful cohesive systems and that issues and support are controlled by management" (68). Under the teleological view, the success of the system is measured by managerial effectiveness in coping with external events.

Dermer (1990) advocates consideration of the ecological viewpoint as well as the teleological. The ecological viewpoint starts from the assumption that in any organisation there are several stakeholders all trying to satisfy themselves. Each stakeholder will present his/her point of view, supported with relevant data, and the resulting "emergent" strategy will depend on the strength of each stakeholder's case. That is, strategy is not always planned; it often just happens. Emergent strategies arise from decisions on separate issues dealt with singly; the pattern that emerges can only be seen in retrospect.

Peters (1987), Peters and Waterman (1982), and Peters and Austin (1985) all criticise the strategic planning emphasis on strategies rather than on people. People are involved in every step of the value chain, from suppliers, through employers and employees, to the customer and end-user. In situations where people find themselves unable to work together for an agreed common purpose or strategy, the "deliberate strategy" may fail. New, unplanned, unforeseen strategies may then emerge. Peters and his co-authors try to restore a balance by
emphasising the human elements in running a business: "managing by wandering around", care of customers, and constant innovation.

V. Summary

The strategic planning school can be summarised under Pogue's five steps: (1) setting the corporate objective, (2) determining the present position, (3) deciding on strategies, (4) preparing and implementing the strategic plan, and (5) monitoring and updating the strategic plan.

The strategic process school questions the assumption that managers can control outcomes of strategic planning, the foundation of strategic planning. They argue that there is more to strategy formation than just setting intended strategies. The strategies that are realised may not be those that were intended; they may have emerged from interaction between managers and other stakeholders in a business.

The following chapter will examine the development of strategic management accounting, which suggests ways in which accounting information can be used in the strategy formulation and formation process.
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Chapter 5: Strategic management accounting

I. Introduction

The previous chapter outlined the key literature on strategic management. In response to the interest in business strategy, accounting academics and practitioners are now considering the changes to accounting systems that are necessary if accounting is to have a role in the strategic decision-making process.

Management accounting evolved from earlier cost accounting as the focus of management shifted from product costing to broader management issues. In a similar manner, as the focus of management shifts from internal issues to consideration of positioning within the external environment, a new form of management accounting is emerging: strategic management accounting.

This chapter will examine shortcomings in traditional management accounting when applied to strategic management. The chapter will also consider suggestions which transform management accounting into strategic management accounting. The content of strategic management accounting depends on the view of business strategy espoused, whether strategic positioning or strategic process.

II. Shortcomings of traditional management accounting

As the emphasis on strategic management has become apparent, accounting academics are developing concerns about the role of accounting in strategic management. Simmonds (1981) was one of the first to suggest a role for accounting: "an on-going measurement of
changes in ... strategic position" (26). Tricker (1989) likens the relationship between business strategy and management accounting to the relationship between military strategy and military intelligence. Management accountants can assess the strategic impact of internal information and collect information about the position of competitors, "synthesising the resultant information and making it available to the strategic process" (28). However, traditional management accounting appears to be deficient in that the information it provides is not sufficient for management to make strategic decisions.

Simmonds (1981) criticises the emphasis of conventional accounting on period profit, which focuses attention on internal efficiency for a single time period. From a strategic point of view, profit should be seen in the context of the firm’s competitive position over time.

Allen (1985) and Wilson (1990) point out that orthodox financial reports have the opposite orientation to that needed for evaluating and measuring strategic issues. Orthodox financial accounts are backward and inward looking, based on costs and the concept of capital maintenance, and related to short-term discrete time periods. On the other hand, information for strategic decision-making must be forward and outward looking, being concerned with values and investments and cash flows over the longer-term continuum (Allen (1985): 25). Traditional management accounting systems tend to be "reactive and to deal in a programmed way with one-off decisions. By contrast, a strategic approach needs to be proactive and designed to deal in an unprogrammed way with each phase of strategic decision-making" (Wilson (1990): 42).
Taylor and Graham (1992), quoting the results of a KPMG Management Consultants' survey, show that information traditionally supplied to senior executives limits them to a narrow view of the business. It does not give sufficient information on non-financial and external factors crucial to strategic planning and control.

Dimnik and Kudar (1989) warn that managers should not use accounting numbers to drive decisions, as this fosters concerns about accuracy of the numbers used. Instead, accounting numbers should be used to guide decisions, with care being taken that attitudes and behaviours congruent with organisational goals are promoted.


Japanese companies seem to use accounting systems more to motivate employees to act in accordance with long-term manufacturing strategies than to provide senior management with precise data on costs, variances, and profits. Accounting plays more of an "influencing" role than an "informing" role. (Hiromoto (1988): 22)
III. Development of strategic management accounting

A. Role of strategic management accounting

Management accounting, if it is to be useful in strategic management, needs to provide managers with internal and external, financial and non-financial information. Gordon et al. (1978) were among the first to consider the special requirements of accounting systems if they are to be useful for strategic decision-making. They consider that different types of information are needed at each stage of the strategic decision process. These stages are (1) problem identification, (2) generation of alternative courses of action, and (3) selection of the alternative. (207)

The type of information required at the problem identification stage tends to be mostly verbal, qualitative, aggregated, external and current. Information that is useful at the selection stage, on the other hand, is mostly numerical, quantitative, disaggregated, internal and ex ante (that which is expected or planned). A mixture of the above two types of information is appropriate in the generation-of-alternatives stage. The information for each stage is required when the previous stage is finished. That is, it is not required periodically, like most accounting information, but when a specific strategic decision becomes necessary.

As traditional accounting information is ex post (that which has happened), internally oriented and periodic, it does not meet the requirements of strategic decision-making. Gordon et al. suggested that the information needs of strategic decision-making be incorporated into the design of accounting information systems.
Which particular information is relevant will vary from industry to industry and from company to company. Taylor and Graham (1992) suggest some measures, both financial and non-financial, that may be useful. Internal information may include project management, operational, financial and human resource measures. External information may include demographic, economic, legal, technological and ecological information. Competitive information may include market and profit measures, industry benchmarks and competitor performance information. (52, Figure 1)

B. Elements of strategic management accounting

1. Competitor information

Simmonds (1981, 1982, 1983) focuses on comparison of the firm with its competitors. He advocates collection of information necessary to enable determination of market share and competitors' pricing, costs, and volume. A firm which monitors market share can measure the extent to which it is gaining or losing competitive position. Knowledge of a competitor's costs enables a firm to detect when the competitor is trying to change relative competitive positions, for example, by manipulating prices. Knowledge of relative market share and cost structure enables decisions to be evaluated in the light of possible competitor reactions.

This idea is not new. Johnson and Kaplan (1987) write that in the late nineteenth century, Carnegie relied on financial information "which concerned his competitors' direct production costs. Carnegie's operating strategy [of pushing] his own direct costs below his competitors' ...
prompted him to require frequent information showing his direct costs in relation to those of his competitors" (33-34).

Simmonds (1981) suggests some changes and additions to traditional management accounting systems. Market share assessments could be incorporated into management accounts. Budgets could be "routinely presented in a strategic format with columns for Ourselves, Competitor A, Competitor B etc." (28). Changes in competitive position as a result of capital-expenditure or pricing decisions need to be compared with the status quo.

Bromwich (1990) advocates expanding the analysis of relative cost structures to include potential entrants to the market as well as present competitors. He also emphasises the need to monitor market and competitor information over many periods.

2. Multiple strategic plans

Rappaport (1981) advocates the preparation of several strategic plans. These plans could then be compared on the basis of shareholder value, calculated by discounted cash flow analysis. Allen (1985) suggests using measurement of the value of the business, based on cash flows, as a means of "monitoring the relationship of the business with the outside world, and prompting relevant strategic reviews" (26).

Bhattacharya (1987, 1988) also promotes making separate plans for all possible future events, and constantly scanning the future to identify unexpected events at the earliest possible moment to allow formation of new plans. These strategic plans should include accounting plans, strategic budgets and cash flow planning.
3. Value chain analysis

Porter (1985) considers value chain analysis to be one of the keys to gaining competitive advantage. The aim of value chain analysis is to find linkages between activities which result in lower costs and/or enhanced differentiation. These linkages may be within the firm or between the firm and its suppliers, channels, and customers.

![Diagram of value chain](image)

**Figure 1: Linkages in the Value Chain**
Hergert and Morris (1989) point out that changes need to be made to traditional management accounting systems in order to perform value chain analysis. They assert that traditional management accounting systems do not adequately quantify the costs and benefits of joint optimisation and coordination between parts of the firm, and between the firm and its suppliers and buyers. Currently, firms are organised into divisions or responsibility centres on the basis of products or functions, which may obscure linkages. Firms need to be organised into strategic business units according to critical activities, with the accumulation of accounting data for each activity.

Forbis and Mehta (1981), Bromwich (1988), Bromwich and Bhimani (1989) and Shank (1989) emphasise the importance of looking at the linkages between the firm and its customers. Shank shows that reducing the customer's post-purchase costs can assist in capturing competitive advantage. Forbis and Mehta believe that the firm needs to communicate to its customers the extra value that the differentiated product gives them.

While acknowledging the problems in performing value chain analysis, Hergert and Morris (1989) consider that the process itself provides useful insights, even if it is impossible to estimate precise numerical outputs. "One of the strengths of value chain analysis is that it forces managers to think about which activities create profits, to choose a generic strategy for each product and to ask of each item of expenditure 'how does this add value to buyers?'" (187).
4. **Strategic positioning**

Shank (1989) and Shank and Govindarajan (1989) analyse the relative importance of several management accounting methods to strategic position. The appropriate methods chosen by the firm may differ depending on whether the strategic position adopted for a particular product is cost leadership or differentiation. They suggest that companies choosing cost leadership will put the most emphasis on the traditional cost accounting applications. They will use standard costs to assess performance, product cost as an input to pricing decisions, and flexible budgeting for manufacturing cost control. They will perceive meeting budgets and analysis of competitors' costs to be of great importance.

On the other hand, companies differentiating their products as a way of achieving competitive advantage will consider *marketing* cost analysis to be critical to their success. They may consider flexible budgeting and meeting budgets to be of only moderate importance, and will rank standard costing for performance assessment, product costing for pricing decisions, and competitor cost analysis of little importance.

5. **Cost driver analysis**

No matter which strategic position is chosen, differentiation or cost leadership, analysis of the causes of costs is important.

Shank (1989) grouped cost drivers into two types: structural and executional. Structural cost drivers are scale, scope, experience, technology and complexity. Increasing these structural drivers does not necessarily decrease costs. For example, there are *diseconomies of
scale and scope as well as economies. Executional drivers include workforce involvement, total quality management, capacity utilisation, plant layout efficiency, product configuration and exploitation of linkages. According to Shank, increasing executional drivers will always result in decreased costs.

Certain cost drivers have received particular emphasis in recent years. Many writers on Activity Based Costing (ABC)\(^1\) have focused attention on the actual causes of cost, especially costs that arise from complexity. Some firms have attempted to incorporate cost savings arising from experience by calculation of learning curves. However, Shank (1989) notes that firms have largely ignored analysis of cost savings arising from workforce involvement, total quality management, capacity utilisation, plant layout efficiency, and exploitation of linkages with suppliers and customers.

Wilson (1990) remarks that the "impact of different cost drivers will vary from enterprise to enterprise - even within the same industry" (43). The firm needs to quantify the impact of each cost driver on the cost of an activity or value. "Having done this for one's own enterprise the next step is to do it for one's competitors. In this way relative cost advantages can be identified and exploited" (43).

C. Strategic process and management accounting

Dermer and Lucas (1986), Dermer (1988, 1990) and Dent (1990) have considered management accounting systems in the context of

\(^1\) For example, Cooper and Kaplan (1988), Shank (1989), Wilson (1990)
Mintzberg's view of strategy formation (as tending toward deliberate or emergent). They question the effectiveness of traditional management control systems in an organisation which tends towards emergent strategy formation.

Dermer (1990) considers that accounting has three roles in shaping strategy. It may be used as "a language of discourse" (74), as an authority establishing and maintaining credibility, and as a provider of an historical context for strategy. However, Dermer considers that accounting, with its economic basis, is unable to deal with the human factors in a firm, such as interest groups, and the overall mood of the organisation. He points out that stakeholders may use accounting systems to support their own strategy.

Dermer (1990) argues that research on the relationship between accounting and strategy has had a teleological bias, attempting to make accounting more useful to managers. Dermer (1990) takes the ecological view, considering that

organizations are essentially issue-processing ecosystems and [their strategic] agenda is influenced directly and indirectly by the accounting systems which regulate and control conflict. Along each issue's life cycle there are attempts to shape perceptions and evaluations so as to mobilize bias to the advantage of one or another stakeholder. Protagonists, seeing the strengths and weaknesses of conventional accounting as potential opportunities or threats, use them in ways not anticipated by accountants (75).
IV. Summary

This chapter has outlined and explored several suggestions of adapting management accounting to ensure a greater relevance to the formation of business strategy.

In the same way as cost accounting was extended to include other managerial issues, management accounting needs to expand to include collection of environmental and non-financial indicators affecting the strategies of the firm. Budgets and plans need to include this information about competitors and the wider environment.

![Diagram of Cost, Management, and Strategic Management Accounting](image)

Figure 2: A Comparison of Cost, Management and Strategic Management Accounting

The increasing scope of management accounting and subsequently strategic management accounting is illustrated in figure two. The focus of cost accounting was product costing. Management accounting's
focus, while including product costing, extended to include other elements of the performance of the company as a whole. Strategic management accounting includes cost and management accounting, but extends the focus to the environment outside the firm, with positioning in that environment being crucial to success.

The firm also needs to consider the ways in which entities external to the firm can become "partners" in the business, instead of "enemies" to it. By analysing linkages between the firm and its suppliers and customers, differentiation and cost reduction opportunities can be found which will be mutually beneficial to both the firm and its suppliers/customers.

Firms need to consider which management accounting reports and measures are relevant for their strategic position, and reduce or eliminate the time spent on accounting records not used.

Managers also need to attend to activities that cause or reduce costs, not only the complexity and experience cost drivers, but also the "largely ignored" executional drivers.

Finally, managers need to consider the human relationships aspect of management in addition to the financial results. However, it does not necessarily follow that because accounting systems are not always used as anticipated, strategic planning and development of strategic management accounting should cease. Strategic planning should still be undertaken, but in consultation with and with consideration for employees, remembering that strategic plans are not always realised.
The following chapters contain a case study which demonstrates how a small firm developed its management accounting system to support its business strategy.
PART C:

CASE STUDY

CYCLEMAKERS GROUP (NZ) LTD
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1. Introduction

In the last decade and a half there has been considerable debate by social scientists\(^1\) and by accounting academics\(^2\) about the respective strengths and weaknesses of the "scientific" and the "naturalistic" approaches to research. Due to similarities between the two approaches, Abdel-Khalik and Ajinkya (1983) conclude that it is "unnecessary to take exclusivist positions for or against a particular approach or to maintain the primacy/superiority of the inductive versus deductive approaches to theory building" (379). They believe that

> the principal determinants of the choice of research methods are the degree to which phenomena can or cannot be simulated in "artificial" settings, the degree to which overt control or observation can destroy or bias the relevant social reality and the degree to which prior theory is or is not available. Also, the latter characterization enables one to match the type of problem studied with the appropriate data collection method (380).

The first half of the chapter examines the advantages and disadvantages of using the case study as a research method, especially in management accounting research. The remainder of the chapter will give the background to the case study of Cyclemakers Group (NZ) Ltd.

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\(^1\) For example, Halfpenny (1979), Mitchell (1983), Marshall (1985)

\(^2\) For example, Abdel-Khalik and Ajinkya (1979, 1983), Mintzberg (1979), Tomkins and Groves (1983a,b), Morgan (1983), Willmott (1983), Bonoma (1985)
II. Case Studies

A. Definition

Yin (1989), in his monograph on case study research, defines a case study as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used" (23).

Mitchell's (1983) definition includes a link with underlying theory. In his view, "some particular phenomenon or set of events" is studied "with the explicit end in view of drawing theoretical conclusions from it" (191), or because it displays "the operation of some identified general theoretical principle" (192).

B. When to use a case study

Case study proponents have suggested numerous situations in which the case study may be the most appropriate research method. These include:

1. research that cannot be done experimentally for practical or ethical reasons;

2. research that delves in depth into complexities and processes;

3. research questions where the relevant variables and interconnections have yet to be identified and described;

4. research that seeks to understand instances where policy, folk wisdom, and current practice do not work;
5. research on unknown societies or innovative systems;

6. research on informal and unstructured linkages and processes in organization and research on real, as opposed to stated, goals;

7. research that seeks to discover and explore how previous theory fits, explains and predicts, with an openness to several theoretical perspectives;

8. research that seeks the subjective understandings of individuals, the "emic" view (Marshall (1985): 357);

9. research in which the relevant behaviours cannot be manipulated (Yin (1989): 19);

10. research where phenomena are not easily operationalised or easily observable outside the natural settings in which they occur (Bonoma (1985): 202);

11. research where phenomena meet the dual conditions of little theoretical knowledge and high complexity (Bonoma (1985): 203);

12. research seeking to capture the knowledge of practitioners and develop theories from it;

13. research in an area in which few previous studies have been carried out (Benbasat et al. (1987): 370);

14. research into local problem solving and learning processes (Jönsson & Grönlund (1988): 531);

15. research for illustrative examples and quotations (Hakim (1987): 28); and

16. research to increase effectiveness of teaching (Kaplan (1986a): 446).
C. Data sources

Yin (1989) lists several data sources that may be accessed when doing a case study: primary and secondary documents, cultural and physical artifacts, direct observation and systematic interviewing (84). Bonoma (1985) expands this list with some accounting-related sources: financial data (e.g., budgets, operating statements), market performance data (e.g., share, sales by territory), market and competitive data (e.g., product replacement rates, competitive spending levels), written archives (e.g., memoranda), business plans, and direct observations of management interactions (203).

D. Time frame

The time frame of data collection for the case study depends on the phenomena of interest to the researcher.

If the researcher is studying phenomena such as social interactions, symbolism, emotions, and thinking processes, longitudinal case studies may be the most appropriate. Problems associated with longitudinal studies include "going native", no longer noticing "surprising" events, and, if observing as a participant at a low level in the organisation, not having access to all levels of the organisation.

Shorter studies are appropriate when the researcher is interested in "precise description of structural form ... [and] codifying distributions of power at one point in time" (Pettigrew (1979): 570). The main problem with shorter studies is ensuring the accuracy of the data. Interviewees may tell the interviewer what they think he/she wants to know, or may
withhold information because they do not know the interviewer well enough. Also, direct observation may result in altered behaviour.

To a certain extent, accuracy of data can be verified by "triangulation", using several data collection techniques and several data sources. This "within-method", or "data", triangulation tests internal consistency and reliability.

E. Case studies in the "natural science" tradition

Many of the criticisms of case study method are on the grounds that case studies are not rigorous enough, that is, that they do not meet the requirements of scientific method. Lee (1989) takes four requirements of scientific method in which case study method is supposed to be deficient, and shows how case studies can be designed to meet these conditions.

The first requirement, being able to make controlled observations, can be met if the researcher "actively applies his or her ingenuity in order to derive predictions that take advantage of natural controls and treatments either already in place or likely to occur" (39). For example, the researcher can hold people-factors constant by focusing on only one individual, and recording reactions as the environment changes.

Controlled, logical deductions, the second requirement, can be made as validly with verbal propositions as with mathematical propositions. For example, the researcher could use "contrary theories to make contrary predictions about what would happen in the same setting. The theory that emerges unfalsified in this competition would be judged scientific" (38).
Chapter 6: Case study method

Natural science allows for replicability "as a means of assuring the objectivity of the research" (35). Although "the observations in a particular ... case study are non-replicable, the case study's findings (that a particular theory is confirmed or disconfirmed) would be replicable" (41), thereby meeting the third requirement.

The fourth problem is generalising from one case study to other settings. Halfpenny (1979) states that "the case study remains a problem to the positivist because of uncertainty about the generalizability of laws based upon it. It is a question of sampling; only if the typicality of the case can be assessed can researchers estimate the degree of confidence with which they can generalize about some population on the basis of investigating just the one case" (810).

However, case studies are not trying to employ statistical generalisations, but theoretical generalisations. In the same way that results of experiments support theoretical explanations, case study findings may be used to support theories. "Theories which provide convincing explanations will be retained and used in other case studies, whereas theories which do not explain will be modified or rejected" (Scapens (1990): 270). Thus "the validity of the extrapolation depends not on the typicality or representativeness of the case but upon the cogency of the theoretical reasoning" (Mitchell (1983): 207).

Although Lee (1989) shows how case studies can be conducted and reported within the "natural" science tradition, other proponents of case study method place it in the "social" science arena, and do not attempt to justify their findings in natural science terminology. For example,
Mintzberg (1979) defiantly describes the way he does research in organisations as

research based on description and induction instead of implicit or explicit prescription and deduction; reliance on simple, inelegant, as opposed to ‘rigorous’ methods of data collection; the measurement of many elements in real organizational terms, supported by anecdote, instead of few variables in perceptual terms from a distance; and the synthesis of these elements into clusters, instead of the analysis of pairs of variables as continuous relationships (588-589).

F. Summary

The key characteristics of case studies are summarised below.

<table>
<thead>
<tr>
<th>Key Characteristics of Case Studies</th>
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</thead>
<tbody>
<tr>
<td>1. Examine phenomena in their natural setting.</td>
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<tr>
<td>2. Collect data by multiple means.</td>
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<tr>
<td>3. Examine one or a small number of entities (persons, groups, or organisations).</td>
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<tr>
<td>4. Study the complexity of the unit intensively.</td>
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<tr>
<td>5. Are more suitable for the exploration, classification and hypothesis development stages of the knowledge building process.</td>
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<tr>
<td>6. Involve no experimental controls or manipulation.</td>
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continued ...
7. May not have the set of independent and dependent variables specified in advance.

8. Depend heavily on the integrative powers of the investigator in deriving results.

9. Can involve changes in site selection and data collection methods as the investigator develops new hypotheses.

10. Are useful in the study of "why" and "how" questions which deal with operational links to be traced over time rather than with frequency or incidence.

11. Focus on contemporary events

Adapted from Benbasat et al. (1987): 371

III. Case studies for management accounting research

Case methods could play an important role in accounting research. In an area where there is a lack of theory, real difficulties in defining context, an acknowledged importance of patterns of historical development and continued questioning as to the normative or descriptive basis of the discipline, more explicit consideration needs to be given to the advantages that case approaches to research and inquiry can offer (Hägg and Hedlund (1979): 142).

There are four main reasons why case studies are particularly desirable in management accounting research.
Firstly, case studies can capture what is actually happening in practice. Researchers' "how" and "why" questions about managerial behaviour "are best answered by speaking directly with executives and collecting data within the organizations making these decisions" (Kaplan (1986a): 448).

Secondly, because of the multiple sources used in collecting data, and because of the necessity to describe the context of the phenomena of interest, case studies can capture more variables or factors than statistical/quantitative models and methods. Birkett and Chua (1986) note that methods such as survey, laboratory experiment, or mathematical modelling "tend to miss the thick descriptions, the effects of the unfolding of events, and the sense of time and occasion that can only be captured in the field by such methods as participant observation and case studies" (11).

Thirdly, Kaplan (1986a) implies that developing case studies may help to generate theories, as he thinks that "the current lack of theories in management accounting also can likely be traced to our failure to observe, firsthand, how management accounting functions in organizations" (448).

Fourthly, Scapens (1990) notes that the observations made while doing a case study may be used as a means of testing theories: "theories will be used to explain observations, and observations will be used to modify theory" (271-272).
IV. The Cylemakers Case

A. Gaining access

In their advice for researchers new to conducting case studies, Buchanan et al. (1988) recommend "an opportunistic approach" to "negotiating access to organizations for the purposes of research" (56). They suggest using relatives' contacts as one means of approaching an organisation.

This was to be the way with this research. A chance meeting by my husband with a former director of Cylemakers led to him commenting on an innovative employment contract that Cylemakers had instituted before the introduction of the Employment Contracts Act. He also mentioned several ways that Cylemakers had ensured that it would remain competitive in the face of cheap imports from Asia.

Having read some of Porter's and Shank's writings on strategic positioning, I wished to know more about the firm, as it seemed to have successfully followed a strategy of differentiation. I was interested in whether its management accounting system supported its strategy.

A meeting was arranged with the former director, Mr Des Snelling, at which I assessed that it would be advantageous to attempt to gain access to the firm for research purposes. The directors of the holding company, Broadway Industries Ltd, which at that time owned 87% of Cylemakers' shares, discussed my written research proposal and "enthusiastically supported" it (Andrews (1992)).
B. Purpose of the case study of Cyclemakers

Kaplan (1986a) encourages researchers "to seek out interesting organizations or interesting practices ... to learn about innovative, leading-edge practice" (445-446). Cyclemakers is just such an organisation. This case study explores the way Cyclemakers' management accounting has developed to support its innovative manufacturing and management systems.

In the analysis of the case, I will show ways in which Cyclemakers' management has applied several of the strategic management accounting suggestions discussed in chapter five, even though the managers have not read any of the strategic management accounting literature.

C. Data sources

Over a twelve month period, I obtained data from a variety of sources, including newspaper articles; company reports; interviews with former and present directors, managers and employees; internal management accounting and other records; and advertising material.

I visited Cyclemakers' premises initially for three working days, during which time I was free to observe and to interview anyone I wished. I interviewed all the managers, and had unrestricted access to employees. I interviewed the past manager, a past director, a present director and a retailer on other occasions off-site.
I also obtained background information from various documents, such as newspaper articles, management accounting reports, company reports and advertisements.

Data collection methods, sources and documents are tabulated below.

<table>
<thead>
<tr>
<th>Interviews</th>
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<tr>
<td>present directors of Broadway</td>
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<td>past director</td>
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<tr>
<td>past manager</td>
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<tr>
<td>all present management</td>
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<tr>
<td>present employees</td>
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<td>retailer</td>
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<tr>
<th>Observation</th>
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<tr>
<td>all factory jobs</td>
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<td>warehousing</td>
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## Documents

<table>
<thead>
<tr>
<th>Source</th>
<th>Documents</th>
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<tr>
<td>Past manager</td>
<td>previous annual accounts</td>
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<td></td>
<td>previous costing system print-out</td>
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<td>Past director</td>
<td>standard costing system</td>
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<td>cash flow projections and reports</td>
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<td>sales and revenue projections and reports</td>
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<td>debtors aging and overdue debtors</td>
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<td>Present managing director</td>
<td>agendas for sales representatives' meetings</td>
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<td>records of competitor information</td>
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<td>Present management accountant</td>
<td>monthly reports to directors:</td>
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<td>- Profit Statement</td>
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<td>- Balance Sheet</td>
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<td>- Gross Margin Report</td>
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<td>- Debtors report</td>
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<td>- Overdue debtors report</td>
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<td>- Cash flow statement</td>
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<td>- Foreign exchange exposure</td>
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<td>- Area sales report</td>
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<td>product costing schedule</td>
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<td>Others</td>
<td>factory work schedules</td>
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<td>job break-down for all factory jobs</td>
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<td>new dealer assessment forms</td>
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<td>custom orders</td>
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<td>custom print-outs</td>
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<td>advertising materials</td>
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<td>newspaper articles</td>
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</table>
V. Conclusion

As shown in the first section of this chapter, many academics, and especially management accounting academics, are calling for an increase in the use of qualitative research methods such as case studies. As case studies are particularly suitable for exploratory research into what is actually happening in innovative organisations, the case study method was chosen as a means of testing the thesis that management accounting systems need to be adapted in order to provide management with the information it needs in formulating and achieving its strategies for the firm.

This particular case study examines the way in which Cyclemakers has developed and used its management accounting system to support its business strategies.

The case study illustrates the use of the standard costing system

- as a measurement device in support of achieving strategies through innovation and cost cutting,
- as a means of cost comparison with competitors, and
- as a justification for make-or-buy decisions.

The case study also shows that the goal of the costing system is not just to meet standard costs. Instead, the firm works towards continually reducing standard costs, by continuous improvement of manufacturing processes, and exploiting linkages in the value chain.
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Chapter 7:  

Cyclmakers - Phase 1  

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I. Cyclmakers Group (NZ) Ltd

Cyclmakers Group (NZ) Ltd, now a wholly owned subsidiary of Broadway Industries Ltd, is involved in the design, manufacture, importation and distribution of bicycles and replacement parts. It is the largest cycle manufacturer in New Zealand.

Cyclmakers' factory was located at Pleasant Point, 19 km from Timaru, from 1981 to 1990. Following complete destruction by fire in April 1990, it was relocated at Washdyke, on the outskirts of Timaru.

The firm employs around 35 people, manufacturing and selling about 12,000 bicycles per year.

II. History up to deregulation

A. Beginnings

The idea of a small cycle manufacturing operation was first considered in 1981. Twelve cycle retailers, including the present managing director, Bryan Jackson, expressed their dissatisfaction with the then existing manufacturers, Morrison and Healing. The cycle retailers knew what customers wanted on their cycles, but observed that the big companies were not meeting customer requirements. Morrison and Healing had a virtual monopoly on the market, and Mr Jackson found them to be both dictatorial and inefficient.

A feasibility study was commissioned, and the group of retailers subsequently applied for an import licence prior to commencement of manufacturing. The requirements of the Department of Trade and
Industry were discouraging to a third manufacturer entering the market. When permission was finally obtained, the conditions of the import licence included a requirement that two-thirds of the content of the cycles had to be New Zealand-made. This regulation resulted in inefficiencies from the start, as some parts had to be manufactured in New Zealand that could have been imported more cheaply.

Twelve months after the idea was first conceived and discussed, the factory was built at Pleasant Point and production of cycles began.

B. Company structure

The original twelve retailers were the directors and controllers of the company. They held Class A shares and were entitled to dividends. A group of 100 other retailers were offered Class B shares for a contribution of $1000 capital. Instead of receiving dividends, they were able to purchase at a discount and were entitled to priority for orders over retailers who were not shareholders.

C. Production growth

From its inception, the emphasis of the company has been on flexibility, in order to meet customer requirements. By targeting the product most in demand at that time, 10-speed cycles, Cyclemakers had attained 20% market share within 5 years.

Cyclemakers' management assessed customer requirements by a "forward planning programme". In August, retailers supplied Cyclemakers with a projected plan of requirements for the busy season, September to January. Although these were not necessarily firm orders,
retailers were induced to keep to them by the offering of attractive discounts. The projected demand enabled Cylemakers to manufacture the types of cycles that would sell, so that eventually no stock was being carried: all cycles were being made to order.

D. Competitive environment

During this period of Cylemakers' history, the market was highly regulated. Only 10% of cycles sold were allowed to be imported, and these imports attracted heavy tariffs of 27.5%. New Zealand cycle manufacturers were therefore operating in a protected environment.

However, the requirement of two-thirds New Zealand content resulted in some inefficiencies. For example, bicycle forks cost three times as much to make as to import, but until deregulation they were manufactured by Cylemakers in order to keep up the New Zealand content in the cycles.

E. Inefficiencies

By 1986 the shareholders were becoming concerned about the way the firm was being managed. I interviewed the former manager, Mr Ian Hooker. He freely admitted that the rapid growth of the firm resulted in unavoidable inefficiencies. The management accounting system was "amateurish" because no one working for the firm had accounting training. Mr Hooker and the other directors admitted that stock valuation was hard to determine, untimely and inaccurate.

With Cylemakers' emphasis on meeting customer needs, the designer was quick to react to the market with rapid model changes. However there was no liaison with ordering, with many parts being imported that
were not needed. The lack of production planning resulted in waste, overlap and delays.

Components were ordered individually. As a result, production was often delayed for one part, and the stock was unbalanced, for example, pedals but no chains, and spokes that did not fit the wheels.

Due to the rapid growth of the firm, work flow in the factory did not proceed in a logical way.

F. Management accounting

Accounting in general was not given much emphasis, as evidenced by Mr Hooker's comment, "It didn't matter - well, it sort of did!"\(^1\) Initially annual reports were prepared by a firm of accountants, based on bank statements. Later, C cycle makers' staff coded bank statements and entered them monthly into a General Ledger computer system.

The Bank of New Zealand offered the firm comprehensive funding for overseas purchases, secured against personal guarantees. Whenever the firm wanted to borrow more money, the bank would ask for a "review of facilities", that is, a projected cash flow. The bank also wanted to know the current position monthly, but it was not often supplied, because of the difficulty in determining stock value. The directors would also have liked monthly information, but "they never got it."\(^2\)

\(^1\) In an interview with Mr Hooker, 17 June 1992
\(^2\) In an interview with Mr Hooker, 17 June 1992
An outside consultant showed the manager how to apply overheads based on direct labour dollars. This system was incorporated into the accounting computer program. For the first three years overheads were negligible, and the application was very small. However, every year the overhead rate was updated without the manager understanding the rationale behind the overhead rate chosen, until eventually overhead was being applied at 180% of direct labour dollars.

The manager and factory manager were responsible for costing, and they set prices based on cost plus a margin. However, they met some reluctance from the directors towards increasing prices, as the directors were retailers who knew what prices the market would sustain.

Mr Hooker considered that they were good at forecasting sales, but admitted that they were not good at comparing actual with budget. Moreover, the so-called "actual cost" statements were quoted at standard cost, not actual cost.

Mr Des Snelling, who introduced management accounting systems when the Broadway consortium became involved with the firm, commented\(^3\) that the existing accounting system was giving no management information. The annual accounts were for tax purposes only. There were no cost centres or budgets, no breakdown into factory, selling and administrative costs and no cash projections of capital needs. As Mr Hooker had said, there were standard costs, but they were not related to actual costs. Mr Snelling noted that the absorption costing had resulted in a grossly overvalued inventory. Applied overhead was approximately

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\(^3\) In an interview with Mr Snelling, 30 June 1992
one third of the product cost, whereas actual overhead costs were about one eighth.

III. Motivations for change

A. Sources of finance

In 1986, Cylemakrs suffered two major set-backs. Major floods in the area badly damaged stock and equipment. Although everything was adequately insured, recovery was a slow process. Immediate replacement parts were air-freighted in. However, the firm was expecting, and relying on, two containers already in transit. When they were opened on arrival, they were found to be full of sea water, the result of a tropical storm. Mr Hooker quoted these two set-backs, the flood and the water-damaged parts, as significant causes of Cylemakrs' financial problems at the time.

With the equity falling to as low as 18% of total assets, the bank had become reluctant to lend more money. Initially, the firm considered floating the company on the No. 2 board of the New Zealand Stock Exchange. The firm consulted a stockbroker, and prepared a comprehensive business plan and the financial data required for the prospectus. However, early in 1987, the stockbroker advised Cylemakrs that it was not an auspicious time to float a new company. Instead, the firm began to look for an equity partner.

In May 1987, a consortium agreed to inject capital into the company. Broadway Industries Ltd, Business Loans and Equity (BLE) and an Invercargill investor each contributed $200 000. A new company was
formed, Cylclemakers Group Holding Ltd, with the three new equity partners each owning one quarter and the former shareholders retaining the balance.

The company made a massive loss in the year ending 28 February 1988, which Mr Hooker attributed to two possible reasons. Firstly, the injection of capital into the new company was not made until six months after the consortium signed the agreement. The bank had curtailed further borrowing pending the injection of capital. The firm was therefore not able to operate at previous levels during that six month period. Secondly, the consortium valued the stock differently from the methods employed by the previous company, using variable costing and not attempting to allocate overheads. Therefore the total value of stock was much lower by the new method than by the previous method.

**B. New competitive environment**

In July 1987, the same year the new equity was introduced, the cycle market was deregulated. From that date onwards there was no restriction on imports of cycles, frames or components. The requirement of New Zealand content in cycles manufactured in New Zealand was reduced from two-thirds to one-quarter. Tariffs were also lowered immediately to 22.5%, and have reduced by 2.5% p.a. since that time.

With deregulation, Healing and Morrison stopped manufacturing in New Zealand, importing their own brand names made in Taiwan. Morrison and Healing have both now left the industry.

Cyclemakers now faced an unprotected environment, with a flood of cheaper cycles from Asian countries. It needed to make a decision about
whether or not to continue to manufacture, and whether to continue in the same product lines. It decided it was viable to continue if it dropped out of the lower end of the market, focusing on the middle to high price range, especially mountain, triathlon and racing cycles. This restructuring occurred concurrently with the introduction of the new equity partners.

The consequence for Cylcematic of a lower requirement of New Zealand content in the cycles manufactured in New Zealand was that it now could cease inefficient manufacturing. However, this strategy meant less demand for labour, with resulting lay-offs of half the factory employees.

**IV. A new phase**

Deregulation, with the accompanying new company structure and the introduction of equity partners, marked the beginning of a new phase in the firm's development. Over the next four years Broadway Industries gradually increased its shareholding, until in February 1992 it announced that it was "moving towards 100% ownership through compulsory acquisition of the few remaining shares" ("Broadway 1:10 bonus ..." (1992)).

Mr Hooker resigned at the end of 1987, Mr Bryan Jackson replacing him as managing director of the company. Changes that have taken place in the firm under his leadership are documented in the next chapter, the second phase of Cylcematic's development.
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Chapter 8: Cyclemakers - Phase 2

I. Introduction

The 1987-88 financial year was certainly a time of change for Cyclemakers, with deregulation of its markets, new equity partners and a new general manager. In order to continue to be successful in the deregulated environment, it needed new strategies as well.

II. New strategies for a new environment

Before deregulation, Cyclemakers was able to compete in the New Zealand cycle market as a whole. Its emphasis on flexibility had enabled it to rapidly change models to satisfy customer demand more quickly than its larger competitors. The directors' intimate knowledge of the market, gleaned from their role as retailers, enabled them to predict accurately those models which were most likely to be in demand. Therefore, for example, they were able to exploit the demand for 10-speed cycles in the early 1980s.

However, after deregulation, management at Cyclemakers judged that it was unable to compete against the very cheap Asian cycles flooding the market. Instead it had decided to focus on the upper part of the market: higher priced mountain and racing cycles. As well as the existing differentiation strategy based on flexibility, the managers decided that they also needed to emphasise Cyclemakers' superior quality, both quality of product and quality of service.

Although Porter (1980, 1985) holds that differentiation and cost leadership strategies are usually mutually exclusive ((1980): 40-41; (1985): 18), he does concede that even differentiators must watch their
costs, maintaining "cost proximity to competitors" (1985: 62). Cyclemakers' managers consider knowledge of their costs to be essential to their continuing profitability. Since deregulation they have developed the costing function of their management accounting system to give them confidence in the accuracy of their product costs. They then use these product costs for make-or-buy decisions and for comparison with competitors.

III. Changes

Changes in strategy and emphasis necessitated several changes in the running of the firm. For example, the decision to buy bicycle forks rather than make them resulted in labour redundancies. At the same time, some changes that evolved spontaneously resulted in enhancement of the firm's strategies. For example, development of computer-aided design and the custom jig resulted in greater flexibility at lower cost.

A. Supplier Relations

Mr Snelling considered that the single most important problem in manufacturing at the time of restructuring was delays in supply. In order to avoid production delays due to the late arrival of one or two individual components, Cyclemakers "shopped around" to find suppliers who would send parts in complete sets rather than individual components. Production delays and components inventories were therefore greatly reduced.

Production and ordering functions were integrated into production planning. The present factory manager now plans production schedules
ahead, ensuring that components are ordered in time, and that parts and labour are available before production starts. Suppliers are followed up to ensure that delivery is on time. If delivery is late, the firm changes suppliers.

Prior to deregulation, manufacturing stocks were sometimes used for after-sales service. This meant that parts were frequently unexpectedly unavailable at the time when they were needed in production. Since deregulation, although manufacturing and after-sales parts are kept on the same premises, they are kept separate, to ensure that stocks required for manufacturing are always on hand.

B. Manufacturing

Cyclemakers has been innovative in designing technical equipment to save design, set-up, and manufacturing time. It has re-arranged its factory to allow work to proceed linearly from frame building through to packing and dispatch.

1. Design and Set-up

Having started the company in response to a perceived lack of flexibility to adapt to market conditions present in the large manufacturing firms, Cyclemakers has placed considerable emphasis on providing the features that satisfy customers' demands. Most of these desired features can be supplied at minimal extra cost. However, changing dimensions of cycle frames was expensive, a major proportion of the cost being incurred in the design and set-up stages of manufacture of the frames.
A top New Zealand cycle frame builder developed a computer program to simplify the design of custom frames. He also designed and built a jig on which the basic angles of the frame could be quickly altered according to the design. Cyclemakers purchased this program, designing and building a modified version of the jig more suited to full-scale production. In September 1991, Cyclemakers was able to start production of custom built cycles which cost only about $100 more than standard cycles.

2. Quality

Product quality is one of the cornerstones of Cyclemakers' strategy. The company aims to provide the customer with a better value for money product than that which can be obtained from similar priced imports. The manager in charge of quality control concentrates on total quality management. He has trained the workers to judge the standard of quality of their output for themselves. Initially the workers expected the manager to stand at the end of the production line and say "OK" or "not OK". Now the workers have developed the skill and confidence to judge the quality of their own outputs.

Since the introduction of the new employment contract, a reward/punishment system has been instituted to detect errors as early as possible. Each team of workers check the product of the previous work station as it comes to them. If any mistake has been made, the person who finds it is paid a $1 "reward", and the team that made the mistake are "fined" $1. In this way, the number of mistakes and the work station at which they occurred can be easily ascertained from the number of payments/fines. The item returned for rework is deleted from the tally of finished units, with the result that the team are not paid for the item
until it has been reworked, and the company does not pay any extra for the additional labour of reworking.

The quality of manufacturing has increased markedly since the introduction of this quality control system. Over the busy period approaching Christmas 1991, when about 2000 cycles were being made per month, only about one mistake per month was picked up at the final bicycle assembly area.

In June 1991 Cylemakrs secured an export contract to Germany. Having to comply with European quality standards had a beneficial effect on the overall quality of Cylemakrs' cycles. For example, top quality cycles have internal welding without any unsightly build-up of welding material around the joints.

Cyclemakers has backed up its promise of high quality by offering a ten year guarantee on the frames it manufactures, enabling monitoring of improvements in quality through the number of repairs made under warranty. Nowadays most defects found during the warranty period relate to imported components, for example, malfunctions of derailleur gears.

3. Speed

Previously wheels were built by hand, a slow process. Cyclemakers took the opportunity to buy a second hand wheel assembly machine which the previous owners had not been able to get to work. Cyclemakers' engineers got it running, increasing wheel production four-fold without any increase in labour cost.
4. Factory layout

In April 1990 a fire razed the Pleasant Point factory to the ground. This at first seemed to be a complete disaster, but in fact provided management with an opportunity to design a new factory with a logical flow of work. A plan of the factory showing work flows follows.

![Factory layout diagram]

C. Labour

When he first became involved with the company, Mr Snelling considered that labour cost was the most difficult part of product cost to estimate accurately, because demand was variable and seasonal. Slackness in winter and extra demand approaching the Christmas peak
resulted in wasted time and overtime respectively. From the time of deregulation onwards, management has sought to stabilise labour cost.

1. The first labour scheme

Following deregulation, which led to the drop in the requirement of New Zealand content in frames, inefficient jobs were discontinued, with inevitable redundancies. The remaining staff were anxious to avoid being laid off, and were therefore prepared to try new ideas in order to retain their employment and residence in a small town location.

Management offered employees a contract whereupon they worked only a five hour day in winter, but were paid for an eight hour day. The difference in pay between a five hour and an eight hour day was recorded as a debt to the company. In the busy season they worked more than an eight hour day, but only received cash wages for eight hours. The overtime, at the overtime rates, was applied to reducing their debt. Any debt not repaid by Christmas was forgiven.

Under the laws in force at that time, all employees in an industry were covered by an award, "which provided the same basic set of wages and conditions for all those engaged in an industry throughout the country" (Churchman and Grills (1992): 1). Changes to awards required negotiation between the Government, the Trade Union movement and the employers. Thus, Cyclemakers' contract, negotiated between employer and employees, was not strictly legal at that time. Nevertheless, the union representative consulted with the employees and agreed not to object. The scheme benefited the employees, as they had a steady income all year round. The scheme also benefited the
company, giving it a stable work-force, and the advantage that the smoothed pay rate simplified the estimation of direct labour costs.

Upon the introduction of the Employment Contracts Act in September 1991, a new employment contract was negotiated. Now all of the factory employees, apart from apprentices and supervisors, are retained as though they were outside contractors.

2. The employment contract

Each work station (e.g. welding, painting, wheel assembly, bicycle assembly) comprises a team of workers, with varying levels of competence for the particular job. Experts are counted as 1.2, average workers 1.0 and learners 0.8.

The production manager is responsible for rating the employees, based on past experience and output on each job. When an employee considers he or she has reached a higher rating, the employee is assessed by the production manager and another worker from that department already on the higher rating. However, the final decision as to whether or not the rating is to be increased remains ultimately with the production manager.

A contract payment is allocated for each completed unit at each station (e.g. a finished welded frame at welding; a completely painted frame and fork set at painting; a fully assembled wheel at wheel assembly; and each assembled and packed bicycle at bicycle assembly). These contract payments therefore make up the standard labour cost for each part.
The payment for each work station is divided among the workers in the team according to their ability level. As payments are only made for completed units, the contract disadvantages contract employees who do not complete their work one day and are sick the next day when the team completes the units. The sick worker does not receive any remuneration for the partly completed units of the previous day. Although most units are completed in one day, the contract workers view the non-remuneration of a worker sick on the day of completion as the only disadvantage of the contract.

However, because workers are paid only for completed work, the result is a more consistent production rate and less down-time. When there is a shortage of work available in their particular area of specialisation, workers move to another work station where work is available. "Everyone in the factory can do at least two jobs and down time is kept to a bare minimum" (Attwood (1990)).

Some parts may be either purchased from external suppliers or manufactured at the factory. During slack time, workers may decide to manufacture parts at the same cost as the price which would have been payable had the parts been purchased. This prevents the workers from being idle, and gives them some extra income at no extra cost to the firm.

The busiest time for the firm is September to January. Prior to the new employment contract coming into force, the firm was forced to employ temporary labour and pay overtime to its permanent employees in order to meet the demand over the busy period. Under the new contract, employees have preferred to work longer hours in the busy times, rather than let the company employ temporary labour.
Labour costs for the firm have decreased by 20%, as it is no longer paying overtime rates and employing temporary labour. Nevertheless, the new contract has also resulted in 25% higher earnings for the workers, as they are securing work that was previously performed by temporary labour. Therefore, the new employment contract has resulted in both reduced labour costs and more accurate product costing, providing benefits to both workers and management.

3. Innovation

Many of the improvements at Cyclemakers are a direct result of the skill and innovation of the employees. For example, even though the idea for the custom jig came from a frame builder outside the firm, the engineers within the firm improved on the idea and built a jig suited to the larger scale production expected at Cyclemakers.

Management is receptive to ideas and suggestions from employees. For example, at one time management decided to stop manufacturing a particular item as it had become more expensive to make than to buy. Factory employees approached the managing director, and suggested that they could manufacture the item more cheaply than the external price if the company were prepared to buy an extra piece of equipment. Management calculated the perceived costs and benefits of the investment, and decided to implement the employees' suggestion. The staff are now able to earn more by making the item, and the company has made a cost saving.
D. Style of management

Bryan Jackson, the managing director, has a good relationship with his staff. With each change he has implemented, he first explained to staff the reasons for the changes and decisions, enabling them to know the logic behind decisions. Therefore, the staff are committed to the company and loyal.

Mr Jackson has made Peters' dictum of "managing by wandering around" part of his management style. He keeps in touch personally not only with his managers, but also with his factory, warehouse and office employees. One of the factory contract workers commented on how approachable the managing director was. The employee felt that the manager would listen and act if he thought it was appropriate to do so.

E. Management accounting

At the time of repositioning, the management accounting system was completely inadequate. Accounting information was collected for financial reporting purposes only, and was transmitted at the end of each month to a firm of chartered accountants. Any ambiguities in classification were resolved arbitrarily by the accounting firm, without consultation with Cyclemakers' office manager. The finished accounts were conveyed directly to the managing director, without reference to the office manager. Therefore, any misclassifications were not isolated.

Also, the financial reports prepared by the accountants were the aggregated reports required for financial reporting purposes. The information was neither timely nor sufficiently detailed for management decision-making and planning.
In phase one, product costing was performed by the former manager and the factory manager, but only for the purpose of inventory valuation for financial reporting. Stock was overvalued and the costing was inaccurate, making it impossible to determine the true position of the firm.

1. Costing

Mr Snelling visited Cylemakers at least once a month during his involvement with the firm. The first thing he instituted was a traditional direct costing system. Overheads were not traced to units of product, but were accumulated and controlled in cost centres: factory, warehousing, advertising, administration and selling.

2. Pricing

When setting prices for outward goods, Cylemakers' managers decide what price the market would be prepared to pay for a model with particular features and components. Having decided on a target price, they deduct their desired profit margin, leaving a target cost. The manufacturing cost of every component in a cycle, with the desired features, is then itemised and summed.

If the resulting cost is higher than the target cost, several courses of action are considered. The company may replace some of the components with similar but cheaper substitutes; it may decide to decrease the desired margin so the product can still be marketed for the same price; or it may try to reduce the cost of components.
F. Customer relations

1. Quality of service

As well as product quality, the company's quality strategy includes quality of service, in particular speed of service. A standard cycle can be delivered to a retailer within four days of receiving the order. Because Cyclemakers uses airfreight, it can also guarantee quick delivery, within 24 hours for bicycles and components which are in stock. The low number of late deliveries is a measure of its success in pursuing the goal of quality of service.

As a consequence of its position in a South Island town, Cyclemakers receives favourable freight rates with the airlines, which are cheaper than road or rail freight. In New Zealand, airlines fly most freight out of Auckland, which is in the North Island. Rather than have the planes return to Auckland empty, they offer space at a lower rate. Therefore it is cheaper to freight goods from the South Island to the North Island than vice versa. Cyclemakers has taken advantage of this by moving its warehouse for after-sales parts, which was formerly in the North Island, down to its factory in the South Island.

2. Imparting information

Sales representatives are trained to sell Cyclemakers' cycles on their points of differentiation. It is the sales representatives' job to keep retailers informed about special features, and reasons why Cyclemakers has decided not to use some features that competitors use. Retailers are chosen not only for their ability to sell. They must also have facilities to provide pre-delivery and after-sales checking, after-sales service, back
up and warranties. Cyclemakers ensures that the value of its cycles is communicated to the end-user through the sales representatives and retailers.

3. Obtaining information

As a former retailer of cycles, the managing director has a high regard for the opinions of the customer. In order to maintain a rapport with the company's immediate customers, the retailers, the managing director himself regularly calls on retailers. He also insists on his sales representatives maintaining their rapport with retailers in their areas.

Management consciously makes achieving "extraordinary responsiveness" to customers (Peters (1987)) its aim. Retailers have access to a toll-free line to Cyclemakers, which they may use not only for ordering, but also for complaints and comments. Sales representatives must also glean end-user requirements from retailers and report back to the sales manager.

Inroads into Cyclemakers' market share can be assessed visually by sales representatives as they visit retailers' premises, by observing the proportion of Cyclemakers' cycles on the shop floor. Sales representatives also note prices and features of competitors' cycles.

Management keeps records of competitors' prices, features and volume. Because the company has developed a detailed, accurate costing system, it is easy to estimate the cost of new models released by competitors. Differences attributable to better quality materials, or conscious choices not to use the most recent components, can then be justified to retailers and customers.
IV. Conclusions

Having decided to stay in manufacturing, and having set its strategy for the new environment, Cylemakers focused on improving all aspects of its value chain, at the same time reducing costs wherever possible. It adapted and developed its management accounting to assist in achieving its goals. A comparison of Cylemakers' management accounting and the literature on strategic management accounting follows in the next chapter.
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I. Introduction

In chapter five I examined several theories of strategic management accounting. In this chapter I shall treat each in turn as a normative theory (that is, prescribing what should be done in practice) and examine the ways in which strategic management accounting at Cyclomakers does and does not fit the theory.

II. Competitor information

Management at Cyclomakers is diligent at collecting competitor information, as promoted by Simmonds (1981, 1982, 1983), although the management are not acquainted with Simmonds' papers. Sales representatives must regularly report competitor information to the managing director. This information about competitors' sales volumes and prices is gleaned mainly from conversations with retailers and observation of competitors' products in the retailers' shops. Competitors' costs can be estimated from Cyclomakers' knowledge of its own costs and observation of components on its competitors' products. Market share is estimated from knowledge of how many cycles dealers have sold, customs records of the number of cycles landed, and Cyclomakers' own production figures.

When getting quotations from suppliers, Cyclomakers requests prices for all stages of completion (for example, raw tubing, tubing already cut and mitred, tubing with braise-ons, and painted frames), in order to allow comparison of prices with the cost of manufacturing each stage internally. As the company's major decision using product costing data is whether to make or buy, its suppliers can also become its competitors if
the company decides to manufacture. By requesting a detailed breakdown of prices from suppliers, the company is thereby obtaining information about the cost structure of its "competitors", as advocated by Simmonds.

However, although detailed competitor information is collected and continually used in make-or-buy and marketing decisions, its use differs in several ways from that suggested by Simmonds (1981, 1982, 1983). Firstly, the information is not collected or recorded by the management accountant, even though Simmonds (1981) notes that accountants have both "the concepts and the skills" (29) to provide these figures with precision. Secondly, Cylemakers does not develop comparative budgets between its own and its competitors' costs. Rather, Cylemakers uses the competitor information to enable it to make decisions about the introduction of new features and/or models, and to enable it to impart to sales representatives, and through them to retailers, information about the points of differentiation chosen by Cylemakers in contrast to its competitors.

III. Multiple strategic plans

Making several strategic plans and comparing them on some valuation basis, as suggested by Rappaport (1981) and Bhattacharya (1987, 1988) is not practised at Cylemakers, although they made a business plan and estimated its feasibility before starting the business and at the time of deregulation.
IV. Value chain analysis

Although the managing director of Cylemakers has not read Porter's (1980, 1985) books, he has applied many of the principles espoused therein. Porter advocates value chain analysis, that is, finding linkages between activities, as the key to competitive advantage. Linkages may be exploited in order to lower costs and/or enhance differentiation. Cylemakers has successfully both lowered costs and enhanced its differentiation, based on flexibility and high quality, by identifying linkages both within the firm and with external parties.

A. Sources of lower costs

Costing information is used by Cylemakers primarily for make-or-buy decisions. The company is constantly seeking ways of improving the accuracy of the costing part of its management accounting system. This enables the firm to have the confidence that it is making the correct decisions about whether to make or buy each part, component, and bicycle.

Cylemakers does not measure cost merely to work out a standard cost. The company aims at continual cost reduction together with continuous improvement in its operations. The product costing system developed has enabled the firm to measure the success of its cost reduction ideas.

In this section I will examine the ways in which Cylemakers has exploited linkages in the value chain in order to obtain both lower and more accurate costs.
1. Linkages with suppliers

Cyclmakers has found a way of purchasing components at lower costs than those of its competitors and those previously incurred. It has successfully exploited the advantages of selecting certain suppliers. Many components are procured from the Japanese firm of Shimano, who are the leading manufacturers of gear and brake components in the world. As well as selling its own New Zealand manufactured cycles, Cyclmakers sought an agency in New Zealand for Peugeot cycles, which are imported and assembled here. The company did not need Peugeot cycles for their quality or name, as Cyclmakers considers its own cycles to be as good as or better than Peugeot. However, Peugeot has a favourable relationship with component suppliers, because of its size and position among the top four cycle manufacturers in the world. Thus the Peugeot agency enabled Cyclmakers to buy Shimano components with cost savings of up to 20%.

Savings on freight are also obtained by good relationships with suppliers. For example, Cyclmakers arranged to purchase unpainted Peugeot frames and forks. This obviated the necessity for cardboard packaging to prevent paint chipping, allowing more items to be packed in one container. Cyclmakers also arranged with component suppliers to pack the maximum number of components and parts into one container, and even arranged with those suppliers to consolidate their orders so that containers are full. It has also determined the size of container which maximises the number of parts that can be shipped at once.

The above examples illustrate the successful exploitation of linkages with suppliers in order to reduce costs.
2. **Linkages within the firm**

Cyclenmakers qualifies as an "Original Equipment Manufacturer" (OEM) by virtue of the fact that it manufactures frames within New Zealand. Using its OEM status, it can import parts and components at a reduced OEM rate, not "after-market" prices, thereby reducing raw material cost.

The employment contract has allowed Cyclenmakers to both stabilise and reduce labour costs. Non-value-added labour has been greatly reduced by the introduction of computer-aided design, which reduces the time required to complete a design from the previous more than half a day to a matter of minutes. The custom jig obviates the need to build special jigs for unusual frame dimensions, thus avoiding the need for more non-value-added labour. The new factory layout, with its logical flow of work, has reduced material handling to a minimum. The wheel building machine has greatly reduced wheel building cost.

All the above are excellent examples of exploiting linkages within the firm to achieve lower costs.

3. **Linkages with customers**

The favourable location of Cyclenmakers has enabled it to minimise freight charges for delivery to retailers, by using the cheaper rate for south-to-north air freight. Passing on the cost reduction on freight to the customer increases the good-will of the firm. The exploitation of this linkage with customers benefits both the firm and the customer.
B. Enhancement of differentiation

Cyclmakers has found several linkages within the firm, and with customers, which enhance their points of differentiation: flexibility and quality.

1. Linkages within the firm

Cyclmakers has sought to maximise quality and minimise the cost of quality by its innovative employment contract and favourable location. By using peer review, it has avoided costly recording schemes, the cost of rework, and the cost of quality inspectors. The company has been able to share the benefits with its employees, offering stability of employment and regular earnings.

The receptivity of management to employee ideas and suggestions has enabled the company to exploit the innovation and skills of its staff.

2. Linkages with customers

The greater precision and flexibility provided by the computer aided design and the custom jig have enabled Cyclmakers to maximise its responsiveness to customer needs. The firm has also been able to emphasise its quality of service by providing fast delivery and excellent after-sales service.

The following table shows the linkages in the value chain that have been a source of cost reduction and/or product differentiation.
Linkages in the Value Chain

- **Suppliers**
  - Peugeot agency
  - Packaging
  - Cooperation

- **Cyclemakers**
  - Raw materials
  - OEM status
  - Direct labour
  - Employment contract
  - Workforce involvement
  - Design
  - CAD
  - Set-up
  - Custom jig
  - Material handling
  - Factory Layout
  - Quality
  - Employee detection
  - Reward/punishment
  - Employee suggestions

- **Customers**
  - Cheap freight
  - Fast delivery
  - Custom
  - After-sales service
V. Strategic positioning

Shank (1989) suggests that some traditional management accounting techniques and measures are more appropriate for firms pursuing cost leadership while other techniques and measures are better suited to product differentiators. Some of the principles suggested by Shank are applied by Cyclemakers, despite Shank not having been read by its management. For example, Cyclemakers uses standard/product costing information primarily for comparison with competitors, and for make-or-buy decisions, rather than for performance assessment and pricing decisions. However, although Cyclemakers attempts to lower all costs, it places more emphasis on product costing comparisons with competitors than on marketing costs, as suggested by Shank.

VI. Cost driver analysis

Cyclemakers has paid special attention to the causes of costs, the cost drivers, because of the emphasis on continual reduction of costs. It has looked at some of the sources of cost reduction that Shank (1989) thought were largely ignored, for example, work force involvement, total quality management, plant layout efficiency, and exploitation of linkages with suppliers and customers.

VII. Strategic process

Looking at the firm from Mintzberg's point of view, its strategy formation tends toward the deliberate end of the spectrum. Its entrepreneurial management has imparted its strategy for the firm to all levels. Therefore, it is reasonable to compare this firm's use of management
accounting information with that of the strategic positioning school, which presupposes deliberate strategy formation.

However, in attempting to assess its competitive position, the firm has not lost sight of the human element. Consideration of people at all stages of the value chain has been incorporated into its strategic planning and management accounting.

Cycl makers' emphasis on good rapport with suppliers, employees and customers has helped it to exploit cost savings at all stages in the value chain. Although Cycl makers is a small purchaser from large global firms like Shimano, and hence could have expected to be price-takers, it has worked at finding ways to get the best deals possible, despite its size. Developing and maintaining good relationships with staff has enabled Cycl makers to exploit many cost saving possibilities within its manufacturing plant. Finally, considering the end-user in the value-chain, Cycl makers has been able to increase the value of its product as perceived by its customers, and as proposed by Forbis and Mehta (1981). Therefore the company has been able to maintain its market share in the targeted segment of the market.

**VIII. Traditional management accounting**

Management at Cycl makers has adopted the parts of traditional management accounting that are relevant to its strategic decisions, and largely ignored some traditional management accounting functions.

The management accountant prepares a budget of expected sales, expenses and cash flows for 12 months ahead. This is updated each
month, and new projections are made based on the year to date. Budget and actual are compared, but there is no detailed variance analysis.

The main part of traditional management accounting that is relevant for strategic decision making at Cyclemakers is product costing. As overhead cost is such a small percentage of total cost, no attempt is made to assign overhead cost to products. Only direct cost is used.

Management at Cyclemakers concentrated on the two aspects of product cost thought to be more relevant, namely direct material and labour costs. As a result it has successfully developed a costing system that focuses attention on reducing these costs, enabling it to gauge how successfully cost reduction is being achieved.

**IX. Conclusions**

Several writers have suggested ways in which management accounting could be adapted to support the business strategy formulated and/or formed within the firm. The management accounting system developed by Cyclemakers, in response to strategic change at the time of repositioning, corresponds most closely to Shank's (1989) theory, especially the use of value chain analysis.

The final chapter will consider the implications of this case study: the ways in which Cyclemakers has applied strategic management accounting, the underlying principles of the firm, and the general application of the case study to other firms.
PART D:

CONCLUSION
Chapter 10: Conclusion

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I. Introduction

In chapter 1 I set out my thesis: "that traditional management accounting is not adequate for supporting and providing the information necessary for strategy formulation in the new environment facing manufacturers today. ... [It] needs to be adapted and added to ... in order to be useful in providing the information needed in carrying out strategies of the firm".

This case study of Cyclemakers Group (NZ) Ltd supports the thesis. Cyclemakers down plays or ignores some aspects of traditional management accounting (for example, variance analysis). On the other hand, as accurate costing is very important to the strategic decisions made by Cyclemakers management, Cyclemakers has used management techniques, such as exploitation of linkages in the value chain, and an emphasis on continual improvement, innovation and good human relationships, to enhance and improve on the cost figures provided by its management accounting system.

II. Implications of this case study

A. Applications of strategic management accounting

Cyclemakers is realising its strategies by applying several of the ideas suggested in the literature on strategic management accounting, despite not having studied the literature.

Simmonds suggested collecting competitor information in order to continuously assess the present competitive position and the effect of internal and competitors' decisions on the future competitive position.
Cyclomakers is achieving this by means of the information system of its sales representatives and by its relationship with its suppliers.

Porter advocated exploiting linkages in the value chain: with suppliers, in internal activities, and with customers, both channels and end-users. Cyclomakers has found a number of places in the value chain where costs can be reduced. It has negotiated with suppliers to get favourable prices and to cut freight costs. It has negotiated an employment contract that enables it to stabilise labour costs and also to detect and decrease substandard output while avoiding costly detection and recording systems. Flexibility and quality of product for customers, without excessive extra cost, have been achieved.

Shank suggested that some traditional management accounting techniques and measures will be more appropriate to firms pursuing cost leadership than to those differentiating their products. Cyclomakers uses its product costing information mainly for comparison with competitors, and for make-or-buy decisions. Although it attempts to lower all costs, it places more emphasis on product costing comparisons with competitors, rather than marketing costs, as suggested by Shank.

Because of the emphasis on continual reduction in costs, Cyclomakers has paid special attention to the causes of costs, the cost drivers. It has looked at some of the sources of cost reduction that Shank thought were largely ignored, for example, work force involvement, total quality management, plant layout efficiency, and exploitation of linkages with suppliers and customers.
An integral part of Cyclemakers' development as a firm has been the emphasis on people. Management have set pricing and quality strategies which have been achieved because of the rapport with people at all stages of the value chain.

B. Underlying principles

Cyclemakers is unique in the particular decisions it has made. However, the general principles espoused by Cyclemakers may be relevant to many companies facing similar strategic choices in the changing manufacturing environment.

1. Emphasis on human relationships

Unfortunately, the language of accounting tends to obscure the human aspects of the business. For example, it is easy to talk about reducing labour cost without thinking of the impact of redundancy and unemployment on the people who have contributed the labour. Similarly, replacing labour with up-to-date technology may result in increased efficiency, but may also cause people to be made redundant or necessitate retraining.

Strategic management accounting is not only about accounting, nor only about strategy. It also includes many aspects of management.

In order to succeed, managers need to keep human relationships at the forefront in all decision making and strategy setting. Peters and Austin (1985) list four keys to excellence in business: leadership ("managing by wandering around"), care of customers, constant innovation and "turned-
on" people (5). All four of these keys involve people and relationships, not only within the firm but also with others outside the firm.

Cyclomakers' managing director consciously based his management style on Peters' books¹. Many of the cost savings achieved by Cyclomakers are attributable to the good relations between Cyclomakers and its suppliers, employees and customers. The overall emphasis of management on the human elements of the business has strengthened Cyclomakers' competitive position, resulting in a turn-around from a loss-making small firm in a vulnerable position to a growing, successful company.

2. Relevant accounting

The second principle espoused by Cyclomakers is that of adopting accounting methods and emphases appropriate for the development and realisation of the strategies of one's own firm.

In every introductory course in management accounting there is a section covering the concept of "relevant costing", which is used to decide the costs relevant to the several alternatives being considered. The principle which I have called "relevant accounting" is an extension of the idea of relevant costing: deciding which management accounting techniques are relevant to the strategic positioning and decision-making of a particular firm.

The relevant techniques chosen may not be the most recently developed ones. A management accounting technique that has been promoted

¹ Peters and Waterman (1982), Peters and Austin (1985), and Peters (1987)
extensively in recent years is Activity Based Costing (ABC), with a particular emphasis on assigning overhead costs to products on a logical basis. At Cylcemakers, though, overhead cost is such a small percentage of total cost that no attempt is made to assign overhead cost to products. Only direct cost is used.

Variable costing was chosen as being more relevant to the make-or-buy decisions for which product costing information was mainly used. Variable costing also enabled management at Cylcemakers to concentrate on the two aspects of product cost thought to be more relevant, namely direct material and labour costs. As a result, they have successfully developed a costing system that focuses attention on reducing these costs, enabling them to gauge how successfully cost reduction is being achieved.

The use of traditional management accounting techniques would not have revealed many of the cost reducing opportunities exploited by Cylcemakers. For example, relocating the warehouse from New Plymouth to Timaru allowed Cylcemakers to save on freight costs and provide parts more quickly. Traditional variance analysis of manufacturing costs, with its focus on internal costs, would not have revealed this opportunity!

3. **Attention to non-financial matters**

The third principle that can be extracted from this case study is that of paying attention to non-financial matters, such as quality, service and work-force involvement.
For example, having decided that quality was an integral part of its image, Cyclemakers developed ways to increase and measure the quality of its goods and services. Simultaneously, ways of reducing the cost of quality were found. Checking manufacturing quality at each stage in the process requires minimal accounting records, so reducing costs, while providing the benefits of timeliness, and high staff morale and responsibility. Using air-freight enables quality of service, while exploiting the location reduces the cost of speedy service.

These *principles*, rather than the *particulars* of Cyclemakers' management accounting system, may be relevant to many small firms facing important strategic decisions in the changing manufacturing environment.

**C. Generalisability**

Lee (1989), applying the requirements of natural science to case studies, notes that "even though the observations in a particular ... case study are non-replicable, the case study's findings (that a particular theory is confirmed or disconfirmed) would be replicable" (41). The findings of this case study of Cyclemakers Group (NZ) Ltd confirm my initial thesis that management accounting systems need to adapt to the changing manufacturing environment.

"Generalizability is a quality describing a theory that has been tested and confirmed in a variety of situations, whether such testing is conducted through case research, laboratory experiments, statistical experiments, or natural experiments" (Lee (1989): 41). Further case studies of other
manufacturing organisations would show whether or not this thesis or
theory is generalisable to other settings.

III. Further research

Two recent studies of management accounting practice, Dean et al.
(1991) in Australia and Northcott et al. (1991) in New Zealand, found
that, although firms may not be completely satisfied with their existing
management accounting systems, they are slow to change to systems
suggested by academic literature, such as activity based costing. The
authors of those studies have suggested that this is attributable to a lack
of knowledge of how to use the various techniques promoted by
academics.

However, I consider that firms should not attempt to apply every
 technique in management accounting courses. Firms should choose
those parts of management accounting that suit their particular business
and business strategy.

The recent literature indicates that the manufacturing and business
environment has undergone dramatic changes in the last two decades.
Many academics are calling for changes in management accounting to
support these environmental changes. However, I believe this may be a
similar case to that observed in the nineteenth century, when firms
developed and used cost accounting as the need for it arose, without
reference to how other firms were using it. Businesses may have already
adapted their management accounting systems to the environmental
changes, choosing to use, develop and add to some aspects of
management accounting that are applicable to their particular
businesses, while ignoring aspects that are not helpful or not providing the right sort of information.

The general application of my original thesis could be tested and confirmed further by conducting case studies in other organisations. As Kaplan (1986a) says, accounting academics need to go out into organisations and see what they are actually doing (430).


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