5 Product and Customer Profitability

CHAPTER CONTENTS

INTRODUCTION

In this chapter we reflect upon some of the failures of financial accounting systems and their implications for management decision-making. This leads us to consider alternative measurement systems in the evaluation of both product and customer profitability. The chapter concludes with a wider consideration of 'customer' issues, which embraces some of the most recent empirical research in the area. Again we conclude that traditional financial accounting measures are flawed, potentially resulting in a dysfunctional allocation of resources.

ACCOUNTING SYSTEM IMPLICATIONS

Strategic management accounting provides us with a decision-useful information base, and the foregoing SWOT analysis is essential to a fundamental reappraisal of a company's present and future position. Most of the recent developments in management accounting are best considered under the umbrella of strategic management accounting, as methods and philosophies which help us to improve the information base and develop strategies which are consistent with the overall thrust of management strategies. These tools include:

- *activity-based costing* – the recognition of activities and the identification of *drivers* which cause costs to be incurred;
- *target costing* – an activity aimed at reducing the life-cycle costs of new products;
- *total quality management* – a process of continuous improvement seeking to identify and rectify operational deficiencies;

- *value-added management* – a focus on zero defects in order to eliminate waste and non-value-adding processes from operations;
- *non-financial indicators* – an awareness of the importance of non-monetary outcomes and their integration with traditional financial data sets;
- *the balanced scorecard* – a combination of financial and non-financial measures to give a balanced impression of overall performance;
- *theory of constraints* – a focus on production bottlenecks which targets the single most binding constraint for remedial action.

These are important developments; each of the succeeding chapters will discuss in detail the benefits provided by each of these sub-tools of SMA. First, however, we will consider their direct impact on product and customer profitability.

PRODUCT PROFITABILITY

A number of surveys have repeatedly suggested that manufacturers are unaware of the relative profitability attributable to individual products because they have unreliable information relating to product costs. This lack of reliable information is largely attributable to two factors:

- the incorrect allocation of overhead costs to products; and
- an over-reliance on financial reporting measures for internal management decisions.

The result is an information base which makes cost control difficult and decisions on pricing and product mix unsound.

The dangers of using financial accounting measures for management decision-making have already been addressed, but the problems of managing overhead costs require further discussion. We need to avoid the worst-case scenario in which the application of rigid but foolish rules for the allocation of overhead costs to products result in profitable products being eliminated from the mix and unprofitable products remaining undercosted.

It is a relatively simple process to trace direct material and labour costs to jobs and processes, but manufacturing overheads are not so easily traced because they may bear no obvious relationship to individual units of product. However, some assignment of overheads to products must be made in order to have a complete picture of cost occurrence. The assignment is made via a volume-based activity base (or cost driver), ideally so that products which cause large amounts of overhead costs also require large amounts of the cost driver. Such an ideal ignores any strategic considerations and is based on a 'right' or 'fairest' way of doing things. Thus the allocation of maintenance costs might be made on equipment usage even though a strategic goal of the enterprise might be to encourage innovation and technological leadership. In practice, many different bases are possible, usually based on numbers, areas, volumes, value or hours.

Absorption costing attributes all production overheads to units of output, though most systems do not attempt to allocate administration, selling or distribution overheads. However, many activities are not directly

related to production volume. Ordering, delivery, transportation, equipment set-up, machining and administration, for example, require non-volume-based cost drivers if costs are to be appropriately traced. Hence the development of activity-based costing (ABC) systems.

Survey evidence has consistently shown that the majority of manufacturing companies recover overhead costs on the basis of direct labour or machine hours, despite the declining significance of direct labour to many products and services. The continued allocation of costs on such a basis is wholly inadequate for product costing purposes and can only be justified if it meets strategic considerations.

If we are to believe everything we read in the management accounting literature, then ABC is either a revolutionary tool which will solve all of our problems if we are prepared to abandon our traditional and misguided ways; or it is nothing new, being a repackaged version of absorption costing. In practice, it is probably neither – but, by considering the insights provided by ABC alongside other innovations, we have a potentially powerful set of tools.

ABC came to prominence as an alternative tool at a time where there was widespread concern that traditional methods of allocating overhead costs might be providing misleading product cost information. The basic elements of traditional costing systems have been around for a very long time, as Table 2.1 indicates. The fear is that technological advances have rendered some aspects of these systems redundant, particularly the treatment of non-volume-related overhead costs. ABC recognizes that many significant overheads are related to activities which are independent of volume and seeks to identify those cost drivers which consume resources prior to the determination of process and product costs. The fundamentals of ABC are not complex and might be illustrated by the perennial restaurant problem – how to average the bill while still maintaining equity (see Table 5.1).

In this example, courses and covers equal activities and products. The use of averaging procedures demonstrates how some individuals or products are undercosted. It also highlights significant differences in the consumption of resources by different courses or activities. The message is simple; the use of averages smoothes out the variations which we must recognize if we are to cost products properly.

TABLE 5.1

The Mediterranean restaurant example

	Starter (£)	Main course (£)	Dessert (£)	Drinks (£)	Total (£)
Alan	10	15	7	4	36
Brian	0	12	8	8	28
Carmen	15	12	0	14	41
Dallas	14	14	14	8	50
Edward	21	17	11	16	65
Total	60	70	40	50	220
Average	12	14	8	10	44

The pioneering work of Kaplan, Johnson and Cooper has generated much activity among management accountants with a common concern about how traditional internal accounting systems support advanced manufacturing strategies. The abandonment of traditional volume-related absorption costing bases for product costing leads to the inclusion of non-production overheads in activity-based analysis.

Following Kaplan, design, engineering, servicing, production, distribution, marketing and after-sales service are all considered relevant activities. Only excess capacity costs and research and development costs are excluded – respectively being treated as period costs and asset capitalization – on the grounds that they would introduce unnecessary distortion.

Many overheads typically classified as fixed costs under a traditional system are, in fact, variable in response to activity-based changes. Purchasing, scheduling and set-up costs are instances of these. The essential characteristic of an ABC system is thus the differentiation between volume-driven costs and non-volume (activity-driven) costs. Direct costs (labour and material) are not normally a problem in this respect, but overhead costs necessitate some assumptions before they can be allocated to individual products. This is especially true where no volume-based relationship can be established. The detailed benefits and limitations provided by ABC systems are considered in more detail in Chapter 6.

No single adaptation of our present accounting systems can hope to solve all of our problems. The improvement of existing systems is essential to allow better performance measurement and improved management reporting. ABC serves a purpose in this context in that, at the very least, it forces us to look at alternatives and to recognize deficiencies in the way in which we currently do things. By applying the wider philosophies implicit in ABC, rather than rigidly applying its techniques, we can reap some real benefits. However, survey evidence (e.g., Chenhall and Langfield-Smith, 1998) consistently shows a low take-up of new management accounting initiatives (including ABC), suggesting that potential users may consider that the costs of implementation (financial and non-financial) exceed the expected benefits.

CUSTOMER PROFITABILITY

The recent innovations in management accounting have emphasized the importance of a customer focus and of remaining competitive through satisfying customer needs. In so doing, they have largely overlooked the complementary requirement that customers satisfy the strategic needs of the supplier. Customer profitability analysis (CPA) is a useful tool for the evaluation of the portfolio of customer profiles.

There is a danger that the dual focus of customer satisfaction and product costing pursued by TQM and ABC may unnecessarily divert attention from strategic considerations. The resultant attention to customer requirements and product profitability may mean that we fail to question the strategic importance of the product, who buys it, and the manner in which customers satisfy the company's goals. In some circumstances customer profitability, rather than product profitability, may be a more appropriate focus.

Companies frequently fail to undertake the detailed analysis of customers and associated service–cost differences. Such an analysis may be justified if:

- the cost of obtaining and maintaining information is not excessive; and
- the information generated is useful in the making of strategic decisions.

Analysis of the revenue streams generated by customers, relative to their service costs, may lead to some customers being eliminated from the business or, at least, a change in the way in which resources are allocated between customers.

Kaplan (1992) discusses three types of potentially unprofitable customer that might be retained:

- new and growing customers, who promise profitable business in the future and who may provide a stepping-stone for penetrating lucrative new markets;
- customers providing qualitative rather than financial benefits – these would include customers at the leading edge in the development of new markets who provide valuable insights into likely trends in consumer demand;
- customers providing increased credibility because of their status as recognized leaders in their markets or fields of expertise.

Despite the potential strategic advantages of a continuing trading relationship with such customers, their lack of current profitability must be balanced against the likely future benefits and the inherent risks of failure, both quantifiable.

What we must avoid is any attempt to apportion total costs over all customer groups. The consequential effects of doing so, should we choose to drop a customer and subsequently respread the costs over the remaining customers, are potentially ludicrous. We might find ourselves in the position of continuing to drop customers and respread costs until no customers remain. We should only attempt to differentiate, say, senior management costs and ordering costs between customers if there are significant discrepancies between customers. This can be illustrated by a simplified example similar to that employed by Robin Cooper in his classic Camelback Communications case study on product profitability (R. Cooper, 1985).

Suppose we have four products (A, B, C and D) utilizing the same equipment and each costed on the basis of materials plus labour plus allocated overheads. Overheads are allocated on the basis of direct labour hours and prices are established through reference to industry standards. The company looks to price with a 40% mark-up, but if costs are too high to allow this it is prepared to tolerate a minimum 25% mark-up. Products which cannot yield a 25% mark-up are eliminated from the product mix.

If the product profile were:

Product	Mark-up (%)
A	15
B	120
C	30
D	70

then product A would be dropped and the overhead reallocated to the three remaining products. The consequences of the reallocation might well be:

Product	Mark-up (%)
B	90
C	20
D	60

Product C would now fail the mark-up yardstick and be dropped from the product mix. Overheads reallocated over the two remaining products would increase product costs so that:

Product	Mark-up (%)
B	70
D	15

Product D is now also dropped and then all the overheads allocated to product B. The product B mark-up then fails to meet the 25% requirement and it is dropped too! The company has now dropped all of its products! The case illustrates the lunacy of charging surplus capacity to products, even where changes in product mix have no bearing on the production economies of the particular product. When combined with a rigid rule to determine the optimum product combination this lunacy is further compounded, resulting in the nonsense of successive product elimination.

While the TQM philosophy promotes competition based on the provision of customer service, we have to be aware that a diverse customer base will consume resources. Current management accounting practice will usually be to classify customer-related costs as period expenses, and even ABC systems will not usually analyse cost drivers in these areas, despite the likelihood of their not being volume-dependent. Sophisticated ABC systems may manage more effectively, depending on their objectives and the nature of the product. Where their objective is to determine product profitability, then the cost drivers selected are likely to be quite different from those selected for a customer-related resource consumption analysis. Distribution costs, in a mass-manufacturing environment for example, might be assigned to customers based on distance travelled, but where product profitability is the ultimate objective we cannot expect there to be a direct linear relationship between profits and distance. Large custom-made orders and the associated delivery costs can be attributed directly to the customer, but, where the orders are mass-produced, activity-based analysis makes it much more difficult to assign costs to customers.

The elimination of non-value-adding, customer-related expenses is best approached by developing a matrix comparing customer types and expense types. Table 5.2 illustrates such a matrix. We wish to identify customer-specific expenses. In order to do so we must be aware of those which are necessarily linked to a particular market or a particular distribution channel, which we may not be able to avoid by eliminating a particular customer.

Customers might be positioned in the wholesale, retail or industrial markets, each with different expectations of the service to be provided by a supplier. Similarly, distribution channel differences may be associated with large discrepancies in sales; the market may demand a direct sales

TABLE 5.2

Customer expense matrix

	Resource dependency		
	Customer specific	Market specific	Distribution channel specific
Purchasing patterns			
Delivery policy			
Accounting procedures			
Inventory holding			

approach employing agents and representatives or, alternatively, telephone sales or mail order by catalogue.

Customer-driven activities and associated expenses can be conveniently examined in some detail under a number of expense categories. The first category, *purchasing patterns*, includes:

- the cost of volume discounts;
- the size of agents' commissions;
- the cost of field service to maintain products distributed by customers – Ward (1992) observes that it might be possible to differentiate between the cost of those sales calls devoted to the maintenance of existing customers and those used to generate new customers;
- the cost of sales support – this might vary from the extremes of one customer requiring no visits at all, to one who requires not only frequent calls but also assistance with administrative operations, in-store displays, the physical merchandising of goods and the regular monitoring of inventory levels.

The associated on-costs of employing sales staff and motor vehicles is an important consideration here. They would embrace all vehicle operating costs, as well as superannuation, fringe benefits and payroll tax, holiday and long-service leave entitlements, workers' compensation and insurance. In practice, several of these items may conveniently be omitted from a customer profitability analysis because of the complex analysis required to divide general ledger amounts between the activities of different salespersons. The second category, *delivery policy*, includes:

- distribution expenses;
- shipping frequencies; and
- freight fleet requirements.

Profitable customers would be located close by and employ standard packaging and barcode readings, while less profitable customers would require unique, capacity-consuming packaging and delivery. *Accounting procedures* include:

- sales credits;
- settlement discount costs;

- debtor collection support; and
- order processing – this might vary between one customer who maintains large, regular bulk orders and one who requires immediate crisis deliveries resulting from stock-outs, but whose order details are so complex and ambiguous that multiple queries result before the transaction can be completed. Finally, *Inventory holding* includes:

- inventory support;
- distribution support; and
- holding requirements, which may vary enormously depending on the product range and the extent to which just-in-time (JIT) scheduling procedures have been adopted.

While product profitability analysis emphasizes the identification of undercosted products, resulting from low volumes, high wastage and high levels of rework, customer profitability analysis aims to identify low-volume and low-margin customers the servicing of whose orders requires a disproportionate amount of time and expense. Recognizing the 80–20 rule is not enough; we need to quantify the extent to which 80% of costs are attributable to 20% of customers, identify the customers and eliminate or modify the service provided to the unprofitable ones. We must recognize that no two customers are the same, even when they are in receipt of an identical product. Profitability between customers varies greatly because of the service commitment, but conventional accounting methods rarely reveal such differences.

The incremental costs of customer service and price elasticities of demand must be examined in order to establish a customer loyalty profile. What will customers bear? How sensitive are they to prices or to the levels of service provided? How will our internal costs change in response to variations in the level of service provided? A fundamental analysis of customers, performed properly, will answer these questions and provide the information base to support strategic decisions relating to the customer base.

Activity drivers will assist in the assignment of activity costs to customers where arbitrary allocation methods would otherwise be employed. Thus, distribution costs might be assigned on a zone basis dependent on the delivery destination activity, rather than being spread across all customers in an arbitrary fashion.

Hart and Smith (1998), exploring customer profitability in the banking sector, note that traditional methods of costing banking products have failed to allocate individual resources to either products or accounts in a satisfactory manner; they suggest that the inherent variation in 'number of accounts' or 'number of transactions', when these are used as cost drivers, makes the calculation basis insufficiently accurate for customer profitability measurement.

The need for a strategic approach is paramount. We must not be tempted to pigeon-hole TQM, ABC or CPA and examine each in a blinkered fashion. They must be employed simultaneously so that all aspects of customer focus can be considered, with projected costs and revenues appropriately quantified.

The following case study highlights the differences in profitability possible when different customers are in receipt of essentially the same product. It provides the opportunity for developing a customer portfolio, along BCG matrix lines, as part of a customer profitability analysis.

CASE STUDY

Derrick's Ice-Cream: A customer profitability analysis

Derrick's Ice-Cream is located in modern premises and manufactures and distributes 30 different ice-cream product lines from its suburban base. The products are distributed by Derrick's own fleet of refrigerated trucks to six major wholesale distributors.

Annual sales are currently around the £10 million level, distributed among the wholesalers as indicated in Table 5.3. Derrick's controls about 35% of its metropolitan market, but this shrinks to less than 10% in outlying areas where there are many small competitors.

Derrick's will usually hold up to four weeks of stock in its central cold stores to meet the distribution requirements of its six major customers. The cold stores cost approximately £500,000 p.a. to run, but excess capacity can be hired out to other non-competing firms. This becomes especially important during the winter months when consumer demand is considerably reduced. Even during the summer months demand is highly sensitive to temperature; Derrick's, therefore, bases its sales on a deseasonalized forecast, related to increases in disposable real incomes, and hopes that stocks will be adequate to cope with sequences of extreme high temperatures.

The raw materials – vegetable oil, butter, milk and sugar – are relatively inexpensive. They arrive at Derrick's by tanker and are stored on site. Ice-cream is then manufactured in two major processes, mixing and forming, followed by packaging to meet the specific customer requirements.

The requirements of meeting the, sometimes uniquely specific, requirements of customers have been causing Derrick's management some serious headaches recently. They recognize the importance of a client-focused approach to marketing and distribution, but are beginning to feel that they are being exploited by some customers who are never satisfied with the level of service provided, however extensive it may be. The satisfaction of customer whims is beginning to cost big money, so Derrick's has determined to conduct a

TABLE 5.3

Market shares for six customers

Customer	% Sales
Ardron's Wafers	19
Butler Ices	12
Cahill's Cones	25
Donleavy Ices	9
England Wedges	14
Frankston Chocs	20
Others	1
	100

CASE STUDY (cont.)

detailed analysis of the customers and their varying requirements. These have been abbreviated below:

- *Ardron's Wafers* employs standard packaging and bar-code reading systems. It insists on only low discounts for volume and maintains large regular orders. Consequently its delivery requests and inventory holding requirements are highly predictable.
- *Butler Ices* is located nearly 150 miles north of Derrick's base and requires packaging which is unique to itself. Despite its distant location, it insists on free deliveries and requires large discounts for volume orders. Its internal inventory control procedures are not well developed, resulting in not uncommon requests for 'crisis' deliveries to deal with stock-outs.
- *Cahill's Cones* has the reputation of always paying on time and requiring low discounts and commissions. Its inventory holding procedures are perhaps the best in the business and it has a JIT scheduling system which is entirely compatible with Derrick's own. Deliveries require no special packaging or fleet requirements for the refrigerated vehicles.
- *Donleavy Ices* always pays late but demands all available discounts, even when strictly they are not applicable. It insists on daily deliveries, with the requirement of additional deliveries should demand merit it. It has threatened to take its business elsewhere if all its inventory holding requirements are not met in full.
- *England Wedges* relies on bulk orders which are shipped on an infrequent basis. It requires minimal volume discounts, rare visits from Derrick's personnel, and is prepared to collate sales credits and make monthly claims.
- *Frankston Chocs* is not noted for the strength of its internal organization. It is closely located to Derrick's base, but requires frequent calls which extend to assistance with administrative operations and help with the merchandising of stock and in-store displays. It initiates separate sales credits for each item of product returned and inevitably generates complex orders whose detail is unclear, so that multiple queries follow almost every transaction.

We are required to use the above information as the basis for a customer profitability analysis using the suggested framework, or a suitable alternative, in terms of purchasing patterns, delivery policy, accounting procedures and inventory holding. The analysis will then allow us to develop alternative strategies for the manner in which Derrick's might act on the outcomes.

CASE ANALYSIS

There has been surprisingly little written in the accounting literature about customer profitability analysis. In the main this has comprised exhortations in the professional journals for practitioners to pay attention to factors other than product profitability (e.g., Anandarajan and Christopher, 1987; Shapiro et al., 1987; Bellis-Jones, 1989; Smith, 1993; Connolly and Ashworth, 1994; Foster

CASE STUDY (cont.)

et al., 1996). There have been case-based approaches (notably the celebrated Kanthal case in Cooper and Kaplan, 1991), but surprisingly few empirical studies. Frameworks are established for analysis in Howell and Soucy (1990), Foster et al. (1996) and Smith and Dikolli (1995), but reports of field studies are rare (e.g., Hart and Smith, 1998; Shanahan, 2002). Thus, over a fifteen-year period, we have fewer than one major paper per year devoted to CPA, suggesting that researchers perceive product profitability to be a difficult enough issue, and that the problems associated with CPA appear insuperable. A challenge indeed for future researchers!

Analysis of the profiles of the six firms which provide Derrick's customer base allows the classification of their requirements in terms of purchasing patterns, delivery policy, accounting procedures and inventory holding. This analysis, following Smith and Dikolli (1995), is detailed in Table 5.4. The Howell and Soucy (1990) framework is similar, but more detailed, and suggests the measurement of a number of expense categories not detailed in the case: cost of volume discounts; size of agents' commissions; cost of product maintenance; cost of sales support; distribution expenses; shipping frequencies; freight fleet requirements; sales credits; settlement discount costs; debtor collection support; order processing; inventory support; distribution support; and holding requirements.

The narrative descriptions provide a qualitative 'feel' for the relative costs of each of the customers. This 'feel' can be quantified by allocating a numerical indicator to each of the attributes; although this approach can only be approximate, and is limited by the availability of the case information, it does facilitate the ranking of the customers in terms of the costs of providing service. If we allocate a score of +5 where a customer has the best possible attributes, of 0 where the customer is neutral, or no information is available, and of –5 where the customer has the worst possible attributes, then by rating each customer on each attribute between these limits we can generate a composite cost index. A typical response is detailed in Table 5.5.

The fact that we have no information available in some categories is problematical, as is the judgement required in assigning a particular numerical score. We are in a decision-making under uncertainty scenario here which requires a trade-off between reliability and relevance: we know that our scores cannot be 'right' in an absolute sense, but if the approximations still allow us to make useful inferences then they will have been worthwhile.

Following Kotler (1994: 70) the relative profitability of each customer is measured in terms of its contribution to Derrick by way of sales. This is calculated as

$$\frac{\%\ \text{Market share}}{\%\ \text{Share of market leader}}$$

and is fractional for all customers, except the market leader, calculated as

$$\frac{\%\ \text{Market share}}{\%\ \text{Share of closest competitor}}.$$

TABLE 5.4

Derrick's Ice-Cream customer requirements

	Ardron's Wafers	Butler Ices	Cahill's Cones	Donleavy Ices	England Wedges	Frankston Chocs
Purchasing patterns	• require low discounts on volume orders	• require large discounts for volume orders	• require low discounts and commissions	• demand available discount, even if not applicable	• require rare visits from personnel	• require frequent calls extending to assistance: with admin., help in store
Delivery policy	• delivery requests predictable • standard packaging • maintain large regular order	• 150 miles away • unique packaging • insist on free delivery • 'crisis' deliveries	• no special fleet requirements for refrigerated vehicles • JIT scheduling • no special packaging	• insist on daily deliveries, additional deliveries if demanded	• infrequent shipping • minimal volume discounts	• close location to base • require frequent assistance
Accounting procedures	• no information available	• poorly developed internal control procedures	• reputation for paying on time • 'best in the business' accounting procedures	• demand all settlement discounts, even if not applicable • always pay late	• collate sales credits and make monthly claims	• initiates separate sales credits for each item returned • multiple queries before each transaction can be completed
Inventory holding	• predictable delivery requests	• 'crisis' deliveries • insist on free delivery to remote location	• compatible scheduling systems	• will take business elsewhere if requirements are unmet	• infrequent shipping of bulk orders	• require frequent assistance • weak internal organization

CASE STUDY (cont.)

The results are detailed in Table 5.6 after converting to the log format recommended by Kotler (1994).

These tables provide the data which form the basis of a BCG matrix, with relative market share on the horizontal and cost basis on the vertical, the former using a log natural transformation. The conventional axes of the BCG matrix are relative market share (as a proxy for cash inflow) and market growth (as a proxy for cash outflow); here cost is substituted for the market growth variable. The two axes are represented together in Figure 5.1, with grid lines positioned at $Y = 0$ (a neutral cost position) and $X = 1$ (i.e. $\ln X = 0$) to identify market leaders.

The use of market share relativities, relative to the performance of the industry leader, and a log scale on the horizontal causes some problems in practice. Only the industry leader will have a 'relative

TABLE 5.5

Customer requirements index

	Customer					
Criteria	**Ardron's**	**Butler**	**Cahill's**	**Donleavy**	**England**	**Frankson**
Purchasing patterns:						
• Discount required	4	–3	5	–5	4	0
• Quality of organization	5	–2	5	–1	5	–5
Delivery policy:						
• Delivery distance, etc.	0	–5	0	0	0	5
• Unique packaging required	5	–5	5	0	0	0
• Urgent order frequency	5	–3	4	–4	5	–3
Accounting procedures:						
• Payment record	0	0	5	–5	0	0
• Credit returns handling	0	0	0	0	5	–5
Inventory holding:						
• Volume of sales	4	2	5	1	3	4
• Order frequency	5	3	3	–5	5	–3
Total	+28	–13	+32	–19	+27	–7

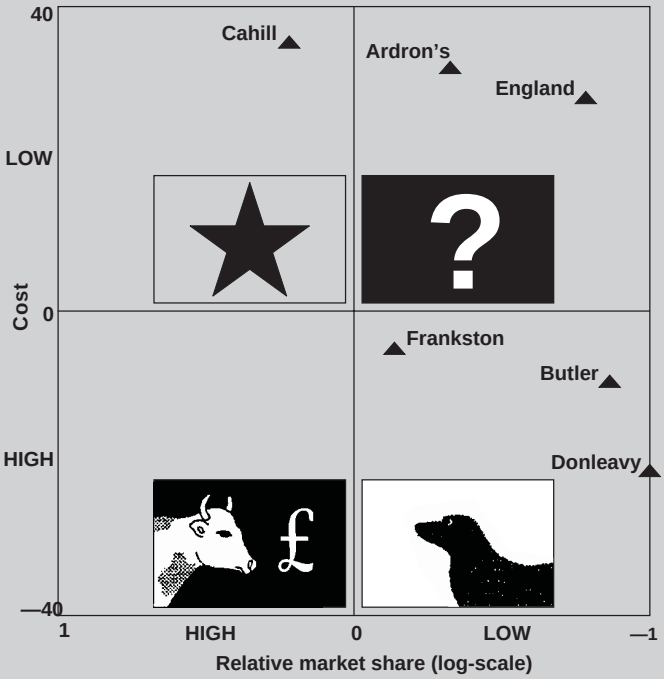
TABLE 5.6

Log transformations of relative market share

Customer	**Market share**	**Relative market share (*M*)**	**ln(*M*)**
Ardron's Wafers	19	0.76	–0.27
Butler Ices	12	0.48	–0.73
Cahill's Cones	25	1.25	0.22
Donleavy Ices	9	0.36	–1.02
England Wedges	14	0.56	–0.58
Frankston Chocs	20	0.80	–0.22

CASE STUDY (cont.)

FIGURE 5.1



BCG matrix for customer profitability portfolio

market share (*M*)' greater than one, so all other competitors will have negative log scores on the horizontal axis. Consequently, only one company can appear to the left of the central vertical, meaning that we can have a 'star' company or a 'cash cow' company, depending on cost levels, but not both! Alternatives to this standard Kotler (1994) approach might, therefore, be explored in practice.

The approximations in the data-gathering make it difficult to argue a unique correspondence of company to BCG category, even though the relative positioning of the companies is in less doubt. However, it is possible to demonstrate the robustness of outcomes by questioning some of the assumptions and evaluating their sensitivity:

- 'Volume of sales' is represented above within a simple 1 to 5 ranking. We might argue that consistency demands a ranking over the full range of –5 to +5, which would produce different absolute scores. Thus if the complete eleven-point ranking were applied to sales over the range 0–25% we would produce the version A scores of Table 5.7; if the ranking were applied to the sales of the six major companies (i.e., 9–25%) we would produce the version B scores.
- The 'order frequency' category of 'inventory holding' also suggests alternatives. While the extremes ('infrequent shipping' for England, and 'daily deliveries' for Donleavy) are straightforward,

CASE STUDY (cont.)

TABLE 5.7

Alternative scores for 'volume of sales' category

	Version A	Version B
Ardron	2.6	1.25
Butler	–0.2	–3.125
Cahill	5	5
Donleavy	–1.4	–5
England	0.6	–1.875
Frankston	3	1.875

TABLE 5.8

Alternative scores for 'order frequency' category

	Version C	Version D
Ardron	5	4
Butler	–5	–3
Cahill	5	0
Donleavy	–5	–5
England	5	5
Frankston	–5	–5

it is not absolutely clear what the implications for delivery frequencies would be for 'predictable requests' (Ardron), 'crisis deliveries' (Butler) or 'JIT scheduling' (Cahill) – the latter could potentially be demanding despite its apparent compatibility with Derrick's systems. The alternatives of Table 5.8 are thus generated.

Combining the A–D alternatives of Tables 5.7 and 5.8 with the more certain elements of the Table 5.4 matrix of customer requirements generates four more sets of scores, presented in Table 5.9.

Table 5.10 compares the final scores for the original matrix and the four alternatives and highlights their close similarities. The split between positive scores (ACE) and negative scores (BDF) is common to all the alternatives. CAE is the consistent order for the 'best' performers, except where pessimistic assumptions are made regarding the impact of Cahill's JIT scheduling. FDB is the consistent order for the 'poor' performers except where optimistic assumptions are made regarding Butler's order frequency. Other interpretations are possible, but they are unlikely to produce a radical reordering of company performance.

In the light of the similarity of these alternative profiles, the more important issue becomes the recommendations we might make to improve Derrick's position.

The BCG matrix highlights the position of Butler Ices and Donleavy's Ices as 'dogs', who are very expensive to service but

TABLE 5.9

Alternative customer requirements indices

	Alternative 1						Alternative 2						Alternative 3						Alternative 4					
	A	**B**	**C**	**D**	**E**	**F**	**A**	**B**	**C**	**D**	**E**	**F**	**A**	**B**	**C**	**D**	**E**	**F**	**A**	**B**	**C**	**D**	**E**	**F**
Purchasing :	4	–4	4	–5	0	0	4	–4	4	–5	0	0	4	–4	4	–5	0	0	4	–4	4	–5	0	0
Discount	4	–4	4	–5	0	0	4	–4	4	–5	0	0	4	–4	4	–5	0	0	4	–4	4	–5	0	0
Organization quality	4	–5	5	–4	5	–5	4	–5	5	–4	5	–5	4	–5	5	–4	5	–5	4	–5	5	–4	5	–5
Delivery :																								
Distance	5	–5	0	0	0	0	5	–5	0	0	0	0	5	–5	0	0	0	0	5	–5	0	0	0	0
Packaging	5	–5	5	0	0	0	5	–5	5	0	0	0	5	–5	5	0	0	0	5	–5	5	0	0	0
Urgency	5	–5	5	–4	5	–5	5	–5	5	–4	5	–5	5	–5	5	–4	5	–5	5	–5	5	–4	5	–5
Accounting:																								
Records	0	0	5	–5	0	0	0	0	5	–5	0	0	0	0	5	–5	0	0	0	0	5	–5	0	0
Credit returns	0	0	0	0	5	–5	0	0	0	0	5	–5	0	0	0	0	5	–5	0	0	0	0	5	–5
Inventory :																								
Sales volume	2.6	–0.2	5	–1.4	0.6	3	1.25	–3.125	5	–5	–1.875	1.875	2.6	–0.2	55	–1.4	0.6	3	1.25	–3.125	5	–5	–1.875	1.875
Order frequency	5	–5	5	–5	5	–5	4	–3	0	–5	5	–5	4	0	0	–5	5	–5	5	–5	5	–5	5	–5
Total	**30.6**	**–29.2**	**34**	**–24.4**	**20.6**	**–17**	**28.25**	**–30.12**	**29**	**–28**	**18.125**	**–18.125**	**29.6**	**–27.2**	**29**	**–24.4**	**20.6**	**–17**	**29.25**	**–32.125**	**34**	**–28**	**18.125**	**–18.125**

TABLE 5.10

Comparative consumer requirements index scores

	Ardron's	**Butler**	**Cahill's**	**Donleavy**	**England**	**Frankston**	**ORDER**
Original	28	–13	32	–19	27	–7	(CAEFBD)
Alternative 1	30.6	–29.2	34	–24.4	20.6	–17	(CAEFDB)
Alternative 2	28.25	–30.125	29	–28	18.125	–18.125	(CAEFDB)
Alternative 3	29.6	–27.2	29	–24.4	20.6	–17	(ACEFDB)
Alternative 4	29.25	–32.125	34	–28	18.125	–18.125	(CAEFDB)

CASE STUDY (cont.)

who, nevertheless, are together responsible for over £2 million of annual sales. Change strategies must be introduced, but with a good deal of management sensitivity, especially in the short term. A sympathetic approach, and one which recognizes the mutual benefits of changes in internal systems, should be pursued. Priority actions revolve around making both of these customers less expensive while, if possible, maintaining their business. In the case of Butler Ices, strategies might include:

- imposing charges for its unique packaging requirements;
- restricting free deliveries to fewer visits – those on the regular runs;
- imposing punitive charges for crisis deliveries; and
- offering assistance to reorganize inventory control procedures – this offer might make the first three strategies more palatable to Butler.

For Donleavy's Ices, strategies could similarly include:

- strict adherence to the discount availability mechanism to discourage consistent late payment;
- restricting the availability of free deliveries;
- imposing punitive charges for crisis deliveries;
- tighter specification of mutual responsibilities, with the clear acknowledgement that Derrick's is prepared to sacrifice Donleavy's business in the absence of improved co-operation and better management controls.

Frankston Chocs is a more marginal 'dog' and offers significant improvement opportunities. It is too big a customer for Derrick's to risk its loss (annual sales of £2 million), but its accounting and merchandising procedures are expensive and need attention. Derrick's might explore closer links with Frankston in order to exploit its future potential. At the very least it might offer assistance to reorganize inventory control procedures, and ordering and credit procedures, with the ultimate aim of converting it to '?' status.

Cahill's Cones is the star performer in Derrick's customer portfolio. As well as being the largest, it makes the fewest demands on Derrick's organization. It is well organized and progressive, as reflected by its adoption of the latest management accounting techniques. It might also provide a suitable joint-venture partner in the development of new outlets in areas where Derrick's currently exerts minimal influence.

Ardron's Wafers and *England Wedges* similarly make few demands on Derrick's, being reliable and regular in their requirements. Although individually less important than Cahill, and accorded '?' status, together they account for one-third of Derrick's sales.

The BCG matrix gives a simple (sometimes simplistic) overview of the current relativities in Derrick's portfolio and limitations arise in its implementation when trying to devise strict dividing lines. As we have noted, the textbook analysis dictates that there will

CASE STUDY (cont.)

only be one market leader, that is, only one company assigned to the left-hand quadrants, and therefore only one company which is termed a 'star' or a 'cash cow' – with the requirements score determining its precise position. However, it forces us to take an overview of all customers and highlights individual contributions.

The case seeks to highlight that conventional accounting methods will fail to reveal differences in costs attributable to different customers: customer-related costs will usually be treated as period expenses, and even traditional ABC methods may have difficulty in analysing cost drivers in these areas, despite the likelihood of their being non-volume-related, because of measurement issues. Whereas product profitability emphasizes the impact of undercosted products resulting from low volumes, high wastage rates and high levels of rework, customer profitability seeks to pinpoint low-volume/low-margin customers who consume more than proportionate expense in servicing orders. The aim is to identify problem customers and eliminate or modify the service provided to unprofitable ones.

CUSTOMER RELATIONSHIP MANAGEMENT

The gap between theory and practice, and the empirical evidence, much of it conflicting, make customer relationships an important focus. Despite what financial accounting may tell us, customer value is important, and the customer should be viewed as an asset to the firm (e.g., Berger et al., 2002). Empirical studies have shown market-based assets (e.g., customer asset value, customer relationships and channel relationships) to be positively associated with the financial performance (notably shareholder value) of participant firms (e.g., Sheth and Sharma, 2001; Srivastava et al., 1998; Ward and Ryals, 2001; Hogan et al., 2002). Because customers play such an important role in the value of a firm, increasing the value of customers is consistent with a goal of maximizing shareholder wealth, but to do so we must be able to measure the value of customers in a reliable manner. CPA can be employed, but where contractual relationships with customers exist (e.g., in financial services or banking operations) customer lifetime value analysis is more likely to be used than CPA (e.g., Jain and Singh, 2002; Gurau and Ranchhod, 2002).

Customer relationship management (CRM) aims to align customer strategy and business processes in order to improve customer loyalty and, hopefully, profitability (Rigby et al., 2002). CRM impacts on both customer satisfaction and shareholder value by providing customers with consistent, high-quality experiences (Kale, 2003). It seeks to identify a company's most valuable customers and to increase customer loyalty by tailoring products and services to meet customer requirements. In doing so it tries to control the costs of servicing such customers to improve both retention and acquisition prospects. The focus of CRM is on data and measurement, and concerns the organization's ability to leverage customer data innovatively and efficiently to establish an effective relationship between customers and firms.

However, Rigby et al. (2002) also report on the failure of CRM profits, with the anticipated benefits not achieved: one in five executives had abandoned CRM altogether, saying that it drove away valuable customers. Some reasons (McKim, 2002; Kale, 2003) causing firms to abandon implementation include:

- lack of preparedness;
- failure to accurately specify business problems;
- lack of a common definition of CRM;
- absence of appropriate measurement; and
- breakdown of communication in customer relationships.

While most of these points are common to implementation failures and the abandonment of business initiatives in general (see Rogers, 1995), the measurement issue is one that arises less rarely elsewhere.

Customer satisfaction

Satisfaction is defined in terms of customer evaluation of a product or service as to whether that product or service has met customer needs and expectations (e.g., Bitner et al., 1997). Jones and Sasser (1995) highlight four main elements that affect customer satisfaction:

- the basic elements of the product or service that customers expect all providers to deliver;
- the existence of basic support services, such as customer assistance and order tracking;
- a process for dealing with complaints and providing satisfactory solutions to 'bad' customer experiences;
- memorable service that exceeds the customer's expectations.

Levels of satisfaction will vary according to the specific circumstances of the transaction, with customers liable to be influenced in their evaluation by relatively small events surrounding the delivery of the product or service. The measurement of satisfaction will also be influenced by variations in the scales used to collect the data, as well as the data collection methods (Wilson, 2002).

Customer loyalty

Customer loyalty is usually the focus of the development of retention strategies. Many firms believe benefits can be generated from long-life customers, such as lower service costs, an ability to charge high prices and the power of 'word of mouth' of loyal customers (Reichheld and Sasser, 1990). However, Reinartz and Kumar (2000) provide empirical evidence that casts doubt on all these assertions. They show that:

- long-life customers are not necessarily profitable in a non-contractual setting;
- the lower service cost rule is industry-specific;
- the relationship between loyalty and higher prices is not strong;
- the power of 'word of mouth' is difficult to measure without reference to both attitudinal and behavioural factors.

Customer equity

Customer equity is defined by Dorsch and Carlson (1996) as the value of the complete set of resources, tangible (e.g., money) and intangible (e.g., knowledge and commitment), that customers invest in a firm. Since Blattberg and Deighton (1996) coined the term 'customer equity', many authors have advocated growing customer equity as a means of growing shareholder value (Hogan et al., 2002; Fornell, 2000). Dorsch et al. (2001) refer to customer equity management (CEM) as the management of that portfolio of resources that customers invest in their firms, and provide for the calculation of customer equity in terms of the NPV of cash flow generated from present and potential customers. This information should help managers to determine the optimal balance between acquisition and retention strategies (see Blattberg and Deighton, 1996; Blattberg et al., 2001).

In studies of large US and UK companies, respectively, Fornell (2000) and Doyle (2000) suggest that the market value of these companies is predominantly made up of intangible assets, and that customer relationships are a major feature of these intangible assets. Hogan et al. (2002) suggest that customer equity is a means of growing shareholder value, but that conventional accounting has treated marketing expenditures as costs rather than an investment in intangible assets. He emphasizes the importance of increasing the lifetime value of individual customers in a way that maximizes customer equity. Srivastava et al. (1998) emphasize that the most appropriate customer-related strategies will lead to increased customer satisfaction and loyalty and then produce a positive impact on customer equity. As long as customer equity increases, then shareholder value should increase too.

Effective CEM requires a business to identify a target customer equity profile, and to compare it with the actual customer equity profile. Any incompatibility between observed and expected profile highlights a gap in the firm's CRM practices which may occasion investment inefficiencies for the firm. Firms will wish to allocate limited resources to the most appropriate customers and to implement the management practices necessary to generate an optimum customer equity profile. Bayon et al. (2002) highlight the increasing use of CEM practices as a management tool, to influence lifetime values of current and future customers, and eventually customer equity.

The influence of customer satisfaction and customer loyalty on the profitability of the firm continues to receive a good deal of attention in the literature, though few of these examples are currently drawn from the accounting literature. Increasingly customers are being treated as assets, which can be managed and measured, despite the associated financial accounting difficulties (Blattberg et al., 2001; Berger et al., 2002). Srivastava et al. (1998) suggest that the increasing focus on the enhancement of shareholder returns has led firms to recognize that the relationship between marketing and finance must be managed systematically. Therefore, firms are taking a more customer-focused approach to their strategy formulation, instead of the traditional product-focused approach (Jain and Singh, 2002). In particular, the three customer-related measures identified above (customer satisfaction, customer loyalty and customer equity) are each deserving of more attention in the literature, and might even be addressed simultaneously to determine their impact on financial performance.

A four-pronged strategy: customer satisfaction, customer loyalty, customer profitability and customer equity

According to the concept of the service–profit chain, once customer satisfaction increases, customer loyalty must increase accordingly and then profitability increases (Heskett et al., 1994). But the empirical evidence is less convincing; the relationships between satisfaction and loyalty (Jones and Sasser, 1995), satisfaction and profitability (Scharitzer and Kollarits, 2000; Anderson et al., 1994; Ittner and Larcker, 1998a; Soderlund and Vilgon, 1999), and loyalty and profitability (Reinartz and Kumar, 2002) have been the subject of empirical investigation, but have produced conflicting outcomes.

Anderson and Sullivan (1993) and Fornell (1992) suggest that there could be a positive or negative relationship between customer satisfaction and customer loyalty. A number of alternative explanations are possible: for example, industry conditions, the regulatory environment, provider switching costs, prevailing technology and loyalty programmes might all have an impact. Some of the empirical evidence even suggests that there is no significant relationship between customer satisfaction and profitability at all (Ittner and Larcker, 1998a; Soderlund and Vilgon, 1999; Scharitzer and Kollarits, 2000; Hellier et al., 2003). As a consequence it is conceivable that some firms will be investing their limited resources in totally inappropriate (potentially unprofitable) customers. Further empirical evidence casts doubt on the commonly held belief that loyalty programmes improve profitability; Reinartz and Kumar (2002) found that in some cases a negative relationship between loyalty and profitability existed, which they explained through the existence of customers groups termed as 'barnacles' (i.e., high loyalty but low profitability) and 'butterflies' (i.e., low loyalty but potentially high profitability). These counter-intuitive empirical findings in the literature are a cause for concern and provide further motivation for a study focusing on the measurement and modelling of customer-related variables.

CRM measurement issues

Shareholder value, as the NPV of future projected cash flows, is not new to the literature (e.g., Rappaport, 1986) but has gained prominence due to the economic value-added debate. Since the inclusion of cash flow as a major variable in marketing studies the influence of marketing activities and customer relationships on shareholder value has increased (Srivastava et al., 1998, 1999). A short-term focus on accounting profits will lead to under-investment in intangible assets, such as staff, brands, and customer and supplier relationships, making a shareholder value approach increasingly important for the firm in evaluating financial performance. Additionally, since market-based assets do not normally appear on the balance sheet (on the grounds that financial accountants do not believe that their value can be measured accurately enough), they will be treated as costs rather than investment, and not be depreciated, which may lead to insufficient spending on developing brands, retaining customers and creating channel partnerships (Doyle, 2000).

Since shareholder value analysis is not based on accounting conventions, but is derived on a cash basis, it becomes a more reliable measure of financial performance when evaluating the impact of marketing assets and

customer-related strategies. Alternative indicators have been developed to evaluate shareholder value, of which undoubtedly the most popular is economic value added (Stern et al., 1996), a measure which emphasizes the residual wealth creation in a company after all costs and expenses have been charged, including the firm's cost of capital. However, empirical evidence casts doubt on the strength of the relationship between economic value added and shareholder value (e.g., Farslo et al., 2000; Abdeen and Haight, 2002; Sparling and Turvey, 2003).

Market-based assets, such as customers and distribution channels, are assets that must be cultivated over time to deliver shareholder value (e.g., Hunt and Morgan, 1995; Srivastava et al., 1998). Lusch and Harvey (1994) indicated that organizational performance is increasingly being tied to intangible assets such as corporate culture, customer relationships and brand equity, but such off-balance sheet items are difficult to measure and value. As a potential solution Srivastava et al. (1998) suggested a framework which links the contribution of market-based assets to market performance and hence financial performance. They suggest that shareholder value can be evaluated by:

- an acceleration of cash flows – since market-based assets accelerate cash flows by reducing the market penetration cycle time;
- an increase in the level of cash flows – since well-developed customer relationships will enhance cash flows by reducing working capital requirements;
- reduction in the risk associated with cash flows – since the volatility of cash flows will be reduced if the firm can retain a stable customer base, without incurring the costs of acquiring new customers, and
- the residual value of the business – since long-term customer loyalty might eventually result in a lower cost of capital and enhance the future values.

SUMMARY

This chapter has discussed some of the implications for accounting systems consequent upon technological and administrative changes within the organization. It notes that the pace of change in this regard is slow – a stark contrast from what we perceived with regard to performance measurement. Clearly the benefits from management accounting change do not match the costs, since the difficulties apparent with existing (financial accounting oriented) systems persist. The same cannot be said for performance measurement initiatives, since any improvement opportunities proffered in this regard appear to be grasped more readily. A 'product' and 'customer' focus is maintained in the chapter in readiness for the more detailed discussion of 'process' and 'people' aspects in the two succeeding chapters.