

# CHAPTER 4 - Internal analysis and resource capability audit

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# **CHAPTER 4 - Internal analysis and resource capability audit**

## **4.1 Introduction**

The internal appraisal is often referred to as a resource audit. It involves an assessment of the resources and capabilities of the organization and aids the identification of an organization's strengths and weaknesses. In so doing, it also confirms that the organization has retained the necessary core competencies required to achieve its strategy or indicates that changes need to be made to resource capabilities in response to changes in the environment. Strengths can be used to create a distinctive competence that could provide the basis of competitive advantage. Core competencies are those competencies that are essential to overall performance and success in the industry sector. In contrast, a distinctive competence is any competence that distinguishes an organization from its competitors and hence is a source of competitive advantage (Mooney, 2007).

A resource audit should not, however, be conducted in isolation from the external analysis. Many of the resources reviewed under the heading of the internal appraisal are acquired from, or feed into, elements of the task environment. This is evident in the 9Ms framework that is reviewed in this chapter. Following the 9Ms framework, which sets out the broad areas that can be considered, the chapter focuses on reviewing the main elements of the interface with the task environment covering the product life cycle and managing a portfolio of products, customer profitability analysis, the value creation system, and supplier evaluation. These are also areas where management accounting can make a significant contribution to the strategic management process. Customer profitability analysis is frequently cited as being a strategic management accounting technique. For this reason, the discussion of the technique draws more heavily on relevant research literature than the other sections. Two accounting techniques are referred to for which additional support is provided in Appendix B. These are cost-volume-profit (CVP) analysis and interpretation of financial ratios.

## **4.2 Learning outcomes**

After studying this chapter, you will be able to:

- Explain the importance of undertaking an internal analysis as part of the strategic management process

- Describe the 9Ms framework as the basis for conducting a review of an organization's capabilities and resources
- Critically evaluate the use of the product life cycle in strategic planning
- Critically evaluate and apply the use of portfolio analysis, both of products and customers
- Critically evaluate the technique of customer profitability analysis and undertake a basic analysis
- Discuss the importance of designing an appropriate value creation system as a customer-centric approach to strategic management
- Discuss the significance of supplier evaluation in the value creation system
- Undertake basic financial interpretation of ratios
- Critically evaluate the contribution that management accounting can make to the internal analysis of an organization and the management of products and customers

### 4.3 The 9Ms framework

**Active reading.** Note how the 9Ms framework provides a range of areas under which the resources and capabilities of the organization can be assessed. Think about the interdependencies of the elements and how they will all need to be consistent with the overall strategy of the organization to achieve the objectives.



**Video link** [Resource audit and the 9 Ms framework](https://www.youtube.com/watch?v=SVXrL9TqgJo)

[\[https://www.youtube.com/watch?v=SVXrL9TqgJo\]](https://www.youtube.com/watch?v=SVXrL9TqgJo)

A common framework that can be used to aid a structured review of resources and capabilities is known as the 9Ms framework. Although not strictly an academic framework, it provides a series of headings under which the entire organization can be reviewed.

- Manpower - men and women
- Management
- Money
- Makeup
- Machinery
- Methods
- Markets
- Materials
- Management information

## **Manpower - men and women**

Men and women include anything to do with human resources. It is not just about how many people are employed, but whether they have the right skill set and experience. It raises questions such as, are the recruitment and retention strategies working? Is the organization undertaking enough staff development to keep the skill base current and the staff motivated? It is essential to bear in mind that an organization obtains its human resources from its task environment, so there is a strong link between the resources and environmental trends. Certain industries require certain skills.

A key message is that the internal analysis is not undertaken in isolation and is not just about assessing the current capability but assessing the supply of, and the ability to acquire, future resources from the environment. As with most resources, their acquisition involves financial aspects where the accountant can provide expertise and assistance to the HR professional to evaluate potential strategies. For example, changes to the pay and benefits package to reward, improve retention and recruit staff, and to assess the overall impact on profitability. It is accepted that in large organizations, the HR professionals will be equipped with this expertise. Still, the accountant is a valuable resource and has an overview of the financial situation that other functional specialists may not have.

## **Management**

The element of management is not just whether the organization has a management team, but does the organization have an appropriate management structure, that is, is decision making centralized or decentralized, and is that appropriate? Linking this to human resources (men and women), a review of the skill base within the senior management team can be included to ascertain whether the management has the correct skill set or mix of skills to cope with future strategies.

## **Money**

Money is not just about how much money the organization has now, but the organization's ability to raise sufficient finance in the future to finance the chosen strategy, that is, what does the balance sheet look like, current levels of gearing, assets for security, and so on. This also serves to illustrate that elements of the 9Ms framework are not to be viewed in isolation. For example, the asset base, considered under the heading of machinery, can have an impact on future finances. Assets can be used as a source of security for a loan or can create the need for additional investment to replace aging assets.

## **Makeup**

Makeup refers to the organization's structure and culture. The question being posed relates to whether the organization has the right structure and culture to successfully implement the chosen

strategy, given the changes in the environment? For example, a more dynamic and complex environment may require a shift to a more flexible and decentralized organization structure, granting autonomy to business units to facilitate speedy responses to competitor actions.

## **Machinery**

The heading of machinery refers to all assets. It includes reviewing aspects such as the age of assets and whether the organization has the finance available to replace them when required—reviewing whether the technology being used is up-to-date or it is putting the organization at a disadvantage? The asset value can also be considered under this heading. For example, organizations in high street retailing or property management would be interested in what is happening to the value of the asset base.

## **Methods**

Methods refer to the way of working and asks questions such as, could things be done more efficiently and more effectively? This could include manufacturing, design, administration, and customer service—indeed, in any activity undertaken by an organization. Techniques such as benchmarking (see section 10.9) or analysis of the value creation system (section 4.9) could be used to explore if the organization’s performance can be improved.

## **Markets**

The markets heading facilitates a review of the markets in which the organization currently operates or is planning to enter. This could mean withdrawing from markets as well as expanding into new markets. Portfolio analysis, such as the Boston Consulting Group matrix (section 4.5), can be used to help review the product portfolio and the markets in which the organization operates. This analysis aids the development of strategies to manage the balance of the portfolio and the relative competitive position.

The product life cycle (section 4.4) is a useful tool as organizations need to assess where products are within their life cycle. This assessment again illustrates the link to the environmental analysis as any change in the environment could potentially impact on the product mix and product life cycle. For example, changing social trends, such as a change from voice to text communications, or political influences, such as governments setting targets to ban the sale of fossil fuel vehicle, or legal changes, such as increased fire resistance standards on building materials, or environmental factors, such as increased pressure from consumer groups to enhance the recyclability of products. Customer profitability analysis can also be considered under this heading (section 4.7). Not all customers provide the same level of profitability due to the different demands placed on the organization's resources, which results in varying degrees of “costs to serve.”

## Materials

The materials heading includes an evaluation of supplier relationships (section 4.10) as well as changes in the materials that are used. Aspects such as reliability, quality, cost, and location relative to supply can be evaluated. Do current suppliers have the capacity to grow with the organization? If not, then alternative suppliers need to be sought, or the possibility of dual sourcing needs to be considered.

## Management information

The heading of management information encompasses reviewing the capability of the systems to provide the information to managers required to manage the business effectively and to develop, implement, evaluate, and monitor strategy. Many organizations find that they are still relying on the information systems and technology installed ten years ago but that the business has changed. Consequently, the managers do not have access to the information they need to run the company as it is now.

Information systems develop entropy over time and become less useful, unless the information provided keeps pace with the business as it grows, develops, and changes in response to the environment. Legacy systems, including the financial systems, have developed in a piecemeal fashion, often by implementing workarounds to cope, only to find that the lack of integration creates inefficiencies such that the cost of providing information becomes expensive or prohibitive.

**Learning activity.** Thinking of an automotive manufacturer or other large organization in a sector that interests you, what resources and capabilities do you think it will need under the 9Ms heading?

## 4.4 The product life cycle

**Active reading.** Note the accounting techniques that can be used to aid the development and launch of new products. Also, make a note of elements of the task environment and the business ecosystem that have important roles in the management of the product life cycle. Think about the impact of the increased awareness of sustainability on the product life cycle.



**Video link** [Product life cycle](https://www.youtube.com/watch?v=qis6HfkijBM)

[\[https://www.youtube.com/watch?v=qis6HfkijBM\]](https://www.youtube.com/watch?v=qis6HfkijBM)

The product life cycle (PLC) is a commonly referred to model and represents the life of a product from initial launch to eventual decline. The representation that is often referred to includes the four

stages of the product sales life cycle: introduction, growth, maturity, and decline (Figure 4.1). A development/design phase has been added at the start of the life cycle (Kaminski and Rink, 1984), which reflects the significance, and impact, of product development and design on the sales life cycle. Techniques such as target costing (section 7.8) and life cycle costing (section 7.9) provide considerable support at the development stage. Certain industries such as pharmaceuticals and automotive vehicles traditionally have lengthy and costly product development times, although these are becoming shorter. The high levels of development costs make it desirable to extend the product life cycle for as long as possible.

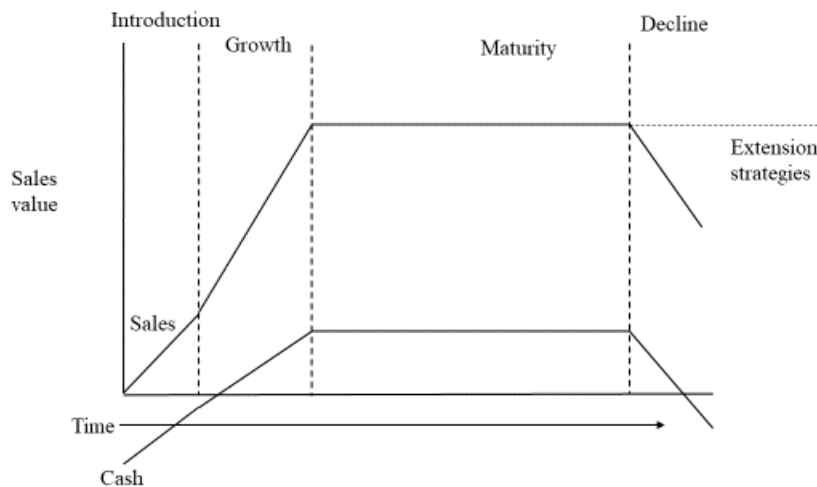


Figure 4.1 The sales product life cycle

Figure 4.1 illustrates the typical stages of the sales product life cycle. The top line indicates sales growth, typically measured in sales value. The bottom line represents cash, which can also be indicative of profit. This line illustrates that at the introduction stage, due to initial marketing expenditure and low sales, the product is using, rather than generating cash (or making a loss). As the product sales grow, and the marketing strategy changes from one of awareness to building brand loyalty, the product begins to generate a positive cash flow (or profit) as the total value of sales revenue begins to outpace the costs. Once the product reaches maturity, it is hopefully generating positive cash flows and profits, which decline as the product becomes out of date or loses its market appeal, and sales volumes decline.

The product life cycle is not just a framework that aids the deployment of marketing and operational strategies depending on where in the life cycle a product might be but should be used in conjunction with customer relationship management and supply chain management. Srivastava et al. (1999) emphasized the need to link product development and life cycle management with

customer relationships not just as a strategy for building customer loyalty and extending the product life cycle, but as a means of gathering feedback for future product development purposes.

Minor product developments are frequently used as part of the extension strategies to keep the product alive and customers interested. In like manner, supply chain management does not just ensure that resources are available to match the growth in sales volume to meet customer demand but also provides valuable input to product development. Restuccia et al. (2016) go a little further. They stress the importance of obtaining feedback through the intermediaries, particularly distributors, as they can provide valuable feedback, for example, on ease of product handling, storage, and transportation.

Product life cycles have been getting shorter in recent years due in part to increased product complexity, increased global competition and demanding customers, increasing use of outsourcing providing flexibility and reducing the need for an organization to generate high sales volumes to cover the investment in dedicated plant and equipment, and the expanding number of business partners within the business ecosystem that contribute to the customer experience (Teresko, 2004). As a result, managing the product life cycle and the product portfolio has become a strategic priority in recent years (Jüttner et al., 2006). Many organizations will have multiple products, and if not carefully managed, the upper and lower extremes of demand could occur at the same time. Therefore the timing of a new product launch, upgrades, and degree of marketing support all need careful management.

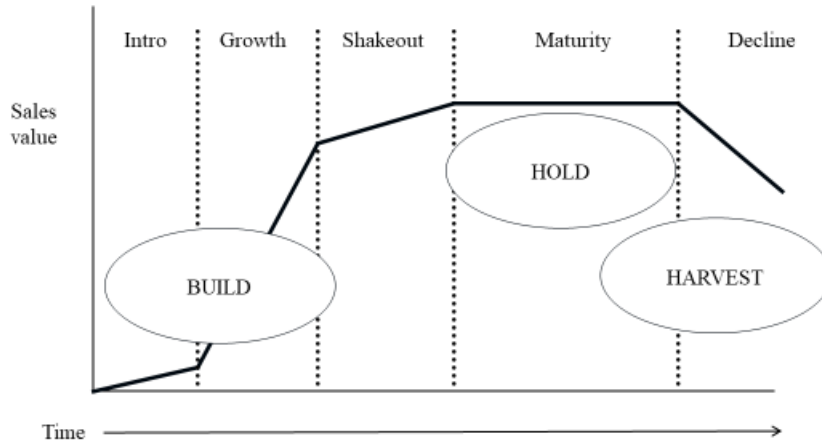
Technology and consumer electronics (Chien et al., 2010) and fashion apparel (Şen, 2008) are examples of industries that typically have short product life cycles. In the case of fast fashion items, these can be noticeably short, and as a result, this industry sector has been receiving criticism from a sustainability viewpoint (McNeill and Moore, 2015; Pal, 2016). There is a growing demand for sustainable products, which is due, in part, to increased public awareness of sustainable development (De Medeiros et al., 2014), not just for fashion products but for all industry sectors. This awareness of sustainability issues has implications for the length of the product life cycle, and the disposal, or recyclable aspect, of the product at the end of its original purpose as organizations seek to become, and seen to be, more socially responsible (Campbell, 2007). Indeed, products with sustainable characteristics could now constitute a source of competitive advantage (Bevilacqua et al., 2007; Gmelin and Seuring, 2014).

#### **4.4.1 Strategies for managing the product life cycle**

**Active reading.** Note the strategic intent and the tactics that can be used at each stage.

In Chapter 2, the strategies of build, hold, and harvest (Gupta and Govindarajan, 1984) were highlighted (shown in Figure 4.2) as being appropriate for the product life cycle.





8

Figure 4.2 Strategies at stages of the life cycle

The representation in Figure 4.2 brings in an element of the market life cycle to include the shakeout phase. Typically as a market develops and shows signs of growth and profitability, it attracts new entrants, but as the market growth slows the weaker competitors get shaken out of the market, often due to a lack of resources to match the growth, or the inability to gain sufficient market share to enjoy economics of scale. This shakeout can lead to the mature stage being dominated by a few large organizations. The strategies outlined by Gupta and Govindarajan (1984) are summarized in Table 4.1.

Table 4.1 Typology of strategies from Gupta and Govindarajan (1984)

Build	Strategy to increase market share, invest in capacity, best in high growth industries
Hold	Strategy to maintain existing market share, competes by effective marketing campaigns, minor product developments to maintain market interest, best in mature industries
Harvest	Focus on short term earnings, minimizing investments, relatively high market share, best in declining industries

### Build/invest

A build strategy, as the label suggests, attempts to build the market share of new products, which requires investment in marketing and resources, hence the cash using aspect of this phase. A key

factor is the ability to meet increased demand as the market and market share grows. This requires coordination through the supply chain to ensure that organization's suppliers can also match the growth, as there is nothing worse than developing a new product, only for competitors to quickly copy the product and satisfy the growing demand. This highlights the significance of developing a product or service that is difficult to replicate, thus gaining a competitive advantage, which allows time for brand awareness and customer loyalty to be built before competitors enter the market. Barriers to entry, such as product or technology patents, can also give time for the product to recoup some of the development costs before competitors developing similar products.

The build strategy is also appropriate as products move through the growth phase and into maturity. The strategy is to continue to build the market share. Therefore, investment is still required to increase the capacity and build brand loyalty via the marketing strategy. The growth in the product sales and market for the product will attract competitors to the market. As the weaker competitors are shaken out of the market, the focus is on retaining customers so that when the market matures, the organization maintains a dominant position. If the investment is cut back, the danger is that competitors will capture the growth in the market.

### **Hold**

A hold strategy, as the label suggests, seeks to maintain the current market position and a high level of sales. This strategy involves encouraging repeat purchases and maintaining customer loyalty, which in some consumer markets today, such as broadband provision, mobile phones, insurance, also involves managing the customer churn rate. It is at this stage that extension strategies such as minor product developments and market development (section 7.4) can be employed to keep the market alive.

### **Harvest**

A harvest strategy seeks short-term earnings and profits at the expense of long-term development. This often involves a discounting or promotional policy to maximize sales revenue. Using the farming analogy illustrates that if a product is harvested, it requires a new product to replace it. This strategy is often appropriate for end-of-line products that are being replaced by a new model.

## **4.4.2 Management accounting and the PLC**

**Active reading.** Note the range of management accounting techniques and strategy models that can be used to support the strategic management of product life cycles. They are not used in isolation but used together to supplement and complement each other.

### **Management accounting at different stages**

Management accounting techniques must be applied appropriately to business decisions, and as the product life cycle progresses, different techniques may have more relevance. For example,

before the introduction phase, management accounting techniques can provide considerable support to the evaluation of potential new products and assistance at the development and design phase. Techniques such as investment appraisal in the form of net present value calculations, discussed in section 8.5, can be undertaken to help assess the viability of a new product, or the timing or manner of the launch by investigation different options using investment appraisal and real options theory (section 8.6). Scenario analysis (section 3.15) is also useful here, particularly where data and the experience from previously launched products of a similar nature could be used in estimating the growth patterns and potential costs at various stages. Life cycle costing (section 7.9) where the costs are considered from design right through to disposal or recycling, and target costing (section 7.8) where the desired profit margin is deducted from an anticipated market price to derive a target cost for a viable product offering, are highly relevant at the development and design stage. Techniques such as breakeven point or cost-volume-profit (CVP) analysis (see Appendix B) are also useful in assessing product viability.

Investment appraisal techniques are still relevant at the growth stages, perhaps linked with real options analysis (section 8.6), as again, there are alternative options available, such as withdrawing a product from the market instead of making further investment. At this stage, it is essential to monitor the profit margins earned on products as, if competitors have entered the market, the price, as well as the functionality of the product offering, may become more relevant to the customer choice. Competitors may use price as a weapon to gain a foothold in the market. However, if volume sales can be built before the competition obtains a strong presence in the market, the first mover can use price as a preemptive strike or as a defensive weapon as there may be more room to move on price due to the volume sales.

At the maturity stage, cash generation, maintaining margins and ensuring that the profitable customers are nurtured and retained through customer profitability analysis (section 4.7), product and customer portfolio management (sections 4.5 and 4.8), and customer relationship management. It is at this stage that extension strategies and the elements of the marketing mix, such as product, price, promotion, place, physical evidence, processes, and people, can be adjusted to maintain customer interest and attract new profitable customers to counter customer churn. Management accounting can assist the marketers in their endeavors to extend the life cycle by helping to evaluate the impact of adjustments to the marketing mix.

At the decline stage, freeing up cash flow, containing costs, and perhaps managing a strategic withdrawal of the product becomes more important. Withdrawing a product from the market, however, is not an automatic decision for declining products, as the reason for decline needs to be investigated. Often declining sales are market-led rather than product-led; that is, an environmental change causes the market to reduce. A reasonable profit stream can often be maintained for some time from products that serve a declining market, especially if the market becomes a niche market that is preferred by a select demographic of consumers. There is also the possibility of the market reviving. For example, vinyl records appeared to decline but is now a growing market again, reportedly due to the actions of purists who consider vinyl to provide a superior sound and prefer the tangibility of the product.

## **Production pattern and inventory decisions**

Once a product has been developed and the market testing carried out (if applicable), the organization has a decision to make as to the inventory and production pattern with its related impact on finance and cost. If the product is marketed in such a way that the anticipated sales upon launch will be high, then a significant volume of products might need to be manufactured in preparation for the launch. If the product does not sell well, then there will be a high inventory level taking up space and tying up capital, which might have to be scrapped and written off if not sold. An alternative approach might be to gear up for very flexible manufacturing such that replacement inventory can be manufactured at short notice to satisfy demand. Organizations such as Dell and Zara operate on a “produce to demand” principle. The concept of lean manufacturing and lean accounting (section 6.7) can assist when dealing with a customer-focused demand-pull system of production.

The initial production volume and production method decision are crucial as there could be a lot of wasted marketing effort and investment in creating demand for a product that is satisfied by a competitor because the organization cannot satisfy the demand it has generated. The accountant needs to work very closely with marketing and production staff to ensure that the costs and benefits of various strategies are understood. The same is true for the provision of a new service in that the resourcing decision related to the provision of skills to meet growth in the market is just as significant, that is, it may take time to recruit sufficient staff and undertake any training required to deal with a surge in demand. During this time, sales are being lost.

## **Pricing decisions**

The initial pricing decision is critical; for example, whether to go for a high price associated with market skimming or a low price targeted at market penetration (section 6.4). Choosing a pricing strategy that can be maintained throughout the product’s life, allowing for promotional adjustments from time to time, can be critical in positioning the product in the market as well as the long-term viability of the product. Maximizing and maintaining the contribution (or gross margin) per product can be vital to the cash generation and profitability of the product as volume increases, and the average cost per unit reduces. Understanding the dynamics of this in a specific market can feed into future product developments, and target costing analysis, as the experience of the cost behavior, linked to marketing strategy, is gained through monitoring product launches over time. As organizations begin to develop a better understanding of the cost behavior of the organization and the market sector, this can be applied to competitor analysis (section 3.11), and competitor costs can be estimated with a higher degree of certainty.

## **Cost implications of competitive strategy**

The level of competition and structure of the market can change as the product/market life cycle progresses, requiring a review of the strategy. For example, in the early stages of the product life

cycle, competition is often based on price. The initial product, such as the first mobile phone, is often quite basic. For example, early mobile phones only made telephone calls and allowed SMS messaging. Once the new product is launched, competitors copy the concept and produce similar products with much the same functionality.

As the product moves through growth to maturity and the market price ranges are established, competition tends to move away from price toward product differentiation, that is, mobile phones are developed with different features and functionality. For example, new features such as cameras are added such that the fact that they make telephone calls is now incidental to the purchasing decision. This shift in the importance of features can have implications for pricing as the first phones were mostly provided with little cost to the consumer, and costs were recouped via the tariffs charged for calls made. As competition and the sophistication of the product increased, the charging mechanism changed so that now the consumer pays for the phone, usually over some time in the form of a credit agreement. The competition now focuses not just on the quality of the physical product, but on the service provision, unlimited calls, texts, internet access, and so on, and the monthly tariff charged.

This scenario was also the case for TV set-top boxes, which went the other way where the original providers charged for the box to recoup some of the initial development costs, then as other competitors entered the market the boxes began to be provided for free, but a charge was made if the contract was changed within a specified time. Now the technology is provided for a minimal upfront cost to the consumer, and the cost recouped via the monthly subscription, but still within fixed-term contracts.

The technology sectors such as mobile phones, broadband provision, and subscription services are among the sectors where customer churn is highly relevant as providers compete for new subscribers with lower introductory offers. The concept of bundling has also become popular in this sector, such as buying broadband, mobile phone, and TV subscription services together. The financial implications of these strategies need to be understood by the decision-makers.

### **Differentiation and fragmentation of the market**

Towards the end of the growth phase and into maturity, the development of products for different segments of the market becomes more relevant, for example, mobile phones targeted at teenage boys with ease of online game playing, or those aimed at the business market with personal organizers and other functions useful for the busy executive. This segmentation of the market is linked to the process of fragmentation as product variations are targeted at specific segments of the market. When fragmentation takes place, the cost base changes due to the loss of some economies of scale that were achieved from the production of a single standard product. When a range of product variations are required, the economies of scale can be lost, causing the cost base to rise.

Sports shoes provide an excellent example of the fragmentation of the market. One only needs to look at the range of different shoes available for your chosen sport. Not so long ago, when jogging became extremely popular, the demand for trainers or running shoes grew. This market

has grown to the extent that there are running shoes targeted at the way you put your foot down when you run. For example, you could be a front foot, midsole, or heel striker. Or pronate (inward roll of the foot), supinate (outward roll of the foot), or neutral strike. Add to this a range of different terrains, and the range of shoes available increases almost exponentially. There are even people who wear trainers as fashion footwear, with no intention of running or jogging anywhere. Not to mention those who collect trainers without wearing them at all.

Deliberately fragmenting the market is a potential strategy for competing against a cost leader. This strategy can sometimes allow smaller players to enter the market by targeting a single segment assuming that there is enough volume. This situation is discussed in more detail under competitive strategies in Chapter 6.

### 4.4.3 Difficulties of managing the PLC

There are some difficulties with the PLC in that it is not a precise science. For example, it is difficult to estimate how fast the market will grow or how long the maturity phase will last. It can also be a function of how good the organization is at developing new products and marketing. The extension strategies are often marketing-led, and if an organization is good at this activity, the product may have a long life, however, if the extension strategies do not work, the product may decline. Indeed, if it is thought that the product is about to enter the decline phase, and marketing activity is reduced or even stopped, the product will most likely decline. In other words, it can be a self-fulfilling prophecy.

**Learning activity.** See if you can think of examples of products that might be in the growth phase or the maturity phase of their product life cycle. Remember, it is not a precise science, so think of relatively new products and products that have been around for a long time. Can you think of any products that have declined?

## 4.5 Managing a portfolio of products and the BCG matrix

**Active reading.** Note the mapping of the categorization of the products on the quadrants of the BCG matrix and the match to the stages of the product life cycle. Neither model is precise, and each only represents the situation at the moment in time. Note the strategies used to manage the product portfolio and from what you know of the product life cycle think, as you read, of the way that management accounting can contribute to the management of the portfolio before reading section 4.5.4 – financial controls and accounting techniques.



**Video link** [Portfolio analysis - BCG matrix](https://www.youtube.com/watch?v=1L8TTD1MWvM)

[\[https://www.youtube.com/watch?v=1L8TTD1MWvM\]](https://www.youtube.com/watch?v=1L8TTD1MWvM)

Most organizations would be operating a portfolio of products and therefore managing the timing of the launch of new products, product enhancements, and so on, is critical. It would be wrong to wait until a product enters the decline phase to launch a new product, so the product life cycles in the portfolio will ideally overlap (see Figure 4.3). New products need to be developed and launched before the existing products go into decline.

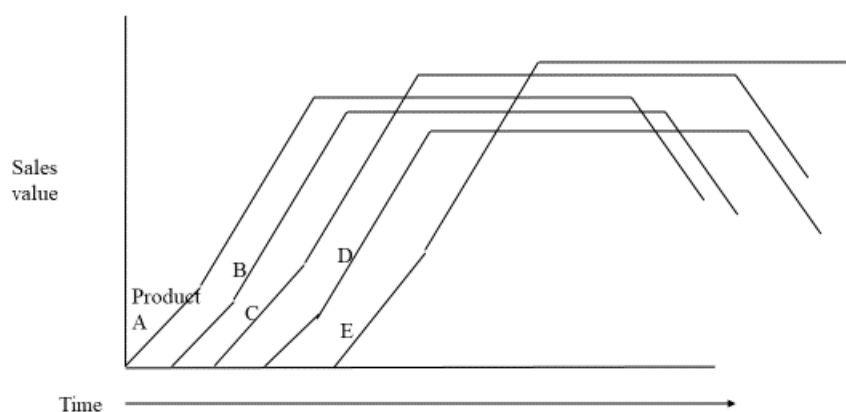


Figure 4.3 Portfolio of product life cycles

The organization is, therefore, managing a portfolio of products and consequently needs to make decisions about where additional investment is most beneficial to the overall mix of products.

#### 4.5.1 Portfolio analysis—The Boston Consulting Group matrix

The Boston Consulting Group (BCG) matrix, developed by Bruce Henderson and promoted through the Boston Consulting Group, helps organizations in managing a portfolio of products. The portfolio analysis matrix, shown in Figure 4.4, can be used to analyze an organization's portfolio of products. In the case of a conglomerate organization that comprises of many different businesses, or business units, the model can be used at a corporate level, that is, managing a portfolio of businesses. The model is still useful, but as conglomerates have become less prevalent, it has fallen out of use a little regarding the corporate level. The axis of the relative market share provides a measure of the competitiveness of the products, and the axis of the market growth indicates the attractiveness of the market.

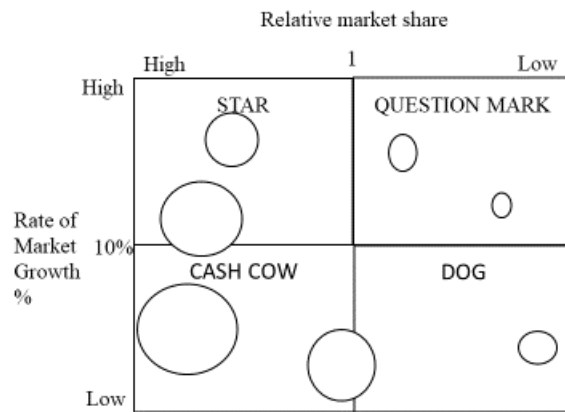


Figure 4.4 The portfolio analysis (BCG) matrix

**The axes**

The rate of market growth can be calculated by using the formula:

$$\frac{\text{Market sales this year} - \text{Market sales last year}}{\text{Market sale last year}} \times 100 = x\%$$

The apparent difficulty can be in identifying the value of market sales accurately. The market could be obtained from external sources, but it is not always possible to determine the total market. The assessment also depends on how the market is defined, for example, is it the local market, the national market, the global market, or is it a segment of the total market? For example, the market for accountancy training or a broader market such as business education, of which accountancy training is only a small element. Determining the market is one of the difficulties of the portfolio model, or indeed most strategic analysis tools, in that it is not a precise science; hence best estimates often need to be used. It is possible to use the organization’s sales as a proxy for market sales to obtain a view of the likely growth in the overall market. This approximation assumes that the organization’s sales are growing at the same rate as the market, but in the absence of any better information, it is probably good enough.

The midpoint of the rate of market growth axis was originally denoted as 10 percent, that is, greater than 10 percent represents high growth, and below 10 percent is low growth. This midpoint is not necessarily fixed at 10% and can be changed based on an organization’s experience of the



market. Ideally, organizations would want to look for markets where there are high growth rates, and their product offering gives them a strong chance of achieving market leadership.

The relative market share is assessed as a ratio. It is the market share of the organization compared with the market share of the largest (or nearest) competitor and is assessed on a logarithmic scale. The Boston Consulting Group chose to use market share as a way of estimating the costs associated with given products. The rationale for this is that both costs and market share are connected with production experience, as experience in satisfying a particular market demand increases, market share can be expected to increase and costs to fall, due to the effects of the experience curve. However, as already mentioned, defining the market can be a subjective process. It also presumes that the market size can be estimated with some degree of accuracy. It is not always possible, and therefore the actual position of a product within the matrix can be a subjective opinion rather than a definitive outcome. The critical point here is that if the assessments for products are undertaken consistently, then a reasonable representation of the product portfolio can be achieved. The relative market share is calculated as follows:

$$\frac{\text{Market share (or sales value) of the organization's product}}{\text{Market share (or sales value) of the nearest competitor's product}}$$

Generally, the midpoint of the relative market share axis can be denoted by the number one, that is, unity. Therefore, if the relative market share is greater than one, it has a relatively high market share (and is probably the market leader in the market or market segment) and, if lower than one, a relatively low market share.

### **Categorization and balanced portfolio**

The products or business units are categorized as question marks, rising stars (or just stars), cash cows, and dogs. The question marks are cash using as the organization tries to grow the market share, with rising stars still requiring investment to match the growth in the market. As the market growth slows, and if market share is retained, the cash cows provide the cash for investment in question marks and rising stars, with dogs potentially becoming a drain on cash resources. The ideal situation for an organization is to maintain a balanced portfolio of products. Each circle shown in Figure 4.4 represents a product, the size of which represents the proportion of total sales. Ideally, the cash cows are the most substantial proportion of total sales with question marks and dogs representing much smaller proportions.

As product life cycles become shorter, products may move around the matrix more quickly. Although there are many more factors that influence a product's life cycle other than market growth, it emphasizes the need for organizations to review, and indeed, renew their competitive advantage frequently.

Figure 4.5 illustrates that the same strategies that were discussed with the product life cycle in section 4.4 are relevant to the BCG matrix categories.

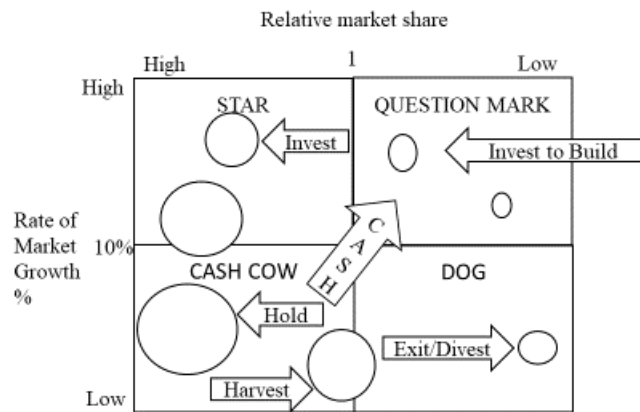


Figure 4.5 Strategies appropriate to categories of the BCG.

A rough matching can be made at a business level strategy in that the introduction stage of the PLC equates to the question mark category, the growth to rising stars, maturity to cash cows, and decline to dogs (Hambrick et al., 1982). Figure 4.5 illustrates that initial investment is required to build market share to become the market leader. Once the market becomes mature, the cash cows provide the cash to invest in question marks and rising stars to replace the cash cows once these begin to decline.

## 4.5.2 Uses of portfolio analysis

### Balanced portfolio

The prime objective is to achieve a balanced portfolio, that is, to ensure that the company has new products that can replace the old products as they begin to lose their market appeal or technology begins to make them obsolete. It emphasizes the importance of monitoring the environment, particularly the competitive environment, and evaluating the potential impact of changes on the profitability and cash generation properties of product combinations.

### Assess trends over time

Portfolio analysis can be used to assess trends over time to monitor the impact of the strategies being adopted. For example, are the question marks turning into stars? What is happening to the market growth rate? Have the stars maintained the market share to become cash cows?

## **Assessing the potential of strategies within the portfolio**

The analysis can be used to test the risk of various strategies by undertaking scenario analysis, or a “what happens if?” style of analysis, to examine the impact on the overall balance of a portfolio if certain strategies are adopted for different products or business units. Used over time, this can encourage organizational learning as the impact of various strategies is monitored and evaluated.

## **Competitor analysis**

Information about the competitors’ products and market share needs to be gathered as part of the analysis, which makes it possible to use portfolio analysis as part of competitor analysis, that is, to gain an understanding of the strength of a competitor’s portfolio of products. It can help to formulate an organization’s strategy, which makes portfolio analysis a useful tool to monitor potential competitors via trend analysis, as small competitors can often grow to pose a significant threat.

### **4.5.3 Further considerations of using BCG analysis**

As with all models and frameworks, it is important to note that running a business is not necessarily a precise science and that care needs to be exercised when interpreting the information provided by the models. Just as decisions should never be taken based purely on the numbers, decisions should never be made based on using one model in isolation.

## **Possible synergies between products**

There is the potential to miss possible synergies between products. Consideration needs to be taken of the existence of complementary and substitute products within the portfolio when formulating strategy. It can affect the timing of product launches and withdrawals from the market. Scenario analysis and experience aid the strategic decision-making process, emphasizing the need to monitor the mix of products, and purchases of product combinations, regularly.

## **An underlying assumption that high market share is always good**

Assuming that achieving a high market share is the ultimate aim can send the wrong message to nonfinancially aware managers. They may push sales at any cost rather than selling to profitable customers. Also, high market share does not necessarily lead to high profits as markets can be extremely competitive with low margins. Similarly, it could be that it is possible to make a reasonable profit from a small market share. It is also worth remembering that market share is not the only indicator of success.

### **High volumes of data required**

A potential drawback is the need to acquire data about market share and competitors' products. If an organization has a large volume of products, it requires high amounts of data to be collected. For this reason, it is often only practical to undertake the analysis for key brands. However, the use of technology and external information that is available in electronic format can help alleviate the information overhead.

### **4.5.4 Financial controls and accounting techniques**

The financial controls and accounting techniques that are appropriate for each product category on the BCG can be linked to the critical success factor of each stage.

#### **Question marks**

The critical success factor for products in the question mark category is to develop and launch new products into the market successfully. It requires investment in new product development, the control of that investment, and the evaluation and approval of the business case for new products. Investment appraisal techniques (see section 8.5) are a crucial part of the business case and evaluation phase. The investment appraisal included within the plan will not only include targets for the initial investment in operational capability, but also marketing spend, sales, costs to serve, and time frames for critical stages.

The accountant will be involved in monitoring the success of the product launch. They will also have been involved before this in evaluating the viability of the product at the development stage. The approval process may have included the use of techniques such as target costing (section 7.8) and life cycle costing (section 7.9), as well as strategic pricing (section 6.4). Activity-based costing (section 6.6) may be used to establish the cost of a product in relation to pricing strategies, or as part of target costing exercise to ensure a reasonable margin is made.

#### **Rising stars**

As the product moves to the star category, the critical success factor is growing the market share. The concept of investment appraisal is still highly relevant at this stage as further investments in marketing are made to increase the market share. The focus of the marketing spend switches from awareness advertising to building brand loyalty. The experience curve will begin to impact on costs as market share rises; therefore, the impact of costs needs to be carefully monitored.

While activity-based costing (ABC) may have been used at the question mark stage, as the volume grows more accurate data becomes available to estimate future activity levels, ABC can play a key role in helping to identify areas for improvements, and where the costs of activities can be reduced. ABC analysis can also be undertaken in conjunction with the analysis of the value creation system (section 4.9). The impact of promotional activity on margins needs careful

monitoring to ensure that it does not jeopardize the future viability of the product by creating a perceived level of pricing that is not viable in the long term.

Competitive responses also require monitoring to retain market share. At this stage, it is important not to revert to a reactive strategy but to continue to evaluate the potential impact of increased investment on the future viability of the product and to maintain the balance of the portfolio. The potential impact of investment in one product on the balance of the portfolio could be considered via a form of “what-if” analysis.

### **Cash cows**

The critical success factor of the cash cow category is to maintain the market share and margins. Here we are expecting a return on the total investment made to enable the product to achieve the dominant position in the market. The importance of maintaining the contribution (or gross margin) per product and customer profitability analysis (section 4.7) takes on more significance at this stage.

### **Dogs**

At the dog stage, the critical success factor becomes minimizing the cost base with an emphasis on freeing up cash flow to invest resources in other products. The potential to find niche markets where the product could still provide a positive cash flow should also be investigated.

## **4.5.5 The Case of Nokia**

In 2008 Nokia was a leading manufacturer of mobile phone handsets and provider of network infrastructure. The company operated within three divisions: Devices and Services, Here (digital mapping/location), and Nokia Siemens Networks (the provision of network infrastructure). In the Devices division, Nokia’s phone lost market share as the development of the smartphone became the consumer preference. To compete with the smartphone, Nokia developed the Lumia range of products, which linked up with Microsoft to use the Windows Phone 8 operating system. The basic premise was that, as many consumers used a Microsoft operating system on their computers, linking it to the phone would be an attractive offering.

Nokia attempted to compete with the established smartphone providers by launching the Lumia 1020, which was described by reviewers as a digital camera with some phone features built-in. However, this was not as successful as Nokia had hoped, and the Devices division began to lose money, and market share continued to decline. The Network division was also seeing its markets becoming more competitive and, although still profitable, Nokia’s sales had been relatively flat, causing a decline in market share. The Here division was the only division to show signs of growth in both sales and profits. The movement in their product portfolio between 2008 and 2013 could be represented, as shown in Figure 4.6.

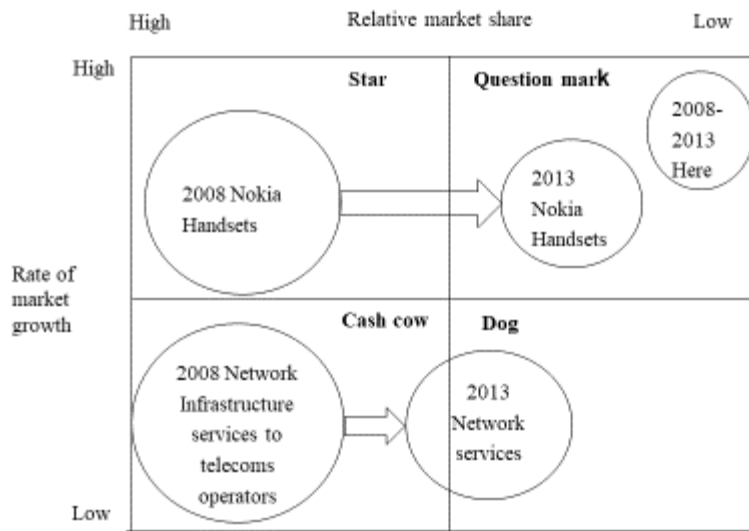


Figure 4.6 The Nokia portfolio of business units

Nokia reviewed its strategy and identified that its key strengths were technology development, brand recognition, and experience of the telecoms market. They sold the mobile devices business to Microsoft mobile and focused on the provision of network infrastructure and its digital mapping business. The company was restructured into two divisions to take advantage of its key strengths—a Networks division and an Innovation division, which included digital mapping. The Here business was sold in 2015. During 2015 they began talks with Alcatel-Lucent, a deal which was concluded in 2016, with the rationale that it would give them a strategic advantage in developing 5G technologies and build on Nokia’s strengths in technology and innovation. A few years after this, Nokia re-entered the mobile market with a company called HMD-Global to build on the Nokia brand name. The success of strategies can only be seen over the long term. Still, the brief example illustrates Nokia taking decisions to redress the balance of its business and implementing a strategy that built on its key strengths.

## 4.6 Understanding customers

**Active reading.** Note the range of factors that are considered in understanding the customer base and informing marketing strategies to attract the most desirable customers. Part of that desirability is the profitability of the customers, but note why it might not always be appropriate to eliminate loss-making customers.



**Video link** [Customer profitability analysis](https://www.youtube.com/watch?v=4rUPXXQvXJM)

[\[https://www.youtube.com/watch?v=4rUPXXQvXJM\]](https://www.youtube.com/watch?v=4rUPXXQvXJM)

It is often said that the customer is the most important stakeholder in any business. In business-to-business situations, however, the concept can be extended through to the end consumer. George (2003), a past CEO of Medtronic, a global leader in medical technology and services, stated that the most important customers are their customers' customers, that is, the end patient or the ultimate consumer or beneficiary.

While it is necessary to focus on satisfying customer's needs, organizations need to be aware that due to the different demands placed on the resources by different customers or customer groups, not all customers generate the same level of profit. Indeed, some may be unprofitable. Customer analysis includes looking at various aspects associated with meeting the needs of customers in a way that is mutually beneficial to both customers and the organization. Ideally, the company wants to retain profitable customers and lose, or reduce, the unprofitable ones. However, it is a marketing-led strategy that achieves this. It is not good public relations to tell one group of customers they are not wanted. Organizations can, however, change the focus of the marketing strategy so that they do not attract the unprofitable customers.

The following factors shown in Figure 4.7 enable a good understanding of customers and their potential to generate profit for the organization.

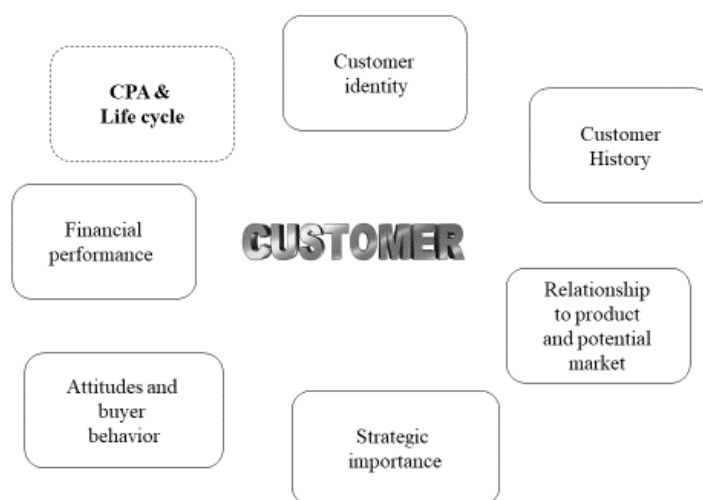


Figure 4.7 Aspects of understanding the customer

## **Customer identity**

Identifying the customer is easier in business-to-business markets than in retail markets. Still, understanding who the customers are in terms of the status in the marketplace, the products they make or sell, and the size and potential for growth can be useful in establishing their potential for the organization. In retail markets, loyalty cards provide a valuable means of gaining insight into consumer buying behavior and understanding who the customers are.

## **Customer history**

Analyzing customer history in terms of volume of purchases, ordering patterns such as regular or ad hoc, and how long they have been a customer helps to identify loyal customers.

## **The relationship of the customer to the product and the potential market**

Understanding the relationship of the customer to the product is vital for developing relationships and in business-to-business negotiations. For example, what does the customer do with the product? Is it a component of their final product, and, if so, how important is it and how many other competitor organizations can supply it? If a customer is a key player in their market, other organizations may opt to follow their lead and also purchase the product or service. Thus, the customer becomes a strategic customer and significant for attracting other potential customers.

## **Strategic importance**

There may be customers from which the organization makes little or no profit, but there are strategic benefits from continuing to supply the customer. For example, this may be due to aspects such as the kudos gained from supplying a prestigious customer, feedback provided that is highly beneficial for future product development, or a new customer that has the potential to develop into a highly profitable mutual relationship in the future.

## **Customer attitudes and behavior**

Some customers can be very demanding, while others are less so. Demanding customers can be useful in driving improvements in both product and service levels but can also make these unprofitable if the costs to serve become prohibitive. The strategic importance of the customer will impact on the willingness to satisfy the demanding customers.

## **The financial performance of the customer**

Customers that are growing and successful are likely to continue to be in business. Therefore, the aim is to develop an ongoing profitable relationship with successful customers. The payment record is also relevant here as this will impact on the working capital cycle and the cost of financing



different customers. In business-to-business markets, it is common to undertake a financial evaluation of the customer to ensure that they can pay for the products. The reciprocal is also true in that supplier evaluation is common practice (see section 4.10). Certain retail products may also require a credit check before the sale is made, for example, purchasing an automotive vehicle, or white goods, via a personal hire contract.

### **Customer profitability**

Ideally, the organization wants to ensure that its customers are as profitable as possible and hence will strive to minimize the costs to serve. Analyzing customer profitability leads us into a detailed discussion of what many authors consider to be a strategic accounting technique but has been popular among marketing managers for many years.

## **4.7 Customer profitability analysis (CPA)**

**Active reading.** Note the link between marketing and the use of CPA. Think about the need for accountants and marketers to work together and make notes on how the technique of CPA is used strategically. Also, note the reasons why it is not just a case of dropping unprofitable customers.

The marketing concept and customer-centric approach have been recognized in the marketing literature for many years (Bell and Emory, 1971; Jobber and Ellis-Chadwick, 2012). It was not until around the 1990s that the importance of customers, or more significantly customer profitability analysis (CPA), began to appear in the accounting literature (Bellis-Jones, 1989; Foster et al., 1996; Hoque, 2003; Ward, 2016).

Performance management frameworks, such as the balanced scorecard, include metrics associated with the customer perspective (Kaplan and Norton, 1996, 2005), and Kaplan and Cooper (1998) promote using activity-based costing as a means of allocating costs-to-serve to customers in CPA. But despite the use of the words *profitability* and *costs-to-serve*, McManus and Guilding (2008) found in their review of the accounting and marketing literature that coverage in the accounting journals was little more than fledgling. Detailed coverage of CPA in mainstream accounting journals is still relatively sparse compared to the marketing literature. It is, however, frequently described as a strategic management accounting (SMA) technique (for example, in Guilding et al., 2000; Cadez et al., 2005; Cinquini and Tenucci, 2007).

The fact that customers yield different levels of profit, and that some customers are unprofitable, is widely accepted. Indeed, some studies have identified that 20% of customers can generate as much as 225% of total profits (Cooper and Kaplan, 1991) or that 60% of customers can generate two to three times the total profit, with the remaining customers consuming considerably more resources than the revenue they generate (Cokins et al., 1993). This phenomenon is often represented in the literature as the ‘whale curve’ (Kaplan and Narayanan,

2001), or as an ‘inverted Lorentz curve’ (Mulhern, 1999) or ‘Stobachoff’ curve (Storbacka, 2000). A curve created by progressively adding the profits generated by each customer from the most profitable to the least profitable (Figure 4.8).

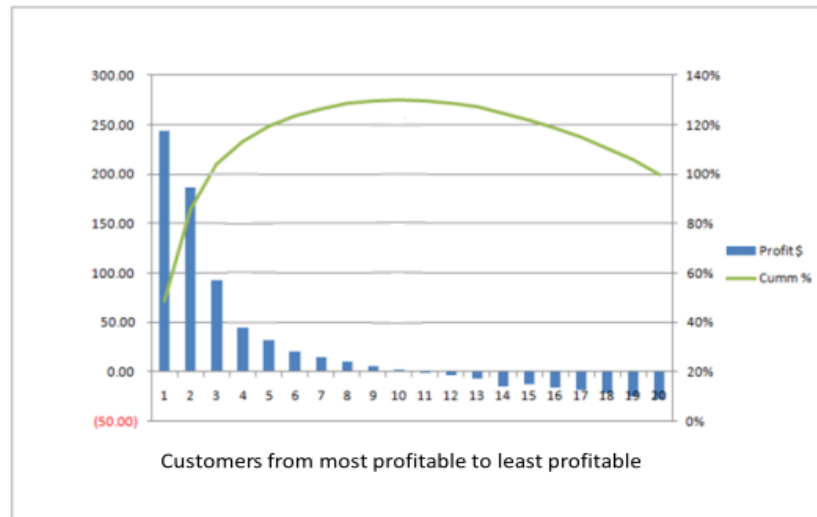


Figure 4.8 Whale curve showing cumulative profits from most profitable customers to the least profitable customers

Understanding the relative profitability of customers allows management to act to improve the overall profitability of the company (van Raaij, 2005). It is not, however, just a case of dropping the unprofitable customers. In some regulated industries, this may not be an option. Therefore, managers need to find ways of improving profitability, for example, by developing new products for specific market segments or changing purchasing behavior (McManus, 2007). Kaplan and Cooper (1987) highlighted that new and growing customers might be unprofitable initially, but then become profitable as the relationship develops. It is also suggested by Epstein et al. (2008) that unprofitable customers may have a hidden value such as influence or knowledge, a phenomenon that Horngren et al. (2000) refer to as unexpected revenue generation.

By using CPA van Raaij et al. (2003) point out that managers can identify opportunities in strategic marketing management, revenue generation, and cost management activities. According to Kumar et al. (2004), CPA can aid managers to develop relationship-marketing strategies targeted at the most profitable customers, and as part of a customer relationship management (CRM) system attempt to influence customer behavior, customer acquisition, retention, satisfaction and hence overall profitability (Swift, 2001; Boulding et al., 2005; Ngai, 2005). The objective of the strategies adopted would be to lift the whole whale curve, but also to flatten the curve after it begins to dip.

Previous studies of CPA have been explored in the existing literature with the reviews by McManus and Guilding (2008), Bates and Whittington (2009), and Roslender and Hart (2010), providing good coverage of the literature, for further study.

#### 4.7.1 CPA – the what and why

**Active reading.** Note the strict basis on which costs-to-serve are allocated to customers and how using another accounting technique, activity-based costing (ABC), in conjunction with CPA aids the analysis. Also, note that there are often practical difficulties that need to be overcome in applying the techniques.

In its simplest form, CPA is the difference between the revenue generated by a customer or customer group, minus the costs-to-serve (Ward, 2016). An example of a customer profitability report is shown in Table 4.2.

Table 4.2 Customer profitability analysis report

	\$	\$	
Sales revenue from actual product mix		267,000	100%
Less sales discounts		(1,000)	
Net invoice amount		266,000	
Less sales returns and allowances		(2,000)	
Net sales revenue		264,000	
Less direct product costs		(132,000)	
Product contribution		132,000	49.4%
Less customer costs:			
Order processing and cost of invoicing	(1,500)		
Sales visits	(5,000)		
Cost of dealing with returns	(500)		
Distribution costs	(15,000)		
Cost of customer-specific promotions	(6,000)		
Costs of holding customer-specific inventory	(2,000)		
Cost of financing of outstanding receivables	(5,000)		
Costs-to-serve	(35,000)	(35,000)	
Customer contribution		97,000	36.3%

Ideally, the CPA should be carried out by directly allocating costs to customers or customer groups. However, some costs, such as administration costs in raising invoices, deliveries, and so on, can be assigned to customers. Still, the acid test is whether supplying the customer or customers, changes the cost. In other words, the question that determines whether the cost is allocated to customers or not, is: If the organization stops supplying the customer, or customers, is the cost still incurred and remains unchanged? If the answer is yes, then the cost should not be

allocated to customers. For example, it would not be appropriate to allocate part of the marketing manager's salary to customers as this is unlikely to change. The chances are that a marketing manager will still be employed even if no customers are attracted. The idea is to include only those costs that can be allocated on some meaningful basis to customers and not merely apportioned on some arbitrary basis. Apportioning costs across customers detracts from the analysis. Only those costs that causally relate to the customer or customer group should be allocated.

Murphy (2005) suggests that costs-to-serve can usefully be grouped and classified as product costs, selling costs, relationship costs, and business (or sales) sustaining costs. The use of activity-based costing (ABC) (Kaplan and Cooper, 1998), and later time-driven ABC (Anderson and Kaplan, 2004), is promoted as being an appropriate technique to enhance CPA due to the ability to allocate the costs-to-serve to customers using an appropriate activity as the basis. (See section 6.6 for a discussion of ABC). Using ABC does not, however, provide the answer, nor does it reduce costs. Instead, it provides information that aids understanding of the relative customer profitability by raising questions as to why some are more profitable than others (Shea et al., 2012) and facilitates better-informed decision making to improve the profitability of customers (Searcy, 2004).

The marketing literature includes many examples of CPA being calculated using ABC demonstrating the versatility of the technique in the service and manufacturing sectors and its varied use by marketers. For instance the hospitality industry (Noone and Griffin, 1999; Guilding et al., 2001; Dalci et al., 2010; Hajiha and Alishah, 2011); banking (Storbacka, 1997; Zaman, 2008); restaurants (Raab et al., 2009); paper industry (Shea et al., 2012); order handling industry (Helgesen, 2007); and manufacturing (Smith and Dikolli, 1995; Rahman and Ghafeer, 2014). There is a danger, however, that the reporting of CPA glosses over the practicalities of ABC linked to CPA.

The fact that much of the data required to undertake a CPA (and ABC) analysis will not automatically roll off the accounting system and, to conduct the analysis regularly, will require changes to the procedures, responsibilities, and information systems (van Raaij et al., 2003). Indeed, Cooper (1991) suggests that the initial analysis is often undertaken outside of the conventional information systems as a stand-alone exercise. The ideal approach would be to incorporate the analysis into routine reporting, but this can be more time-consuming and problematic in the short term, which deters management from investing the effort to establish the necessary systems.

To use ABC and CPA strategically involves estimating and forecasting costs and activity levels, unless undertaken retrospectively, which means it is not necessarily a precise tool, due to the element of estimation involved. Also, the complexity of customer behavior in dynamic markets can add to the difficulties of incorporating results into marketing planning (Wang and Hong, 2006). For these reasons, Ward and Ryals (2001) argue that the implementation of CPA requires an iterative approach to understand the real implications for the customer base fully, and this inevitably increases the demands on resources in terms of time and effort, and commitment on the part of management (Cardoş and Cardoş, 2014).

An added complication was identified by van Raaij et al. (2003) in that the results of a CPA analysis may well be met with disbelief if the analysis produces information that is different from management's expectations. Managers often have a feeling for which are the most profitable customers. When the detailed analysis shows that their 'gut feeling' is incorrect, they do not believe the accounting figures often criticizing the findings. It is, therefore, important that managers are actively involved and supportive of the exercise when undertaken for the first time (Noone and Griffin, 1999). There is an educational role to be played by the marketing and accounting staff here in ensuring that managers understand how the analysis has been derived and its implications for decision making.

#### 4.7.2 Calculation of CPA using activity levels

**Active reading:** Note the process of calculating CPA and think about how the data required could be collected.

Understanding the relative profitability of customers is not just about ranking them in order of sales value. First, we need to ascertain the net revenue received from each customer by adjusting for discounts, returns, and the financing cost. The cost of financing customer debt, the time it takes customers to pay for the goods or services, is often overlooked. Undertaking a calculation to estimate how much interest could be saved on a bank overdraft, or indeed earned if the bank balance is positive and in an interest-bearing account, could justify the salary of a credit controller to manage the customer receivables.

Figure 4.9 shows the underlying data for three customers and the calculation of net sales income.

Customer profitability analysis	Month of January		
	Customer A	Customer B	Customer C
Sales at list price \$	500,000	480,000	520,000
Sales discount	5%	2.5%	2.5%
Payment terms	2% within 14 days	Net 30 days	Net 30 days
Sales returns and allowances	0%	2.50%	5%
Actual payment time taken	paid within 14 days	paid on time	paid 1 month late
Bank interest rate is 2% p.a.			
	\$	\$	\$
Total sales at list price	500,000	480,000	520,000
Less: Sales discount	(25,000)	(12,000)	(13,000)
Net invoice value	475,000	468,000	507,000
Less: Sales returns and allowances	0	(11,700)	(25,350)
Net sales	475,000	456,300	481,650
Less: Cash discount	(9,500)	0	0
Interest earned/(incurred)	408		(792)
Net sales income	465,908	456,300	480,858
	Interest earned on early payment $(\$475,000 - \$9,500) \times 16/365$ days at 2%		
	Interest incurred on late payment $\$481,650 \times 30/365$ days at 2%		

Figure 4.9 Calculation of net sales income by customer

Next, we need to look in detail at the costs-to-serve the customers. Activity-based costing (see section 6.6) provides the means to allocate costs to customers on a meaningful basis. Activity-based costing methods help to identify the cost of each activity undertaken to serve the customer. Figure 4.10(a) shows the activities and the cost of each activity calculated using ABC.

Customer profitability analysis		
	Cost driver	Rate
Costs-to-serve		\$
Order taking	cost per order	15
Order processing	cost per order	10
	cost per item	0.5
Delivery	orders loaded	25
	per mile	1
	total delivery miles	1
Express delivery	per order	75
Customer visit by sales executive	per visit	100
Monthly billing - invoice	per invoice	3
Statement reminders	per statement	5
Sales returns	per item returned	50
Special item inventory	per product line	100

Figure 4.10(a) Cost of each activity using ABC principles

The next step is to identify the number of times each activity is used to service each customer. The analysis is shown in Figure 4.10(b)

Activity volume	Month of January		
	Customer A	Customer B	Customer C
number of orders	10	20	40
number of orders	10	20	40
average number of items	160	40	20
number of orders in month	10	20	40
delivery miles per order	30	10	20
delivery miles per order	300	200	800
number of express deliveries requested	0	4	10
number of visits	4	2	1
monthly invoices	1	1	1
number of reminders	0	0	1
items returned	0	20	30
number of special items held	20	0	1

Figure 4.10(b) Analysis of activity by customer

The costs to serve can now be calculated by multiplying the volume of activity (Figure 4.10(b)) by the rate (Figure 4.10(a)). The result is shown in Figure 4.10(c)

		Customer A	Customer B	Customer C
Costs-to-serve		\$	\$	\$
Order taking	taking orders	150	300	600
Order processing	processing orders	100	200	400
	processing lines	80	20	10
Delivery	loading	250	500	1,000
	delivery cost	300	200	800
Express delivery	delivery cost	0	300	750
Customer visit by sales executive	cost of visits	400	200	100
Monthly billing - invoice	invoicing	3	3	3
Statement reminders	reminders	0	0	5
Sales returns	dealing with returns	0	1,000	1,500
Special item inventory	holding costs	2,000	0	100
Total costs-to-serve		3,283	2,723	5,268

Figure 4.10(c) Analysis of cost-to-serve by customer

The analysis in Figure 4.10 (a), (b) and (c), indicates that customer C is relatively more costly to serve than customer A or B. The analyses of costs-to-serve aids the management of customers and enables the organization to take a proactive approach. For example, looking at the reasons for customer returns may indicate that more information needs to be provided about the products before sales to inform the customer buying decisions. It may be that certain elements, such as special deliveries could be charged directly to the customer. Changing a policy, however, requires consideration of the impact on all customers. Nevertheless, the analysis provides the basis for the organization to have the discussion. Using ABC also highlights costly activities and can encourage managers to look for efficiency improvements to reduce the cost of the activity.

Finally, we bring the elements of the analysis together to identify the profitability of each customer. Notice that we also include the cost of goods sold in the calculation shown in Figure 4.11, as the product mix taken by each customer can influence their profitability. For example, a customer that purchases only the high margin products will provide a higher contribution before the costs-to-serve are deducted. Therefore, it is necessary to look at the margin earned from the products, as well as the sales incentives and the costs-to-serve.

Customer profitability analysis	Month of January		
	Customer A	Customer B	Customer C
Customer profitability	\$	\$	\$
Net sales proceeds	465,908	456,300	480,858
Less cost of goods sold	(349,431)	(319,410)	(355,835)
Contribution	116,477	136,890	125,023
Contribution percentage of sales	25%	30%	26%
Less costs-to-serve	(3,283)	(2,723)	(5,268)
Net contribution per customer	113,194	134,167	119,755

Figure 4.11 – Customer profitability analysis.

If the customers are ranked using the list price values from figure 4.9, the ranking is C, A, and B. When using CPA, taking into account adjustments to list price, and the costs-to-serve, the ranking becomes B, C and A. The analysis can be used to develop strategies to attract more customers that are profitable but also to develop strategies to change customer behavior for the benefit of both parties. For example, working together on inventory management could benefit both customer and supplier by reducing inventory management costs for the customer and costs-to-serve, such as delivery costs, for the supplier.

### 4.7.3 Benefits of CPA

**Active reading.** As you read, think about whether the benefit is strategic or operational. Strategic benefits will have long term implications for the customer portfolio, whereas operational will have a more immediate impact on costs and profits in the short term. Do you think that some of the benefits will have both operational and strategic implications?

CPA facilitates a better allocation of resources towards the more profitable customers (Zhang et al., 2010; Holm et al., 2012). Also, the marketing effort can be targeted more effectively (Mulhern, 1999), and linked to market segmentation, for example, demographic analysis of customers or sales via marketing channel (Storbacka, 1997; van Raaij, 2005). It aids the development of marketing strategies to target the acquisition of profitable customers. Or, conversely, strategies to discourage the unprofitable customers, which could, for example, be as simple as setting a minimum order quantity or charging for delivery on orders below a specific value, which passes the cost onto the customer.

CPA helps to identify opportunities for cost management, revenue management and pricing policies, and strategic marketing management (Gurău and Ranchhod, 2002; van Raaij, 2005; Cugini et al., 2007; Al-Mawali et al., 2012). It enables the firm to learn more about the behavior of individuals and groups of customers (Chang et al., 2012). Understanding the customers better and the cost implications can aid negotiations. Indeed Chang et al. (2013) argue that sharing of information with customers can result in benefits for both parties in improved supply chain costs



and better joint outcomes of the negotiations. Understanding the financial impact of losing key accounts can aid negotiations as the organization has a better understanding of the limits within which it can negotiate a profitable relationship with the customer, or even knowing when to walk away.

Kumar and Rajan (2009), however, point out that preferred and loyal customers often know their worth and can be more demanding. Still, the benefits of being an attractive customer may lead to an enhanced understanding of the customer-supplier relationship (La Rocca et al., 2012), and as a result lead to more profitable relationships in the long run (Dwyer et al., 1987; Ellegaard and Ritter, 2006). CPA can highlight the cost of obtaining new customers and the benefit of retaining existing customers as retention rates and acquisition costs can be considered to establish the benefit of various marketing strategies. This knowledge is built up over time by close monitoring of the marketing strategy and its impact.

CPA allows the organization to make decisions as to the level of service provided, or functionality required by customers. It may be that demanding customers are continually requesting changes to the standard product, making both the product and the customer unprofitable. Understanding the relative profitability of the customer base can aid the decision as to whether to charge a higher premium for changes to products or additional levels of customer service. This policy must be balanced with the strategic importance of the customer to the organization in that it may be that other more profitably customers are attracted to the organization because of a key customer, who happens to be very demanding. The overall impact on the profitability of the organization of losing the customer needs evaluating before making such policy decisions.

Improved knowledge and understanding of the customer base can create a source of competitive advantage (Dikolli et al., 2007; Heitger and Heitger, 2008) and, as Christopher et al. (1991) suggest, be used to help target customers with whom the firm will wish to build a long-term relationship.

#### 4.7.4 CPA as part of CRM

**Active reading.** It has already been noted that one of the difficulties of CPA is the data collection for allocating costs-to-serve to customers. Note, however, that what might initially be a benefit has a flip side and can create issues for managing customers. It is always good to develop a healthy skepticism and to challenge statements. The technique does not necessarily provide an answer but aids understanding so that decisions are made on a more informed basis. Many authors suggest CPA should not be used in isolation but should be part of a broader customer relationship management (CRM) system.

Roslender and Hart (2010) highlight the danger of attempting to quantify what is a relationship primarily built on loyalty and mutual benefit. They suggest that customer relationships and their involvement with product and service offerings could be determined via informal methods that more directly involve the customer, such as sales staff and feedback via social media. The inherent danger of the CPA is that the relationship is being constructed from an internal perspective without the input of the customers. CPA puts a numerical value on the relationship from the perspective of the organization.

To fully understand customer behavior, a range of information is required, both quantitative and qualitative. Vaivio (1999) describes a case in which a “quantified customer” is represented by a set of twelve metrics. The concept of the quantified customer was used by management for developing and subsequently evaluating improvements to operational aspects of servicing customers. Vaivio goes on to describe how the sales function used its experience and knowledge so that a “sales customer” perspective emerged.

The management recognized that the sales staff had an intimate understanding of customer specifics and problems that were better able to inform operational decisions concerning the servicing of customers. Bruns and McKinnon (1993) and Zaman (2008) highlight that managers have access to a range of information based on past decisions and interactions, and the CPA should ideally be part of the information that feeds into a more comprehensive customer relationship management (CRM) system. Ellegaard and Ritter (2006) suggest it is not just about profitability, but the nature of the relationship, or as Gronroos (1990) notes, CRM is about developing a long-term relationship for mutual exchange and fulfillment of promises.

Undertaking CPA can promote a customer focus within the business, and it is suggested that by aligning customer strategy and business processes, customer loyalty and profitability will improve (Zeithaml, 2000; Rigby et al., 2002). Kumar and Rajan (2009), however, note that managing customer loyalty does not always amount to increased profitability, as loyal customers can be more demanding. Customer loyalty results in increased profits due to repeat purchases, lower acquisition costs, knowledge and experience, and positive messages (Zeithaml, 2000; McManus and Guilding, 2008).

Loyalty programs, however, are more often linked to the past and are based on spending and frequency rather than profitability (Reinartz and Kumar, 2003), and perhaps, as Fornell (1992) suggests, only loyalty of profitable customers increase profitability. Nevertheless, customer satisfaction and loyalty enhance financial performance (Nelson et al., 1992; Anderson et al., 1994; Ittner and Larcker, 1998; Bernhardt et al., 2000; Yeung and Ennew, 2000; Smith and Wright, 2004). In contrast, Tornow and Wiley (1991) and Wiley (1991) found no specific or direct link between customer satisfaction and financial performance, but much of the evidence suggests it helps.

The key to using CPA is to develop and implement relationship-marketing strategies targeted at the most profitable customers (Kumar et al., 2004; Payne and Frow, 2005). Relationship-marketing is the essence of CRM: influencing customer behavior, customer acquisition, retention,

satisfaction, and profitability (Swift, 2001; Ngai, 2005) or acquiring, retaining, and partnering with selective customers (Helgesen, 2007).

CRM can make the business more profitable by formulating a value proposition and developing mutually beneficial relationships with the most valuable customers (Gronroos, 1990; Andon et al., 2001; Malthouse and Blattberg, 2005). Johnson et al. (2012) found, however, that in business-to-business relationships, firms were better at developing strategies to retain customers with profit potential than they were at acquiring new customers based on their potential to yield future profits. Bearing in mind that some customers may have strategic value, managers need to recognize the importance of managing the customer base, that is, managing a portfolio of customers (Paltchik and Storbacka, 1992; Ford et al., 1998; Wang and Hong, 2006). There may be occasions, as previously discussed, when it is beneficial to service unprofitable customers. It is, however, just as important to maximize the total profit from the customer portfolio.

#### 4.7.5 Dimensions of the CPA calculation

**Active reading.** Note the different dimensions of the CPA. Think about where each would be appropriate. The choice of the CPA dimension is often related to the practicalities and availability of sensible data. Also, note that the CPA can be performed on historical data, as well as estimated future data. Think about the usefulness of both. There is no guarantee that historical data reflects the future, and there is a degree of estimation and probability involved in taking a future perspective.

Guilding and McManus (2002) outline four dimensions of CPA, within the overall umbrella of customer accounting.

- Customer profitability analysis - the historical analysis of individual customers.
- Customer segment profitability analysis - for example, where analyzing historical data for different customers may not be practical, but revenues and costs-to-service identifiable segments are possible.
- Lifetime customer profitability analysis - the calculation of the accounting profitability of a customer, calculated on an accruals basis over its lifetime. The calculation takes into account previous years and as well as future transactions.
- Valuation of customers - described as the net present value (NPV) of the future cash flows, rather than profits, related to the customer, and may consider as part of the calculation any customer-specific assets required to service the customer.

Many companies look at the relative profitability of customers but often only use gross profit (Shea et al., 2012; Pitcher, 2015), which can be for practical reasons, for example, lack of data or resources to undertake an ABC analysis of costs-to-serve. While the benefits of ABC are well documented (Kaplan and Cooper, 1998), it is still the case that much of the information required

for ABC, and indeed for CPA, is not collected as a matter of routine by the information systems used (Cardoş and Cardoş, 2014). However, merely using gross profit can provide misleading results, as the vital element of the costs-to-serve is missing. The use of ABC, however, is only justified if the cost/benefit in terms of resources and effort required of undertaking the exercise is favorable (Smith and Dikolli, 1995). The dilemma is that this might not be known until after the analysis has been completed.

The marketing literature refers to customer lifetime value (CLV) as a popular measure among marketers (Berger and Nasr, 1998; Wang and Hong, 2006; Estrella-Ramon et al., 2013). It is said to be the upper bounds of expenses to acquire a new customer (Bonacchi and Perego, 2012; Shea et al., 2012).

There are different levels of sophistication that marketers use to calculate customer lifetime value. At its simplest, it is:

Estimated customer revenue over the lifetime, minus the costs of acquiring the customer and costs-to-serve, equals customer lifetime value.

A simple variation might be:

(Average order value) x (Number of repeat sales) x (Average retention time) x (Number of customers) = Total customer lifetime value.

Suppose you run a hair and beauty shop. On average, customers spend \$75 per visit and visit six times a year. On average, customers stay loyal for about three years before drifting away to competitors or a new experience. The average customer lifetime value is  $\$75 \times 6 \times 3 = \$1,350$ . The lifetime value can provide a guide as to how many customers are required for a viable business, known as the breakeven point, and can be used to set targets for increasing retention rates and a budget to spend on attracting and retaining more customers.

There are variations to the calculations of customer lifetime value as marketers frequently apply a discount factor to arrive at a net present value of the CLV. The term lifetime value echoes the concept of economic value, which occurs when returns are greater than the cost of capital (Doyle, 2007). Therefore, the lifetime value is the present value of the future cash flows (Mulhern, 1999; Pfeifer et al., 2005) discounted at the company's cost of capital over a reasonable planning horizon (Andon et al., 2001). Whether previous and future cash flows are included can depend on the stage in a customer's lifetime that the calculation is undertaken, and the number of prior years included and for how long the future period is extended can vary. For example, it may be appropriate to include previous and future cash flows or profits where the early years of the relationship have resulted in losses, but the future potential of the customer promises positive returns. Sensitivity analysis could be undertaken to test how long it will take to recoup the initial losses.

Unfortunately, there can be confusion between the definitions of customer lifetime value and the valuation of customers. The definitions applied to customer lifetime value and valuation of customers provided by authors such as Guilding and McManus (2002) and Lind and Strömsten (2006) provide some distinction. Customer lifetime value deals with profitability and includes previous and future years. The valuation of customers deals with future cash flows and calculates the net present value. Nevertheless, variations do occur, and customer lifetime value is frequently calculated using cash flows and net present value. CPA is not static but ideally should be carried out at intervals to ensure that relationships are moving in the right direction. The key to the analysis is to do what works best for the organization, so long as the limitations and implications are understood.

Marketers prefer the concept of CLV as it is future-oriented (Reinartz and Kumar, 2000). In contrast, simple customer profitability is retrospective (Pfeifer et al., 2005) and, although historical data is useful, the potential relationships between actions and effect can only affect the future (Jacobs et al., 2001). Therefore, although the past can inform us, marketing strategies need to be formulated with the future in mind. It is, however, recognized that anticipating future cash flows and profitability is inherently difficult (La Rocca et al., 2012). To help with this, Pfeifer and Carraway (2002) suggest using a probability-weighted average of the set of potential cash flows, and Damadoran (2002) indicates the analysis can be refined by adjusting the discount rate to reflect the degree of riskiness of the cash flows associated with the customer. It can also be beneficial to undertake a sensitivity analysis to test how the various estimates affect the outcome.

A typical formula applied, and cited in marketing literature, to calculate the CLV is:

$$CLV = \sum_{t=1}^{t=n} \frac{(M_t - c_t) \times (retention\ rate_t)^{t-1}}{(1 + i)^t} - Initial\ acquisition\ cost$$

$M_t$  = the margin (revenue less marginal product cost) from a customer in year  $t$

$C_t$  = any additional costs-to-serve (and retain) the customer in year  $t$

$i$  = cost of capital (often the weighted average cost of capital)

The calculation assumes several factors can be ascertained or estimated. For example, the probability and cost of retaining customers over time (included in the costs-to-serve), by expending customer-sustaining costs (such as sale visits and entertaining), and the profit margin earned by each customer and the costs-to-serve all need to be estimated. The discounted cash flows derived from the lifetime of the customer are compared to the acquisition costs. (See section 8.5 for a discussion of discounted cash flow and net present value). By analyzing the costs and activities over time, the organization is building the experience to make the model more accurate.

This method of calculating customer lifetime value can be particularly useful in organizations that can provide a series of different products during a customer's lifetime. For example, banks seek to acquire customers during their student years and retain them through employment to retirement. The bank can encourage these customers to access a range of different products and services at various stages of the customer's lifetime, thus increasing their profitability. Based on this information, it is possible to determine the level of marketing investment to spend on the acquisition of new customers to ensure an adequate return on investment. The acquisition and retention of customers are becoming more difficult in many markets today, where the rate of customer churn is quite high. For example, customers are more willing to switch broadband providers, mobile phone services, and energy providers, and even banks, and therefore estimated the retention rate needs to consider the customer churn rate. The functions included within the formula need to be adjusted to consider the changing behavior of customers and the market.

It is worth noting that other measures more akin to accounting ratios have been suggested; for example, the return on customer-oriented assets (Rust et al., 1995). Or, in instances where asset utilization by various customers or customer groups can be ascertained, such as in plant hire businesses, a return on investment can be calculated (Devine et al., 2005) by taking the profits as a percentage of the investment in assets used by customers.

#### **4.7.6 When are different dimensions of CPA appropriate?**

**Active reading.** Note that Lind and Strömsten suggest that when an organization serves a range of customers, more than one dimension of CPA might be appropriate. Think about the need to establish a system to collect the data regularly if the customer portfolio consists of different types of customers. Also note that although a framework can be developed to illustrate the kinds of relationship, the dimension of CPA and the type of relationship, is by no means mutually exclusive.

Lind and Strömsten (2006) undertook an analysis to help explain why companies use different forms or dimensions of CPA. They recognized that businesses might have different resource interfaces with different customers. They discuss the interfaces of transactional, facilitative, and integrative, identified by Ford et al. (1998), to which they add connective. By linking this with the technical and organizational types of resources identified by Håkansson and Waluszewski (2002), they demonstrate how different forms of customer accounting are appropriate for different customer-relationships.

The technical interface can be thought of as the degree of interaction between the two parties regarding the product. The organizational interface is the degree to which the parties make structural or organizational changes to their operations to facilitate the exchange. Figure 4.12 illustrates the mix of interfaces and dimensions of the CPA that might be appropriate. The framework adapted from Lind and Strömsten is useful to aid the understanding of the types of customer relationships that can exist and the potential use of CPA.

		Organizational interface to customers	
		High	Low
Technical interface to customers	High	Integrative (Collaborative) customer relationship  Lifetime profitability analysis Or Valuation of customer	Connective (Strategic) customer relationship  Valuation of customer Analyze from a strategic perspective
	Low	Facilitative customer relationship  Customer profitability analysis	Transactional customer relationship  Customer segment profitability analysis Or Lifetime profitability for a typical customer

Figure 4.12 Forms of customer profitability analysis and customer relationships (Adapted from Lind and Strömsten 2006)

### Transactional

Put simply, customers who buy standard products via standard marketing channels will have a classic arm's-length transactional customer relationship. An example might be a retail shop where customers buy products off the shelf, pay for the goods, and go. In this instance, individual customer profitability analysis that would be possible in a business-to-business relationship is challenging. It might, however, be possible to undertake a review of the relative profitability of customers who shop in-store compared to those who buy online. The in-store and online split is a crude example, and there may be some overlap of customers who shop online and occasionally go into the store, and vice versa. However, the idea of being able to find meaningful segments where customers can be grouped might provide some useful information on which to develop a future strategy to increase profitability.

Business-to-business organizations may find that customers fall within segments of low volume users, medium volume users, and high volume users. The segmentation of customers also enables a profile to be developed of a typical customer that falls within each group. In this case, it would be possible to calculate the historical customer segment analysis and potentially the customer lifetime value of a typical customer and to develop marketing strategies to attract more of the same.

In retailing, the use of loyalty cards can be used to ascertain the historical purchasing habits of individual customers to target promotions for future purchases. This data could be used to create

a profile of a typical customer within a market segment using a revenue value generated via data mining from loyalty card data, deducting the cost of goods, and using an estimate of the average costs-to-serve. The results of this analysis can be projected to estimate the lifetime profitability of a typical customer profile and used to inform marketing strategies. Therefore, it could be argued that where historical customer profitability is possible, either individually or in a segment, a future projection could be undertaken to produce a CLV. Using this information as part of customer relationship management can be a powerful tool for marketers.

### **Facilitative**

A major customer who regularly buys a large number of standard products may stimulate the company to invest in organizational resources to facilitate the exchange and will have a facilitative relationship. For example, the supplier of components to a major automotive manufacturer and assembler may develop production or distribution facilities close to its customer to facilitate the supply of parts to the customer on a just-in-time basis. The facility may also benefit other customers. As there is an identifiable relationship between the organization and the customer, individual customer profitability would be possible.

In situations such as this, the organizational change may take place after the acquisition of the customer and is made with the principal benefit accruing to the supplying organization. There is also a case for undertaking CLV as once the relationship is established, the focus would be on maintaining the relationship and improving the benefits for both parties.

### **Collaborative**

In cases where the customer and supplying organization work closely together, for example, to develop products denoting a high product interface, and the company dedicates specific organizational resources to satisfy these customers, they will have an integrative (or collaborative) relationship. As there is an investment in resources to facilitate the trade between the two parties, and an exchange of information to customize the products, this should be a long term relationship.

It is appropriate to treat this as an investment in a long term stream of potential revenues and undertake a customer lifetime calculation, or if future cash flows only are included, the valuation of customer form is appropriate. The investment in creating the organizational interface would be treated as part of the acquisition costs. Ideally, the organization would seek to leverage the product development for the benefit of all customers, thus spreading the investment. Historical CPA could be undertaken on the individual customer basis to monitor the profitability of the relationship.

### **Strategic**

Where, however, the customer is demanding as to the product specification but has little interest in a close working relationship, the decision becomes one of assessing the nonfinancial benefit of the customer. The resources used to satisfy these strategic customers potentially are high, but the financial rewards are low, due in part to the high costs-to-serve. There need to be other benefits



derived from the relationship such as kudos, referral, or knowledge acquisition; hence the term strategic can be attached to this type of customer, as the benefits are more intangible but have strategic importance to the company. In these instances, there needs to be an assessment of the long-term strategic advantage, as well as the potential profitability of the customer.

It would be appropriate to use the valuation of customer format and calculate a net present value based on future cash flows and the investment costs to acquire the customer. If the NPV is low or negative, an assessment needs to be made as to whether the management team feels that the strategic benefits arising from the relationship exceed the negative NPV. A benefit could be other revenue derived from customers that are attracted to the organization due to the presence of the strategic customer in the portfolio. In this case, the negative NPV acts as part of the acquisition costs of other customers.

Strategic customers can be beneficial for organizations, even if they are unprofitable. For example, a provider of accountancy training provided courses that were publicly available for several major accountancy bodies, such as ACCA and CIMA. Many of the students taking these courses worked in commerce and industry. Courses were also provided for the Chartered Institutes. These were mainly offered to the large and medium-sized chartered accountancy firms involved in audit and consultancy who put their training contracts out to tender. These were won, or lost, under intense competition from other providers of accountancy training. The large accounting firms have significant buyer power. They are very demanding as to when courses run, and often set targets for the pass rate of their trainees achieving the externally examined professional qualifications. The margins on these contracts were extremely low but worth competing for, even if a loss was made, as being known as the preferred trainer of a major accounting firm attracted many smaller firms to send their trainee accountants to the trainer. These smaller and more numerous contracts were more lucrative due to the relative power being with the trainer.

### **Subjective nature of CPA**

It is essential to realize that the CPA is not a precise science. Subjective decisions are inevitable. Customer profitability analysis is just a part of the more comprehensive customer analysis, and other factors should be considered, such as the strategic importance of the customer. Decisions should never be made based on numbers alone. The critical point is that organizations gain a better understanding of the business and the customer base from having undertaken the analysis.

Ideally, organizations should be providing profitable products to profitable customers, so merely conducting customer profitability analysis does not mean that the direct product profitability analysis is ignored. Every product does not necessarily carry the same margin due to operational costs or functionality. The trick to a successful strategy is not just attracting customers, but encouraging them, via marketing and promotions to purchase higher-margin products. Understanding the customer illustrates the link between product profitability, customer profitability, operational decisions, and marketing strategies.

## 4.8 Customer portfolio management

**Active reading.** Note the strong links between marketing and accounting. CRM is about using historical data collected about the customer to manage the future relationship. Think of how the different dimensions of CPA could be used within the CRM.

In their paper, Lind and Strömsten (2006) provided two case studies, Ericsson (telecoms) and Holmen (paper industry), and in so doing, they recognize that businesses have a mix of customers that may have a different relationship with the company. Hence, organizations may use more than one form of CPA. As noted at the beginning of the section on understanding the customers (section 4.6), it is vital to develop good relationships with profitable customers. The use of customer relationship management software is becoming widespread in many organizations, and linked to customer profitability analysis can be an immensely powerful strategic tool.

Although not strictly an accounting technique, CRM is about understanding and maintaining positive relationships with customers (Blattberg and Deighton, 1996) to enhance overall profitability. Supplier-customer relationships contain a complex array of formal and informal exchanges (Stein et al., 2013) and as such requires a range of information, not all of which will be financial, but should include the knowledge and expertise of those in contact with the customer (Roslender and Hart, 2010; Stein et al., 2013).

CRM is about gaining insight into customer preferences and behavior (King and Burgess, 2008) to develop mutually beneficial relationships (Gronroos, 1990). CRM systems should be designed to capture as wide a range of information as possible (Verhoef and Lemon, 2013). Although Roslender and Hart (2010) suggest that the customer should be involved in this process, Arbough and Sexton (1997) identified that customers could be reluctant to share information with suppliers. This reluctance is particularly true of business-to-business relationships where negotiation is involved; however, Chang et al. (2013) identified that better mutual outcomes could be achieved through sharing information.

Interestingly, Stein et al. (2013) identified that few firms use CRM data at an executive level in the organization, but that it is structured and prepared to provide tactical guidance for managing individual customers and sales opportunities. Different types of relationships, however, require different strategies and tactics, and therefore, as noted by Johnson and Selnes (2004), firms are managing a portfolio of customers. As such, firms should be striving to optimize the risk and return of their customer portfolios by structuring the mix of customers to reduce vulnerability and volatility of cash flows (Verhoef and Lemon, 2013). Firms should be seeking to maximize value from a diverse portfolio of customers (Tarasi et al., 2011).

Portfolio analysis can be undertaken using a range of factors for axes such as volume purchased and frequency of purchase. Customer profitability and key attributes of customers can be used to review a portfolio of customers. Using customer profitability as one of the axes can prove to be highly informative, especially when set alongside a measure that relates to customer potential.

A customer rating can be ascertained for each customer based on a range of factors, which could include:

- Loyalty—a reference to past purchases and number of other suppliers with which the customer does business
- Core market—the industry sector it is in, that is, is it in a core market serviced by the organization?
- Finance—a reference to payment record and financial strength
- Value-added factor—is there potential for the organization to add value to the customer?
- Growth potential—the potential of the customer to grow and generate future sales
- Degree of support required—how demanding they are as a customer? Are they a high-maintenance customer?

These factors can be given a score of between 1 and 5 and then combined to create an overall weighted rating of between 1 and 5 for the customer. Weightings as to the importance of each factor can be applied as determined by the organization. The position is then plotted on a grid with the axes denoting profitability and customer rating as illustrated in Figure 4.13

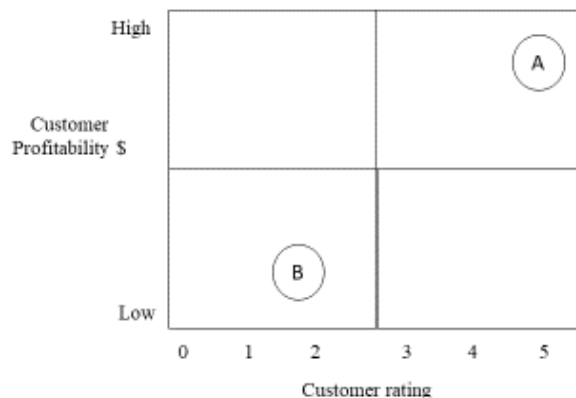


Figure 4.13 Customer-positioning grid

The rating produced has an element of subjectivity, but the grid provides a basis for discussions, such as how the position of customer B could be improved. Or whether customer B has potential, and it is worth investing resources to nurture the customer to achieve a higher

position on the grid. Ideally, the organization needs to target other customers with similar characteristics to customer A. The analysis can indicate profitable segments within a market to which customer A belongs. This analysis can also be used as a motivational tool for sales personnel to improve the customer profitability associated with individual sales staff who take responsibility for specific customers, such as key accounts. This form of analysis links the customer profitability analysis with the information gained via the CRM systems.

Research supports the view that CRM systems and customer profitability analysis can generate better firm performance (Gupta et al., 2004; Ryals, 2005). Developing a better understanding of how the firm can add value to customers could lead to changes in the way the organization manages its customer portfolio (Verhoef et al., 2007).

**Learning activity.** Thinking about the different forms of customer profitability analysis (individual customer profitability, customer segment profitability, customer lifetime profitability CLV, strategic customer valuation), decide which kinds of analysis would be beneficial for the following organizations. [Note: in some cases, more than one form may be appropriate if the organization potentially serves more than one type of customer.]

- A large pharmaceutical organization that sells volume purchases to HMOs (Health maintenance organizations) and primary health providers.
- A retail organization selling household goods on the high street and online.
- A small retailer outlet selling convenience goods to passing customers.
- A management consultancy providing services to international clients.
- A financial institution providing retail banking services to individual private customers via high street branches and online, as well as corporate customers.

## 4.9 Value Creation System

**Active reading.** Note how the value creation system forces a customer-focus on developing strategy. It is a conscious decision on the part of the organization how it configures its value creation system with the objective of gaining a competitive advantage. Think about whether this requires an outside-in approach (focus on market needs and positioning), or could it be used to support an inside-out (resource-based) approach to strategy? Also, note how the activities create costs and understanding how these interactions can aid the management of cost within the value chain.



**Video link** [Value creation system](https://www.youtube.com/watch?v=gRCP1j1nLM0)

[<https://www.youtube.com/watch?v=gRCP1j1nLM0>]

Customers are prepared to pay more for the goods and services than it costs to produce or provide them, due to the value they perceive is added by the organization. Customers are essentially paying for the value-added. Organizations choose to undertake certain activities to add value to the customer. Considering the value creation system and how value is added to the end customer ensures that the organization adopts a customer-centric approach.

Porter (1985) suggests that competitive advantage arises out of how organizations manage and perform activities. It is not just the individual activities but how well the organization manages the interdependence and linkages between activities that make added value more than just the difference between purchase cost and selling price (Dekker, 2003). Nor is it just a case of considering the organization's activities, but the activities through the whole supply chain need to be considered.

It is, as authors such as Christopher (1998) and Lambert and Cooper (2000), among others, suggest that it is no longer organizations that compete, but the entire supply chain or value system. These supply chains can now be extraordinarily complex, and the design and management of value systems require as much attention as the internal activities, for example, organizations such as Walmart and Amazon deal with many different suppliers. Dell prides itself on the built to order system, and Zara operates a quick response manufacture system. The management of the interdependence and relationships within the whole value system is now a source of competitive advantage.

Shank and Govindarajan (1992) describe the core idea behind the value chain as the chain of activities that runs from basic raw materials to end-use customers. These activities can be separated into strategically relevant segments to understand the behavior of costs and the potential source of differentiation. Notice that this includes the interrelationships between suppliers and customers. The way supplies and customers interact with an organization can impact on the cost, and degree, of differentiation within the product or service.

This aspect is captured more tellingly by Holweg and Helo (2014). They used the term *architecture* to describe the design of large network structures of value chain partners, for which objectives and processes can be set for the whole network. They go on to define the value chain architecture as the network structure consisting of suppliers, manufacturers, distributors, and customers designed in such a way as to maximize the value creation for the focal firm. This links closely to the growing use of the term business ecosystem in that organizations now need to consider the much wider field of operations than perhaps they did in the 1980s, as illustrated in Figure 4.14.



Figure 4.14 Value system as part of the business ecosystem

They also put forward five determinants of a value chain architecture as:

1. Value provision – a focus on value creation activities, not just internally but through the whole value system
2. Operational footprint – from where does the organization operate and source supplies? It emphasizes the relationship with the task environment and ensures that the current and future provision of resources is considered as well as current and potential future markets. Think of fit as the extended enterprise.
3. Risk management – focusing on supply chain risk within the system. This has implications for risks arising from the task environment and links to supplier evaluation (section 4.10), and can also extend the thinking to potential threats emanating from the general environment that could affect the supply chain.
4. Order fulfillment and product customization – focusing on the customer interface, how does the organization respond to customer orders? This focuses on the front end of the supply chain and works backward from the customer. Dell's built to order, and Zara's quick manufacturing systems are examples of starting with the customer and designing a flexible system to respond to customer-led demand.
5. Buffering mechanism – the mechanism in place to deal with uncertainty. This can include environmental scanning, ensuring that systems can adapt to changes, and simple

strategies such as holding inventory of raw materials and components, which links to risk management and the costs of holding inventory, or dual sourcing.

Thinking about the organization as a value creation system offers a model of corporate activities that can be used to analyze what an organization does and hence improve where it can add value to the customer. It helps to ascertain how value is created, how costs are caused, and how competitive advantage can be gained. A critical factor in its application is that the objective is to add value to the customer and hence helps to develop a customer focus on the organization's activities.

A typical value chain is illustrated in Figure 4.15.

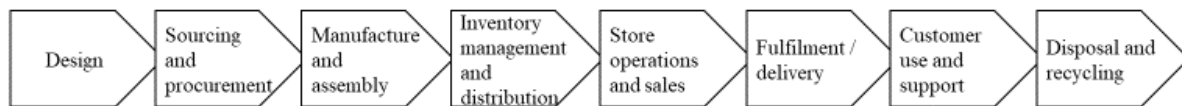


Figure 4.15 A typical value chain

Porter (1985) identified that the activities could be separated in primary (physical) activities and support activities. The primary activities encompass inbound logistics, operations, outbound logistics and marketing and sales, and after-sales service. The support activities include procurement, human resource management, technology development, and firm infrastructure. A modification of Porter's value chain is illustrated in Figure 4.16. The representation adopts a system view of inputs, processes, and outputs, and recognizes that marketing and sales can be the start point of the operations. For example, in Dell's build to customer order, or Zara's quick response manufacture system, it is sales that drive the manufacturing process rather than following the storage of finished goods inventory in outbound logistics.

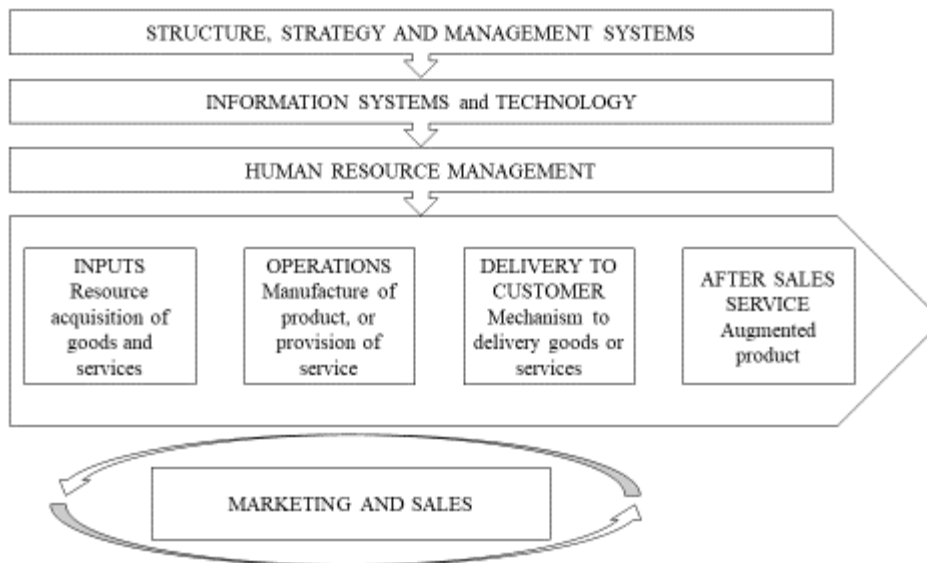


Figure 4.16 The value creation system

The inputs and resource acquisition involve the activities of receiving, handling, and storing of inputs required to undertake the operations of the organization.

Operations involve the activities of converting inputs into outputs such as manufacturing an automotive vehicle. In the service sector, operations are represented by the activities involved in providing the service, for example, in the provision of the meal in the restaurant, the provision of a haircut, carrying out an audit, or providing consultancy advice.

The delivery to the customer activity involves storing the product prior to purchase if appropriate and its distribution to customers. It is essentially getting the product or service to the customer. Therefore, in the case of a venue, such as a theatre, night club, or university, the location is a vital element of the delivery activity. In the case of an entertainment venue, a critical factor in its success is whether the customer can get to and from the place easily? Therefore, transport links are an essential consideration within delivery to the customer.

Marketing and sales involve informing the customers about the product or service, persuading them to buy it, and facilitating their ability to do so. It will include decisions concerning marketing strategy and means of selling, such as whether to use a physical sales force or online systems. In cases where products are manufactured to customer order, marketing, and sales impacts on the acquisition of resources as much as the final product. It, therefore, spans the activities of inputs from suppliers, operations, and delivery. Indeed, in a customer-focused business, the marketing and sales activity determines the level of production required.



After-sales service includes activities such as installing products, repairing, upgrading, and so forth, including customer care programs. Anything that is provided after the customer has received the main product or enjoyed the service. In marketing terms, this is referred to as augmenting the product. There is often a fine line between the product produced from operations and what is classified as the after-sales service, that is, when does the operations element stop?

Functions such as human resource management, IT systems, and the organization's structure, strategy, and management systems support the primary activities. These activities support all the activities undertaken to provide the product or service to the customer.

The way an organization chooses to configure its activities can provide the means for competitive advantage (Porter, 1985). An organization can decide which activities it needs to undertake to satisfy customer needs. For example, organizations may opt not to provide any after-sales service.

Part of the design of the value system is in managing the interlinkages and ensuring that all activities undertaken do actually add value. It is of no benefit if the organization can manufacture products to customer orders within a short time frame if suppliers are not able to provide the same flexibility. The way around this might be to hold high levels of inventory, but this incurs an unnecessary cost, which could be reduced by better management of the inputs and management of the supply chain, perhaps via the use of technology and just-in-time systems.

There is also an information flow around the value creation system, and this needs to be facilitated. If the organization's competitive advantage is to manufacture to customer demand the information flow from the customer, via the marketing and sales activities, backward through the value system, even to the extent of procuring components from suppliers, needs to be highly efficient. It requires an effective management system potentially supported by technology. Therefore, the competitive advantage is in the efficient operation of the whole value creation system.

Several authors have focused on the accounting aspect of the value chain, where the focus is on managing the costs. Shank (1989) discussed these under two main headings. Structural cost drivers and executional cost drivers, shown in Table 4.3.

Table 4.3 – Structural and executional costs in the value chain

<b>Structural cost drivers – influences the cost base</b>	<b>Executional cost drivers – firms ability to manage itself</b>
Scale – of investment in capacity, etc.	Workforce commitment to continuous improvement
Scope – degree of vertical integration	The use of Total Quality Management
Experience – accumulated experience	Utilization of capacity
Technology – process technology employed	Product design and formulation

Structural cost management refers to the cost management activities aimed at changing the cost structure of the firm in a way that is consistent with the overall strategy of the organization.

Executorial cost management refers to the cost management activities aimed at improving performance for a given strategy.

Henri et al. (2014: 269) suggest that the purpose of value [supply] chain management is “to align a firm’s resources and associated cost structures with (i) short-term tactics through cost reductions (executorial cost management), and (ii) long-term strategy through the re-engineering of the value chain and production of a different cost structure (structural cost management)”.

Hergert and Morris (1989) highlighted a difficulty of managing costs through the value system in that most accounting systems are good at collecting costs related to products, cost centers, and responsibility centers but less good at collecting costs associated with value chain activities. They do note that activity-based costing (ABC) can be useful in allocating costs to customers (see section 6.6). However, studies were undertaken by authors such as Al-Omiri and Drury (2007), Askarany and Yazdifar (2007), and Askarany et al. (2010) that indicate that ABC has not been widely adopted. ABC has its difficulties in execution, which include its complexity, compatibility with existing systems, and difficulty in the observability of results, which makes it is hard to report promptly in a way that managers can readily understand. Interestingly, Hergert and Morris (1989) quote an article from Fortune by Keichel (1981) who found that when formulating corporate strategies 70% of the analyst’s time was devoted not to obtaining external data (about the industry, market shares, activities of competitors and so on), but to reworking internal accounting data. It strengthens the case for developing strategic management accounting systems within organizations, but also the need for accountants to work closely with other professionals and be involved within the strategic management process.

#### 4.9.1 Using value creation system analysis

**Active reading.** Note the uses of the value system analysis. Following on from section 4.9, continue to think about whether this requires an outside-in approach (focus on market needs and positioning), or could it be used to support an inside-out (resource-based) approach to strategy and identifying a potential competitive advantage?

The analysis of the value creation system can be used to identify potential activities that could be outsourced. It, therefore, sets up strategic debates within the organization. It could be said that if an activity is not critical, then it could become a candidate for outsourcing. This is also said of nonvalue-adding activities.

There is a trend toward outsourcing the basic accounting functions to specialist firms as they are nonvalue adding but essential activities. In other words, the focus is on performing the activities

as efficiently and cost-effectively as possible. However, consider an organization such as Flying Flowers. It is an organization that began delivering fresh flowers to customers within a region known as the Channel Islands off the coast of the U.K. and covered a relatively narrow geographical area. As the organization expanded its global reach, the requirement for exceptional logistical capabilities to deliver fresh flowers became more strategic as it formed the basis of the competitive advantage, that is, fresh flowers for next-day delivery. As the expertise of the organization lies in growing flowers outsourcing the logistical activity to a specialist logistics organization made strategic sense and was more cost-effective.

Each organization configures the value creation system to suit its own needs. The competitive advantage may come from how the value system is configured, which activities the organization chooses to do itself, and which it chooses to allow others to do, even the customers.

Consider the case of Dell (Figure 4.17), an organization that sells computers online with the marketing proposition of tailoring products to meet the specific requirements of customers, and IKEA (Figure 4.18), an organization that predominantly sells flat-pack home furnishings from out-of-town stores. IKEA has stores around the world, three of which are in the U.S. (at the time of writing).

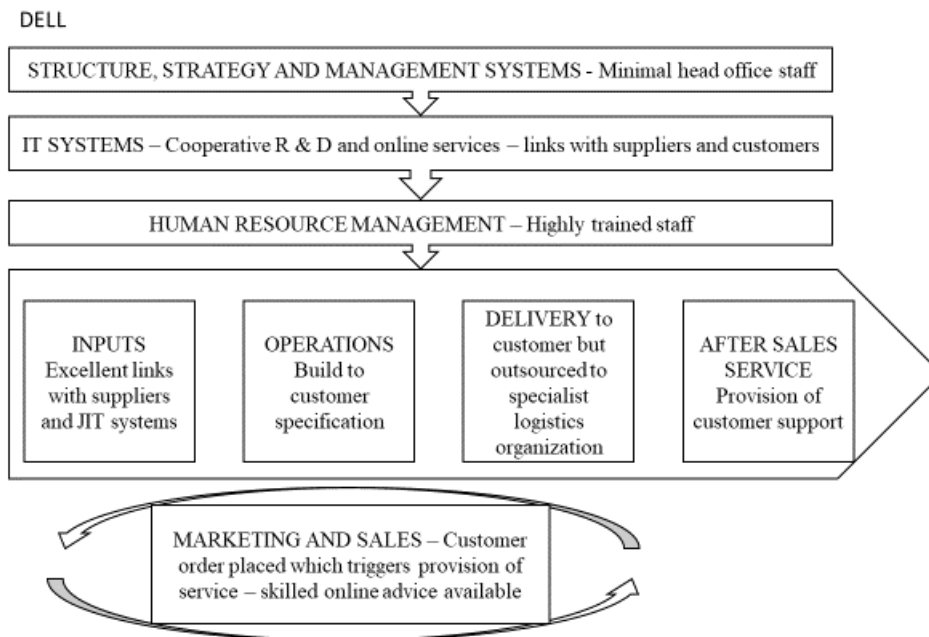


Figure 4.17 DELL value system

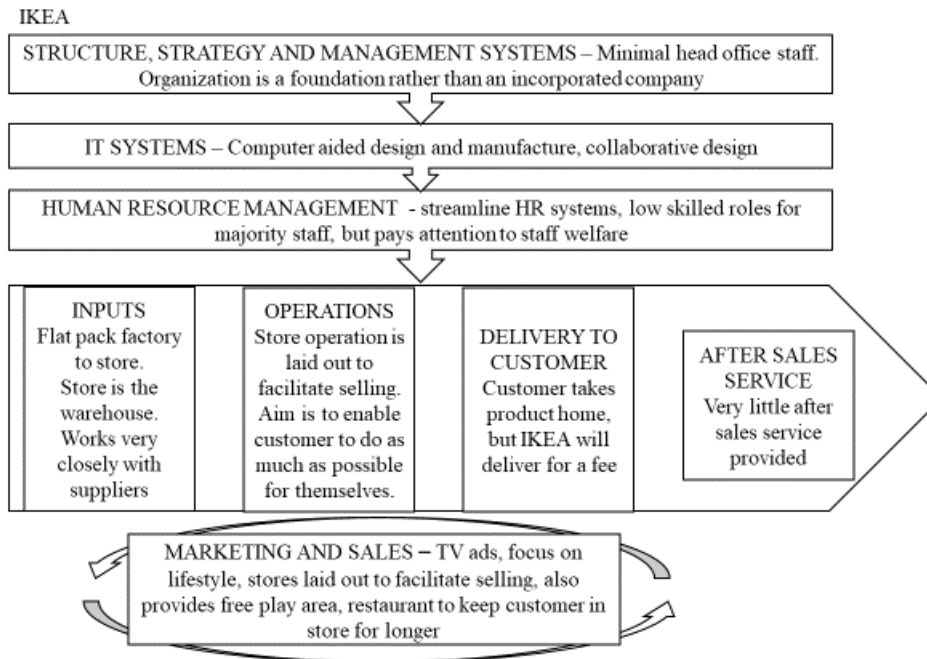


Figure 4.18 IKEA value system

The principle behind Dell is to add a significant amount of value to the customer while keeping costs low. In contrast, IKEA encourages the customers to do as much as possible for themselves, to keep costs and prices low. In the early days of IKEA, the customer did nearly all of the work, including selecting products for themselves, taking the product home, and assembling the product. Over the years, IKEA has responded competitively by offering these services but as an optional extra for an additional cost. This development of services retains their core market offering to customers who want a value for money product but also enables them to attract customers who are prepared to pay extra for the additional added value.

As the value creation system is concerned with activities, ABC can be used as part of the analysis. The activities become the cost drivers and are the result of strategic choices made by the management of an organization, which determines its underlying cost base. It can, therefore, be used to support the development and maintenance of the competitive strategy of cost leadership or differentiation; that is, all activities undertaken should support, and be consistent with, the overall competitive strategy of the organization.

As every organization has a value system of its own, managing the supply chain involves managing an extended value system in that each organization is adding value to the customer. The way an organization adds value through the extended value system is an essential aspect of creating a competitive advantage, so supply chain management and customer relationship management become more critical to today's organization.

**Learning activity.** Think of an organization with which you are familiar, either as a customer or employee. What sort of activities do you envisage would be undertaken within each element of the value system? Think about how it might add value to the product or service.

[Note: this objective of this activity is not to create an accurate analysis of the value system of an organization but to think about how value can be added to benefit the customer. The choice of organization is to give a focus to your thought process.]

## 4.10 Supplier Analysis

**Active reading.** Note that it is the whole supply chain that needs managing, which makes suppliers just as significant as customers.

The benefit of using the concept of a value creation system is that it is customer-focused; that is, it focuses on adding value to the customer. However, as discussed in section 4.9, the value creation system embraces the supply chain, and therefore it is worth taking a few moments to understand the significance of suppliers. Ensuring certainty of supply can be a key factor in satisfying customer demand. One way to provide some assurance is to dual-source. However, Wu et al. (2010) found that unless this is done with the knowledge of all parties, it can put pressure on the customer-supplier relationships and affect the behavior of both buyers and suppliers. They found this is particularly so if there is a focal dyadic relationship (interaction between a pair of individuals) with one preferred supplier, and negotiations are held with alternative suppliers. It is more beneficial for suppliers to know that they are part of a supplier network that satisfies the demand of the buyer.

Choi and Kim (2008) identified that in situations where there is a recognized network of suppliers, they are more likely to cooperate and work together to find solutions to supply chain problems. Kraatz (1998) noted that in strong inter-organizational networks of suppliers and buyers' local norms develop that govern the interactions and methods of operation. Customer and supplier relationships are built on trust, and Carey et al. (2011) found that when a strong relationship exists between the suppliers and customers, they are more likely to share complex information to help the relationship work.

The sharing of information through the supply chain aspect can benefit suppliers as well as buyers. Krolikowski and Yuan (2017) found that when suppliers were working with a concentrated customer base, which reflected strong customer-supplier relationships, as well as high switching costs, suppliers were more willing to invest in research and development and innovation to improve the products and inter-organizational operations. However, they did note that where strong customer buyer power existed, suppliers were less willing to invest as there was less certainty of a return on the investment.

Shi and Yu (2013) found that a range of studies showed that there is a positive relationship between good supply chain management and financial performance. The concept of the business

ecosystem supports the idea that close cooperation between its members benefits all parties. It is incumbent on the members to work together for the mutual benefit of the members in adding value to the end customer and consumer. There does, however, need to be some regulation and control of the system for it to work effectively.

A typical three-stage process for supplier selection and monitoring includes supplier appraisal, approval, and monitoring.

#### **4.10.1 The Three Elements Related to Supplier Analysis**

**Active reading.** Note the contribution that the management accountant can make to the activity of supplier analysis.

##### **Supplier Appraisal**

Supplier appraisal is an assessment of a potential supplier's capability of meeting and maintaining the key elements contained within the contract, such as quality standards, delivery commitments, quantity, and price. It would usually be carried out by those in the organization concerned with purchasing the products or services to be provided. Bhutta and Huq (2002) note that selecting suppliers often involves considering multiple aspects of the supplier's capabilities, and hence they tend to be multi-criteria decision-making problems. It is usually not just the price and quality, but a range of other factors that are taken into the account when making the decision, which can include qualitative aspects such as a supplier's commitment to ethical and sustainability practices, or proven ability to adapt to environmental change.

There is a role for the accountant in that a financial assessment of the supplier is undertaken to ensure that it is financially sound and capable of delivering the goods or services. The reciprocal is also true in that suppliers will often conduct a credit check of the customers to make sure that they can pay for the goods and services supplied. It is common practice in business-to-business relationships and consumer markets for purchases made on credit. There is, therefore, an opportunity for the exchange of information between parties early in the relationship.

##### **Supplier Approval**

Once the supplier has been assessed and found to be capable of meeting the contract requirements, the supplier is placed on an approved supplier list. If they are a preferred supplier, this can enhance the relationship. Still, as noted by Wu et al. (2010), if they are part of a dual sourcing or an alternate supplier network, this should be stressed at the outset of the relationship.

##### **Supplier Rating**

The performance of the supplier is monitored against the terms of the contract. An index can be created that ranks suppliers in terms of performance to determine the preferred supplier list. Large organizations often maintain an approved supplier list to which suppliers may be seeking access.

In terms of supplier/buyer power relationships, it is worth remembering that an organization is a supplier's customer, and they may well have undertaken customer profitability analysis to determine the status of the organization as a customer. Therefore, there is a concept of making an organization attractive to suppliers to obtain a good working relationship (La Rocca et al., 2012). The mutual benefit can be a determining factor in the success of a profitable long-term relationship for both parties (Gronroos, 1990; Andon et al., 2001; Malthouse and Blattberg, 2005)

As with customers, it is possible to rate the supplier performance and ascertain the strategic importance of the relationship. Typical factors of performance that can be monitored include aspects such as delivery performance and price, but also the ability of the supplier to respond to changes in demand. Referring to the value creation system, if an organization's competitive advantage is based on its ability to respond to customer demand, the same degree of responsiveness and flexibility needs to be present in the supply chain. One way to deal with this might be to dual-source with the suppliers' full knowledge of why the organization chooses to do so. It can be the basis of deciding the strategic importance of various suppliers and the development of supplier relationships conducive to both parties. The balance of negotiating power becomes relevant in the discussion about price and contract terms. Developing strong supplier relationships can mitigate against supplier power, as discussed under industry analysis in Chapter 2 of this learning resource.

Other aspects of supplier analysis can include an estimate of the likely costs of a breakdown in the supply chain. World events such as natural disasters, or the pandemic of the covid-19 virus in 2020, can affect an organization that relies on global supplies by disrupting the supply chain. The number of suppliers that can provide a product or service, the degree of competition in the demand and supply market, for example, for scarce resources, and substitution possibilities all impact on the supplier relationship and accountants can aid the evaluation of the strategic and financial risk these factors pose. More obvious aspects such as make or buy decisions, which could be the basis of competitive advantage, provide opportunities for accountants to contribute.

Supplier evaluation is situational, and there may be instances where it is imperative, such as in the negotiation of a service level agreement for an outsourcing contract. The service level agreement should include performance evaluation criteria as well as the terms of supply. Gulati and Singh (1998) suggest that hierarchical control mechanisms work effectively in interfirm relationships. These would include clear command structures, and authority systems, incentive schemes, standard operating procedures, dispute resolution procedures, and non-market pricing systems. The control systems employed, however, need to be consistent with the culture of the organization, and equally, a system of mutual benefit and cooperation can be appropriate.

The aspects that the evaluation focuses on will relate to the requirements of the relationship. Still, all appraisals will probably include issues such as finance, production capacity and facilities, information technology, human resources, quality, performance, and environmental and ethical considerations. Whatever the style of control that is adopted, the relationships do need some form of control, or the value system could breakdown and damage the end demand for the whole value system.

## 4.11 Financial Analysis

**Active reading.** Note the significance of financial performance in undertaking an internal analysis and resource capability audit. Financial performance can be the source of strengths and weaknesses in developing strategy, and access to finance can often be a restraining factor that limits the extent of strategy development.

One of the key areas in which the accountant can provide a substantial contribution to the internal analysis is in the assessment of the current and projected financial position and performance. It can be a source of both a strength and weakness and can have a significant influence on what strategies are adopted in the future and on the organization's ability to deliver or undertake the strategy in terms of financing the strategic initiatives. It is important to conduct a full analysis of the performance of the organization as a whole and of any business units that exist within the organization. This analysis can also be done on the major competitors as part of competitor analysis, where financial information is available to identify their financial strengths and weaknesses.

The basis of this analysis can be accomplished via financial ratio analysis. However, a more detailed analysis of product costs, product contribution, and customer profitability analysis should also be undertaken. The more detailed analysis is difficult for competitor analysis. Still, financial ratio analysis of competitors from the annual report and accounts is nearly always possible, certainly for competitors that are registered corporate entities. The analysis is not just a static analysis, that is, a review of one year, but an analysis over time to identify trends in performance and projections into the future. An organization's strategic plan will inevitably be expressed in financial terms and therefore establishing the likelihood of achieving the financial objectives, given the current strategy, and evaluating the impact of changes to strategy, is key to the strategic management process.

More information is provided on financial ratio analysis in Appendix B, Management accounting fundamentals. The ratios that are discussed, however, do not represent the totality of ratios that can be calculated but indicate typical high-level ratios that can be used to assess the financial performance of an organization or strategic business unit.

## 4.12 Summary

Management accounting can contribute to the internal analysis and resource capability aspect of the strategic management process in the following ways.



## **9Ms**

Assisting in the evaluation of the 9Ms elements and the financial impact of addressing any shortfalls (for example, replacing plant and machinery, costs of recruitment and training of employees, arranging suitable finance, and evaluating the profitability of new products and markets).

### **Product life cycle**

Ensuring that appropriate accounting techniques are used at each stage of the product life cycle and portfolio classification of products. Assisting in the development of new products via target costing and life cycle costing techniques and pricing (discussed in Chapter 7 of this learning resource).

### **Portfolio analysis**

Evaluating strategies emanating from the portfolio analysis such as financing investment requirements, monitoring the profitability and cash generation properties of product combinations, and changes in the balance of the product portfolio.

### **Customer profitability analysis**

Undertaking customer profitability analysis and working closely with marketing personnel to develop strategies to promote the acquisition and retention of profitable customers. Ascertaining and monitoring the costs and assisting in the development of strategies to enhance customer profitability across the whole portfolio of customers.

### **ABC and value creation system**

Using ABC techniques to aid the analysis of the value system to ascertain where value can be enhanced and support strategies of cost leadership and differentiation (discussed in Chapter 6 of this learning resource) throughout the value system.

### **Supplier analysis**

Assisting in the evaluation and monitoring of suppliers to ensure consistency with the overall competitive strategy of cost leadership or differentiation and working, where necessary, to reduce the incidence of supplier power (for example, assisting in negotiations with suppliers).

## **Financial evaluation**

Evaluating the financial strengths and weaknesses of the organization and developing a financial strategy to ensure that the right amount of finance is available, at the right time and for the right cost.

### **4.13 Review questions**

- (1) Briefly discuss the purpose of conducting an internal analysis or resource audit as part of the strategic planning process.
- (2) Outline and discuss typical areas of an organization that could be considered when conducting an internal analysis. You could use the 9Ms framework as a basis for the discussion.
- (3) Discuss the stages of the product life cycle and the potential strategies that could be adopted at each stage.
- (4) Discuss the management accounting techniques that could be used to aid the management of products during their life cycle.
- (5) Critically evaluate the use of portfolio analysis as a strategic planning tool. You should explain the Boston Consulting Group matrix, the categories of the product, the uses, and the difficulties of the model.
- (6) Discuss why it is important for an organization to understand its customers.
- (7) Critically evaluate the usefulness of customer profitability analysis in maximizing the profitability of the organization. You should explain the process of customer profitability, analysis, and the benefits and drawbacks of using the technique.
- (8) Discuss why is it useful to consider managing a portfolio of customers?
- (9) Discuss the value creation system and why organizations need to consider the concept of added value through the supply chain.
- (10) Why is it essential to consider supplier evaluation as part of an internal analysis?
- (11) Discuss the contribution that management accounting can make to the internal analysis and resource capability audit of an organization.

### **4.14 Case study activities 4 – 7 - HW Inc.**

The following activities relate to the case study in Appendix A of this learning resource. You may need to refer to the information contained in the Appendix to refresh your knowledge of HW Inc. Activities 6 and 7 require reference to information contained in Appendix A.

## Case study activity 4 - HW Inc. Portfolio analysis

### Boston Consulting Group portfolio analysis

Reece Jones, one of the independent members of the senior management team, has suggested that HW Inc. could use the Boston Consulting Group matrix to help assess its strategy at both company and store level. You have been asked to illustrate how the analysis could aid decision making about products and product groups within the company.

You have done a quick analysis and accessed the following information with which you could illustrate the principle behind the BCG portfolio analysis and how it might be used to aid decision making.

HW Inc. sells goods and services that can be categorized as: Home and Garden, Clothing, Electricals, Interior Design, and Financial Services.

You have worked closely with the marketing team at head office and ascertained that the sales of HW U.S., in relation to the total market, for the various categories in the U.S., is as shown in Table 4.4.

Table 4.4 Market share and market growth information

Category of goods and services	HW market share %	Market share of nearest competitor %	Market growth rate %
Home and Garden	15%	10%	12% - beginning to slow
Clothing	7.5%	10%	5% - and continuing at similar levels
Electricals	5%	4%	7% - but becoming highly competitive
Interior Design	2%	8%	30% - growth is linked to a trend among middle-aged couples
Financial Services	1%	5%	20% - looks as if this will continue, but the sector could become subject to increased government regulations

Other information provided on business units is as follows.

## **HW Inc. retail stores**

The retail stores have not been as profitable in recent years as the market has become extremely competitive, and customers are becoming more sophisticated and demanding in their expectations. One way in which HW Inc. has attempted to compete is always to offer the latest products. This makes inventory obsolescence an issue. Judging the amount of inventory to hold to satisfy customer demand, without having massive inventory write-offs, can be difficult. Inventory management is a problem in the clothing market where products are seasonal, for example, summer range, winter range, and so on. This sector is also heavily influenced by the latest fashions. However, a new inventory management system is helping with the problem. The growth of the 'click and collect' service is working well and, along with online sales, is set to grow in the future in all product groups.

The use of concessions (companies that effectively rent space in the HW Inc. stores) also enables HW Inc. to provide a wide range of products to its customers. HW Inc. plans to try and increase the number of concessions in the next few years as it shares some of the risks between the partner companies. However, HW Inc. does not want to diminish the HW brand as they also plan to continue to develop and sell their "own brand" products. They also wish to retain their manufacturing capability as this provides a useful diversification from retailing and enables more control over the quality of certain product lines in which they have a manufacturing capability.

Clothing sales have been slowing in recent years, but the furniture sales are strong. The electrical goods market is competitive, particularly the audio-visual and kitchen aids ranges. The increased competition in the specialist electrical goods retailers has also hit the departmental stores such as HW Inc., along with the need always to offer the latest products highlighting the need for proper inventory management.

## **HW Inc. Interior Design**

HW Inc. Interior Design has a range of corporate clients as well as retail customers. The design team copes with a variety of projects from single room design such as kitchen design for residential customers, to working with property developers and architects on both commercial and residential large-scale projects. They source products used in their designs from HW Inc. and a large number of other companies. They have a significant degree of autonomy over which products to recommend and are not necessarily tied to HW Inc. However, they always consider HW Inc. products and recommend them where they are suitable.

Dealing with several other companies helps the HW Inc. research and development team, who look after the HW Inc. product range, as the Interior Design division can gather and feedback information about the products of other manufacturers, and also customer trends. The Interior Design team are keen to expand their business and are looking to increase the number of corporate clients. In particular, they plan to target the state-owned and education sectors over the next few years. To do this, they will need to expand their design team and recruit additional staff with appropriate experience in those sectors.

## **HW Inc. Financial Services**

The Financial Services division is seeking to increase the number of credit card customers over the next few years and is also planning to diversify into insurance products. The division already offers extended guarantees and insurance on products sold in the HW Inc. stores, particularly on electrical goods, such as fridges, washing machines, TVs, and computers. The management team is thinking of expanding into life insurance, travel insurance, car insurance, and home and contents insurance. It is a competitive market, but they believe that the volume necessary to breakeven on these products could be achieved if they can attract existing HW Inc. customers and build on the reputation of the HW brand. This will then provide a stable platform on which to expand the business in the future.

More recently, they have seen the administration costs increase, and the management team have highlighted this as an area where improvements could be made, perhaps via a benchmarking exercise. They also recognize that an increase in business will require an increase in qualified staff, and by adding a range of new products, it will create the need for additional training of the existing team.

## **HW Inc. product development and manufacturing**

This division has seen material costs increase in recent years, and they are looking at the supplier relations to see if any savings can be made on the cost of materials. The division does not see a significant increase in business over the next few years but is seeking to maintain volumes at existing levels to retain the manufacturing capability, and within this to keep the product range up to date. This means replacing existing product designs with more up to date designs rather than developing entirely new product ranges. They see the next few years as being a consolidation of the division. Control of costs will be essential, and reviewing manufacturing methods is seen as part of that process, but they do not intend to spend a lot of new capital investment in plant and equipment. They feel that there is scope to improve in areas such as waste management, energy costs, productivity, and inventory management.

### **Activity requirements:**

- (a) Critically evaluate the usefulness of using portfolio analysis, such as the Boston Consulting Group (BCG) matrix, in developing strategies to manage diverse organizations such as HW Inc.
- (b) Using the BCG matrix, analyze and comment on the portfolio of products and markets in which HW Inc. operates.
- (c) Briefly outline the financial controls that could be used to monitor and assess products in each category of the BCG.

## Case study activity 5 – HW Inc. Customer Profitability Analysis

HW Inc. has found that a successful strategy of entering new markets and establishing the brand name is via mail-order or online catalog shopping. This keeps overheads low while building the brand and testing the market before opening high street stores. HW Inc. adopted this strategy in some areas of Africa by marketing clothing and accessories via a catalog and flyers. This worked reasonably well, and several stores have since been opened, but the mail-order side of the business is still quite strong. However, the operations director has become concerned about the growing marketing, distribution, selling, and administration costs of this activity.

The management team of HW Africa examined its customer ordering patterns for the past year and identified four different types of customers, as illustrated in Table 4.5. Much of the marketing is based around sending catalogs and flyers to all its customers several times a year. Orders are taken by mail, over the telephone, and more recently online. However, because of poor internet services in some areas, phone and mail orders are still used by a large number of customers. HW Africa maintains a Freephone number for customers to use when placing orders over the telephone, and, in keeping with its customer service promise, HW Africa prides itself on the personal attention it provides shoppers who order over the phone. All purchases are paid for by cheque or credit card. HW Africa has a very generous return policy if customers are not satisfied with the merchandise received. Customers use a pre-paid delivery service to return their unwanted items, which is paid for by HW Africa.

For ease of calculation, costs shown in Table 4.5 are provided in \$ amounts, but the local currency applicable to the specific country is quoted on the local websites.

Table 4.5 Sales and costs to serve for different types of customer

	Customer type 1	Customer type 2	Customer type 3	Customer type 4	Customer type 5
Initial sales	\$1,000	\$1,000	\$2,500	\$3,000	\$1,500
Number of items returned	0	4	2	14	2
Dollar value of items returned	0	\$200	\$500	\$1,500	\$250
<b>Total</b> number of orders per year – note each order is delivered separately	1	6	4	12	2

Analysis of the total number of orders by type					
	Customer type 1	Customer type 2	Customer type 3	Customer type 4	Customer type 5
Number of telephone orders per year included in total	1	0	0	12	0
Number of mail orders per year included in total	0	6	4	0	0
Number of online orders per year included in total	0	0	0	0	2
Average time spent on dealing with each phone order from customers; that is, time per order	15 mins	0	0	5 mins	0
Number of special deliveries	1	0	0	12	0
Number of regular deliveries	0	6	4	0	2

Prices are set so that the cost of goods sold is, on average, about 75% of the sales price. Note that returns are made at full sales value, so the cost of goods applicable is based on net sales, that is, initial sales less returns. HW Africa pays for the delivery costs of items (a small amount is built into the price of the product to cover the cost of deliveries), so delivery is free to the customer. Standard delivery is within 3 or 4 working days. However, if customers request a next day delivery or a weekend delivery, HW Africa makes a charge to the customer equivalent to the additional cost incurred. That is, HW still pays the standard delivery cost, but in these cases, any extra cost charged by the courier is passed on the customer. However, HW Africa does still incur an additional processing charge for arranging the special delivery.

HW Africa has developed the activity cost driver rates, shown in Table 4.6, for its support costs:

Table 4.6 Cost driver rates for costs to serve

<b>Activity</b>	<b>Activity cost driver rate</b>
Process mail orders	\$5 per order
Process phone orders	\$80 per hour
Process online orders	\$0.5 per order
Process returns (includes the cost of pre-paid postage)	\$15 per item returned
Standard delivery costs (incurred by HW Africa <i>on all deliveries</i> )	\$10 per delivery
<i>Additional</i> administration cost to arrange <i>special delivery</i> , that is, costs on top of standard delivery costs	\$4 per request
Maintain customer relations (send catalog and respond to customer comments and complaints)	Best estimate of \$50 per customer per year

**Activity requirements:**

- (a) Using activity-based costing, determine the yearly profit associated with each of the five customers described.
- (b) Comment on which customers are most profitable and why.
- (c) What advice do you have for HW Africa regarding managing customer relationships with the different types of customers represented?

**Case study activity 6 – HW Inc. Value creation system**

Using the information in the case study related to the operations and the factory unit (section A.6 and A.7), undertake a value creation system analysis for HW Inc. It may be helpful to consider the retail outlets and the factory separately, that is, illustrate using separate value creation system diagrams, as shown in section 4.9.

**Case study activity 7 – HW Inc. Financial analysis**

HW Inc. is undertaking a review of its future strategy and has obtained figures relating to the industry average in terms of the financial ratios, shown in Table 4.7.



Analyze the financial performance of HW Inc. based on the figures provided in Appendix A (section A.8 and Exhibit A) of the case study – the income statement (profit and loss account) and balance sheet for HW Inc. and compare your analysis with the industry average provided.

What are the trends arising from the analysis of HW Inc.? What messages does this provide for HW Inc.'s management?

Is there anything in Exhibit B of the case study that the management of HW Inc. should consider?

What other aspects of performance would you investigate?

Table 4.7 Financial ratios for the industry average

<b>Financial ratio</b>	<b>Industry average</b>
Gross profit percentage of revenue	30.5%
Operating profit percentage of revenue	2.5%
Return on net assets (profit for year/net assets)	3.5%
ROCE - operating profit as percentage of capital employed (operating profit/long term borrowings plus equity)	6.2%
Asset turnover (sales revenue/long term borrowings plus equity)	2.5
Non-current asset turnover (sales revenue/non-current assets)	3.0
Gearing percentage (long term borrowings/equity)	40%
Current ratio (current assets/current liabilities)	2.0
Stock turnover (inventory/cost of sales) *365 = number of days stock held	100 days
Receivable days (trade receivables/revenue) *365 = average days to collect	75 days
Payable days (trade payables/cost of sales) *365 = average days to pay suppliers	90 days

## 4.15 References

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