CHAPTER 4 - Internal analysis and resource capability audit

Contents

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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 eliminated loss-making customers.

Video link [Customer profitability analysis](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.

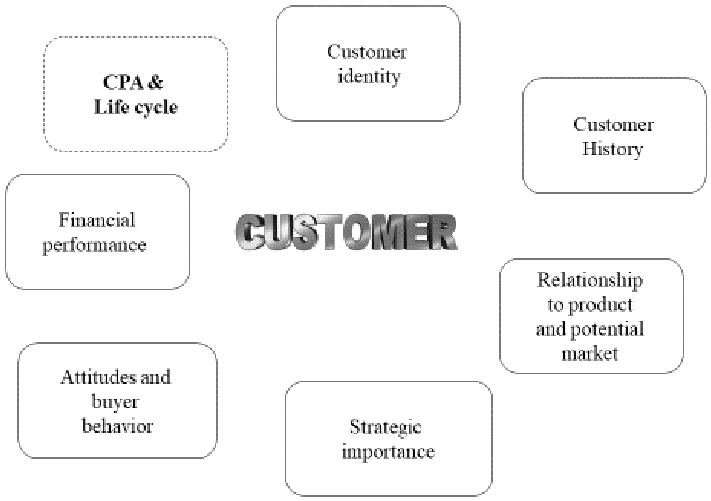

Figure 4.7 Aspects of understanding the customer

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).

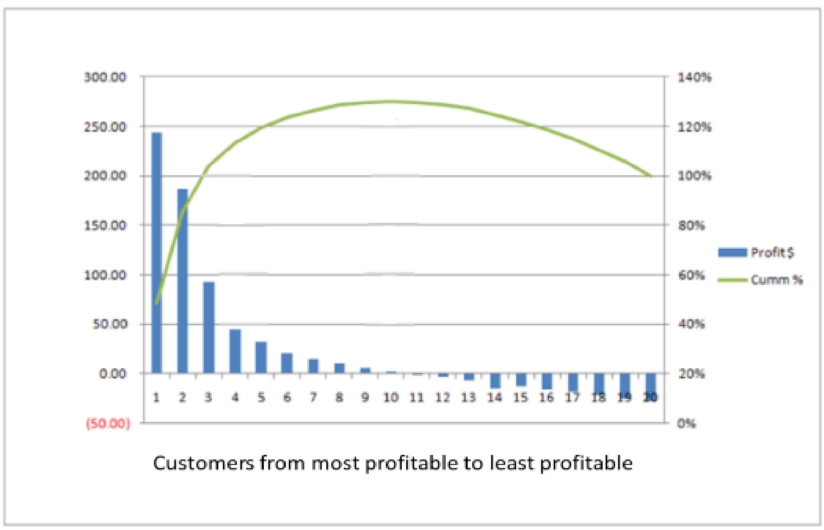

Figure 4.8 Whale curve showing cumulative profits from most profitable customers to the least profitable customers

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) x 16/365 days at 2%		
	Interest incurred on late payment $481,650 x 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)

	Month of January		
Activity volume	**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 profitabilty	$	$	$
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 profitably 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 (Paltschik 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 x 6 x 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:

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

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

Technical interface to customers	High	Low
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

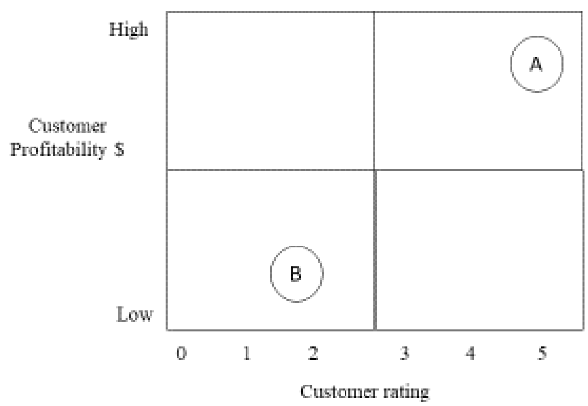

Figure 4.13 Customer-positioning grid

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.