Customer Accounting: Antecedents, Consequences and Moderators

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Abstract
The literature shows remarkably little effort in developing a framework for understanding the concept of customer accounting and its implementations. The authors synthesize the literature on the subject and provide a theoretical framework for future research. This is done by constructing a model that includes the antecedents and consequences of customer accounting, as well as the potential moderators, and from this developed research propositions. The implications of this research for management accountants are then discussed.

Key words
Customer Accounting, Management Accounting, Business Performance, Antecedents, Consequences, Moderators.

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1. Introduction

Customer accounting (CA) has attracted the attention of many researchers (Fish et al., 2017; Rust et al., 2004; Lemon et al., 2002). The concept of customer accounting (CA) emphasizes the measurement of customer profitability, and the development of taxonomy of customers using information from a company’s accounting database (Cäker, 2007). Guilding and McManus (2002) and Roslender and Hart (2003) suggest a link between CA and business performance by virtue of CA’s ability to identify key customers and thereby allowing management to target customers based on profitability and growth potential (Al-Mawali et al., 2012).

The need for CA is grounded on the growing popularity of Customer Relationship Management (CRM) as a strategic business orientation. What precisely is CRM? Payne (2000) asserts that CRM is concerned with the creation, development, and enhancement of individualized customer relationships with carefully targeted customers and customer groups resulting in the maximization of their lifetime customer value to a business. Sheth, Sisodia, and Sharma (2000) describe CRM as customer-centric marketing that puts the emphasis on understanding and satisfying the needs and wants of key customers or the most profitable customers rather than those of mass markets. A very important part of this definition of CRM involves the identification of strategically significant and profitable customers (Buttle, 2000), founded upon the proposition that not all customers are equally desirable (Ryals & Knox, 2001). Day (2000) points out that close relations are resource intensive, so not every customer is worth the effort. This aspect is particularly so for small firms which cannot invest as deeply or widely in their customers as big market players. Consider the Pareto 80/20 rule, applied in the finance industry: 80% of profits come from 20% of customers (Peppard, 2000; Ryals & Knox, 2001). More importantly, loyal customers are more desirable than deal-prone switchers (Page et al., 1996; Reicheld, 1996). Sheth and Sisodia (1999) depict that a small group of customers typically account for a large share of revenues and an even greater share of profits. These customers effectively subsidize a large number of marginal and, in many cases, unprofitable customers. Marketers’ determination of whether to build a relationship with a particular customer should, therefore, be based on the costs of serving the customer and the profitability of doing so. Essentially, the decision should enhance company profit by focusing on profitable customers via more personalized/customized offerings and reducing the subsidization of unprofitable customers. For unprofitable customers, the appropriate strategy may involve the outsourcing of these customers (Sheth & Sisodia, 1999), for example, contracting with an outside vendor to serve them, or charging them a higher service charge.

But how do we know if a customer is profitable and important to a firm? Customer profitability can be ascertained through a customer accounting system that can compute the lifetime value of the customer. A critical element in the customer accounting system is its capability to account properly for the resources used in carrying out CRM-oriented activities, and the present as well as future revenues from serving key customers. Under the system, firms must be able to account for the costs associated with acquiring and maintaining customers, based on which a proper pricing schedule can be constructed to account for customers of different levels of profitability.

Although recent years have witnessed a modest increase in the number of studies promoting accounting analyses based on individual customers or customer groups (see, for example, Fish et al., 2017; Guilding & McManus, 2002), the number of such studies remain small. This is surprising in light of the high value given by managers worldwide to customer relationship management. In an attempt to tackle this deficit in our body of knowledge, the objectives of this study are to
develop a model to delineate the antecedents, consequences, and moderators of CA, and to formulate testable hypotheses for future research. The proposed hypotheses will, therefore, answer the following questions:

What conditions, internal and external, favor or inhibit the adoption of CA?
Whether or not CA leads to certain commercial outcomes?
What factors moderate the relationship between CA and these commercial outcomes?

2. Customer Accounting: The Definition

As with most novel fields of inquiry, CA has yet to reach the stage of having a standard definition and classification system. However, it may be helpful to start with the following four major versions of CA highlighted by Guilding and McManus (2002):

a. Customer profitability analysis, operationalized quite simply by calculating the profit earned from individual customers, based on the costs and sales that can be traced to each customer (see for example, Juras & Dierks, 1993; Smith & Dikolli, 1995).

b. Customer segment profitability analysis - same as customer profitability analysis except for that customer segments, instead of individual customers, form the unit of analysis (see for example, Quain, 1992; Ward, 1992).

c. Lifetime customer profitability analysis - this method computes the lifetime value of customers by making cost and profit projection over the remainder of the lifetime of the trading relationship (Rust et al., 2004; Selden & Colvin, 2003; Reinartz & Kumar, 2003; Mittal & Kamakura, 2001; Reinartz & Kumar, 2000; Kidd, 2000). Specifically, with purchase figures obtainable easily from a customer accounting system, the lifetime value of a key customer or segment of customers can be assessed by using the following formula provided by Reinartz and Kumar (2003):

\[
\text{NPV of ECM}_i = \text{in} \times \text{AMCM}_i \times n
\]

where \( \text{NPV} \) = net present value
\( i \) = the \( i \)th customer
\( t \) = the month in which NPV is estimated
\( n \) = number of months beyond \( t \)
\( l \) = lifetime duration of customer \( i \)

\( \text{ECM}_i \) = expected contribution margin of customer \( i \) for a given month \( t \)

\( \text{AECM}_i \) = average contribution margin of customer \( i \) in month \( t \). \( \text{AECM}_i \) is computed by summing all previous purchases made by the customer and multiplying the sum by \( m\% \) to reflect the gross margin (that is, to account for the cost of goods sold). Then the cost of actual servicing/marketing cost is subtracted to obtain the contribution margin. \( \text{AECM}_i \) should be updated dynamically whenever a new purchase is made so that the \( \text{AECM} \) estimate can be smoothed and used as a baseline for evaluating future purchases between \( t \) and \( l \).

\( \text{P(Alive)}_i \) = probability that customer \( i \) is alive in month \( n \), which can be estimated by using the NBD/Pareto model of Reinartz and Kumar (2003).
NPV of ECMit is the estimated lifetime value of the ith customer. A positive net present value indicates that the customer is of important economic value to a firm. For new customers where previous purchase patterns are unavailable, the NPV figure can be estimated from existing customers with the closest profile.

d. Valuation of customers or customer groups as assets - Customer relationship management advocates treating customer relationships as assets in a company (Morgan & Hunt, 1994; Wilson, 1986; Yau et al., 2000; Berry & Parasuraman, 1993; Grönroos, 1990; Berry, 1977). According to Ward (1992), Foster and Gupta (1994) and Guilding and McManus (2002), the value of a customer’s relationship with a company can be assessed in like manner as valuation of any other asset in the company using valuation models like discounted cash flow analysis, option pricing models or comparables.

Nowadays, with the rapid development of computer technology and big data algorithms, the assessment of customer value can be done almost instantaneously in real-time. In this research, however, we are interested in the usage of customer accounting in a company, not the exact algorithm about how customer value can be calculated. As such, we include all the above four in the operational definition of customer accounting. That is, we assess customer accounting based on the extent to which the company has used any one or more of the above methods in assessing customer value. Specifically, we ask to what extent a responding company has done the following in the day to day operation of their business, and how this usage would affect the marketing performance of the company:

a. Customer accounting (appraising profit, sales, or present value of earnings relating to a customer).
b. Customer profitability analysis (calculating profit earned from a specific customer).
c. Lifetime customer profitability analysis (extending the time horizon for customer profitability analysis to include future years).
d. Customer segment profitability analysis (performing a customer profitability analysis, on a market segment or customer group basis).
e. Valuation of customers or customer-groups as company assets.

2. Research Propositions

Figure 1 is a conceptual framework showing the inter-relationships between CA, the antecedent conditions that foster or hinder the development of CA, the consequences of CA and the moderator variables that affect the relationship between the use of CA and business performance. It serves as the foundation of the discussion which follows.
3.1 Antecedents of CA

We divide the antecedent factors that may affect the level of CA usage in a firm into three groups: top management factors, organizational structure factors and government policies.

3.1.1 Top management factors

a. **Top management support**: Most organization-wide projects require top management support for their adoption, and CA systems are no exceptions. CEOs must be oriented and committed to CRM if CA systems, which support CRM, are to be implemented successfully. CEOs must give clear instructions to and instill positive values in the entire corporation regarding its commitment to building a relationship with customers. Hence, we propose that:
P1: The greater the support from top management towards the adoption of customer relationship management, the higher the usage rate of CA.

b. **Management consistency**: Argyris (1966) argues that a key factor affecting the implementation of company policies is the degree of inconsistency between what top managers say and what they do. Such inconsistency in the area of CRM may make junior managers feel ambivalent as to the amount of effort and resources they should allocate to CRM activities, which may lead to a lower usage rate of CA. Hence, we propose that:

**P2a**: The greater the inconsistency over time between top management communications and actions relating to CRM, the lower the usage rate of CA.

**P2b**: The greater the junior managers’ ambivalence about the organization’s desire to be CRM-oriented, the lower the usage rate of CA.

c. **Top management profile**: Rogers (1983) and Hambrick and Mason (1984) suggest that top managers who have extensive formal education, and demonstrate upward mobility are more likely to pursue innovative practices like the adoption of CA systems. These suggestions lead to the following proposition:

**P3**: The greater the top managers’ educational attainment and upward mobility, the higher the usage rate of CA.

### 3.1.2 Organizational characteristics

a. **Corporate culture**: The corporate culture of a firm and the style of its leadership will greatly affect the adoption of a particular business strategy (Christensen, 1997; Deshpande, Farley & Webster 1993; Treacy & Wiersema, 1997). For example, firms that are market-driven rather than technology-driven are conceivably more likely to engage in customer-centric activities, including the use of CA systems. Hence, we hypothesize that:

**P4**: A corporate culture characterized by market-driven sentiments uses more CA than one that is not.

b. **Reward system**: A company’s reward system affects the attitudes and behaviors of its employees (Hopwood, 1974; Lawler & Rhode, 1976). Webster (1988) argues that if staff members are evaluated primarily on the basis of short-term profitability and sales, they would neglect market factors, such as customer satisfaction, which are important to the long-term profitability and relationship building capacity of an organization. Conversely, companies that reward staff on the basis of market factors may generate a demand for and need the support of CRM structures, including CA systems. The preceding discussion suggests that:

**P5**: The greater a company’s reliance on market-based factors for evaluating and rewarding managers, the higher its usage rate of CA.
c. **Market orientation**: Guilding and McManus (2002) suggest that traditional accounting practices focus internally on an organization, which is not in keeping with the external, customer focus possessed by market-oriented firms. Market orientation refers to the extent to which companies practice the marketing concept by identifying and satisfying customers' needs through a coordinated effort of various functions in the company (Saxe & Weitz, 1982; Kohli & Jaworski, 1990; Narver & Slater, 1990; Siguaw, Brown & Widing, 1994). Organizations that monitor and are sensitive to customer needs will take active steps to fulfill those needs. Hence, as suggested by Guilding and McManus (2002), CA with its customer focus is expected to have a higher uptake in market-oriented firms, both because of the larger marketing budgets set aside by market-oriented firms to engage in CRM activities such as CA, and because CA is important to guide these market-oriented firms on how to spend their large marketing budgets wisely. This line of reasoning breeds the hypothesis that:

\[ P6: \text{The greater the market orientation of a firm, the higher its usage rate of CA}. \]

### 3.1.3 Government policies

Public policy can affect the use of CA. There are several potential issues in relationship building activities that may come under government scrutiny (Bloom, Milne & Adler, 1994). For example, strict privacy laws that restrict the collection and use of customer data would conceivably hinder the development and use of CA systems. Finally, there may be pressure against price discrimination that makes it difficult for a firm to charge unprofitable customers higher prices. Hence, we hypothesize that:

\[ P7: \text{The stricter the laws and the stronger the public pressure are (1) supporting privacy protection and (2) against price discrimination, the lower the usage rate of CA}. \]

### 3.2 Consequences of CA Usage

Relationship building activities would intuitively lead to a stronger focus on key customers, improved service delivery and more strategic coordination of sales activities, all of which are important factors for superior business performance, greater customer satisfaction and more repeat business from customers. The link between service quality and business performance (Buzzell & Gale, 1987; Zeithaml, 2000), and that between service quality and customer satisfaction (Bolton, 1998; Bolton & Drew, 1991; Rust, Zahorik & Keiningham, 1994; Zeithaml, Berry & Parasuraman, 1996) are amply established in the literature.

Hence, we hypothesize that:

\[ P8: \text{The higher the usage rate of CA, (1) the greater the customer satisfaction and (2) the greater the repeat business from customers}. \]

\[ P9: \text{The higher the usage rate of CA, the better a firm’s business performance}. \]

\[ P10: \text{Service quality mediates the relationship between the usage rate of CA and business performance}. \]

### 3.3 Environmental Moderators of CA - Business Performance Linkage
It is interesting to see if the use of CA would always positively affect a firm’s business performance. We postulate that there are numerous environmental variables, of which three will be discussed, that may moderate the impact of the use of CA on business performance.

One distinct advantage of CA is that it helps service providers identify the costs and added values associated with customized products and services. Hence, one moderator may be whether or not target customers prefer customized products and services, which are usually more expensive. There are industries in which customers may not mind standardized products. Commodity-type products like paper towels and rubbish bags may well fall into this category. For these types of products, consumers may prefer cheap to personalized goods. On the whole, it seems that personalization only makes sense for products that are linked with emotions, self-concept, self-worth, and self-esteem (Scanlan & McPhail, 2000). That is:

**P11:** The greater the demand for customization of a product or service, the stronger the relationship between CA usage and business performance.

The degree of competition in an industry should have a tremendous impact on the link between CA and business performance. Drawing on Jaworski and Kohli (1993) and Slater and Narver (1994), competitive intensity is determined by the number and strengths (e.g., market share) of competitors present, the directness of competition from these competitors (e.g., geographically and in the relatedness of products provided) and the level of use of marketing techniques such as advertising and pricing tactics by competitors, and the amount of resources devoted by them to marketing. In a strongly competitive market environment, an organization must customize its offerings to customers’ specific and changing needs and preferences to ensure that customers select its offerings over competing alternatives (Bellis-Jones, 1989; Kohli & Jaworski, 1990; Rolfe 1992; Foster & Gupta, 1994; Kaplan & Norton, 1996). Greater customization of goods and services, and other innovative marketing practices which tend to proliferate in highly competitive environments (Reichheld & Sasser, 1990; Reichheld, 1993; Evans & Berman, 1994), should make CA a more performance-enhancing activity. This is because CA can ensure that the costs of these innovations are invested first and foremost on customers and products with the highest potential to yield more profits as a result. Moreover, as intense competition generally exerts downward pressure on profit margins, CA may become particularly efficacious in boosting profit margins by identifying profitable and unprofitable groups of customers, thereby aiding in the assessment, targeted expansion, and rationalization of the customer base. On the contrary, a monopoly may perform well regardless of whether or not it customizes its offerings to suit changing customer preferences (Houston, 1986), or employs other innovative marketing tactics, or evaluate its customer base. Hence:

**P12:** The stronger the competition, the stronger the relationship between CA usage and business performance.

In the absence of changes in the competition, competitive pressure is secondarily increased by a weakened economy. The following hypothesis is therefore almost a corollary of the previous one:

**P13:** The weaker the economy, the stronger the relationship between CA and business performance.

### 3. Managerial Implications
Our thirteen propositions have important managerial implications. First, CA may or may not be very desirable for a business, depending on many firm level and environmental factors. We believe that though CA is likely to be related to business performance in general, under certain conditions, it may not be critical. CA is useful only if the benefits exceed the cost of the committed resources to build and use the system. For example, under conditions of limited competition, stable and conforming market preferences and booming economies, CA may not be related strongly to business performance. Second, the propositions clearly delineate the factors that can potentially foster or discourage the usage of CA. Some of these factors are controllable by managers and therefore can be adjusted by them to improve the usage of CA in their organizations in situations where CA is beneficial for the organization. For example, we think that senior managers must themselves be convinced of the value of relationship marketing and communicate their commitment to it clearly and consistently for CA endeavors to be successful. Overall, our research propositions promise to give managers a comprehensive view of what CA is, factors that foster or hinder its development in a company, and its likely consequences under various environmental conditions.

Finally, a change in accounting systems may involve redistributions of power, costs, and benefits within an organization. A shift in focus may even entail job losses to some people. Hence, intending practitioners of CA must not only develop positive attitudes toward change and a willingness to adopt a change-oriented philosophy but also possess the capacity to handle the political issues arising from the redistribution of resources and power amongst departments if a successful CA system is to be established.

4. Conclusions

We have attempted to clarify the nature of CA, and identify the antecedents and consequences of CA usage. We have also introduced factors as potential moderators of the impact of CA on business performance. Our thirteen propositions and integrative framework represent efforts to build a foundation for the systematic development of a theory of CA. However, the objective of our research is theory building rather than empirical testing. Much work remains to be done in empirically testing our propositions.

5. References


