

## **An empirical study on customer profitability accounting, customer orientation and business unit performance**

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### **Abstract**

Customer relationship management (CRM) literature argues that to enhance corporate profitability marketing and sales emphasis should foremost be directed to the most profitable customers. Today, however, we have little empirical evidence on how organizations assess customer profitability, and what are the performance implications of customer profitability assessment. Furthermore, it would be interesting to learn how the role and depth of CRM orientation in corporate strategy and operations affect the use of customer profitability analyses. This study aims to explain whether an organization's CRM-orientation has an impact on the form and use of customer profitability accounting. We examine the relation between a company's CRM orientation, customer profitability accounting practices and business unit economic performance. Data from a recent survey (564 respondents, response rate 22%) conducted in Finland are used for our empirical investigation. Our results suggest that an organization's CRM orientation has a direct impact on performance, as well as on the customer profitability accounting practices. The use of customer profitability accounting practices moderates the relationship between the organization's CRM orientation and economic performance. The results give support to the theory that the use of sophisticated customer profitability analysis embedded within an organization's customer profitability accounting practices supports companies' efforts to improve their performance with CRM.

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## **1. Introduction**

In the quest for improved business performance companies are increasingly focusing on managing customer relationships. Customer relationship management (CRM) theory suggests that companies should identify their most profitable customers and focus on building and nurturing these relationships well. This focus is assumed to yield a better return on the marketing investment, and to improve corporate profitability. To pull off the benefits of focusing on and developing profitable customer relationships on corporate performance, a company needs a clear CRM strategy. That is, how a company defines CRM in its strategy, how it manifests in its organizational structure and procedures, and how it is implemented in sales and marketing operations. This strategy, i.e. the extent to which a business unit has directed its efforts towards facilitating the effective management of customer relationships is referred here as a CRM orientation.

A strategy stressing the allocation of the company's sales and marketing resources on some customers more than others should be based on careful analyses of customer profitability and how different kinds of customer portfolios affect marketing and sales effectiveness and corporate performance. In effect, a firm should know how current customer relationships differ in profitability, as well as what customer segments offer the highest potential for future profitable relationships (van Raaij et al. 2003). How companies analyze customer profitability and how they use customer profitability accounting (CPA) for this has, however, remained a largely unknown issue.

The link between CPA practices, CRM oriented strategy, and business unit performance has received surprisingly little interest in academic research. Although the relationship between strategy and management control has been studied, research has mainly focused on business level strategies (see Langfield-Smith, 1997). Studies on operational strategies and management control systems (MCS) have mostly dealt with manufacturing and quality strategies. Furthermore, customer profitability has not been addressed as a part of MCS construct in these studies. A recent paper by Guilding and McManus (2002) is the first one to assess the relationship between market orientation and customer accounting. Hence, we do not have much evidence on how customer profitability is assessed, what explains how it is done, and does more sophisticated assessment pay off, either alone or in conjunction with customer related strategies.

In defining accounting and control we follow the definitions provided by Chenhall (2003). Management control systems (MCS) refer both to management accounting systems (MAS; systematic use of management accounting) and other forms of controls. In this study, our prime focus is on customer profitability accounting practices. Hence, we aim to explain the form, use and outcome of a part of MAS rather than whole MCS. Based on marketing literature, we assume that the main role of customer profitability assessment is to supply information to assist managers in

their decision-making rather than to reduce goal divergence problems (see also Davila, 2000).

In this study the ultimate question is whether the development and use of more sophisticated customer profitability analysis pays off. Moreover, is this pay off contingent on business unit's level of CRM orientation? We assume that firms are in different stages in their CRM orientation and CPA practices, and that these differences have an impact on performance (see Dunk, 1989; Milgrom & Roberts, 1992; Ittner & Larcker, 2001; Bjornenak, 1997; Malmi, 1999). This is in contrast to selection or congruence approach adopted by some researchers, who assume that only the best combinations of strategies and MCS survive to be studied. Under selection/congruence approach we should not expect to see managerial practices to be related to the performance (Drazin & Van de Ven, 1985; Ittner & Larcker, 2001; Gerdin & Greve, 2003).

This study contributes to the current literature in three ways. First, we develop accounting literature by studying the effects of a CRM oriented strategy on management accounting, and the performance implications of these. Our results suggest that a CRM orientation has an impact on the sophistication and use of customer profitability accounting. We also show that CRM orientation has a direct impact on performance, and that the impact is stronger given the use of sophisticated CPA. Hence, the results give support to the theory that organizations investing in CRM strategy will benefit from investing in sophisticated CPA practices as well. Second, we provide new measurement constructs for both CRM orientation and to the sophistication and use of customer profitability accounting. Although not without limitations, they provide at least a basis for further development. Finally, we provide some descriptive empirical evidence on how customer profitability is actually assessed in contemporary organizations.

The remainder of the paper is structured as follows. The following section reviews related literature and develops our hypothesis. Section 3 describes the research method. Section 4 reports our results, followed by discussion and conclusions in section 5.

## **2. Literature review and hypothesis**

So far, management accounting research literature has devoted limited attention to customer profitability (Foster & Gupta, 1994; Guilding & McManus, 2002; Luft & Shields, 2003; Chenhall, 2003). Practice oriented literature includes few accounts arguing for the use of Activity-based costing to improve customer profitability accounting (Kaplan & Cooper, 1998; Kaplan & Narayanan, 2001). In the marketing literature, there has been a growing interest on the issue. Despite this, the link between customer relationship management and the analysis of customer profitability has not been researched. In management accounting literature, however, there have been calls for studying contemporary dimensions of management control systems (MCS) (e.g. Atkinson et al., 1997) and Chenhall (2003, p.130) argues that

there is a pressing need for studies into situations in which contemporary MCS may be best suited.

Past research on MCS in customer relationships has mainly examined the use of non-financial performance measurement and customer information in general (Perera et al., 1997; Mouritsen, 1997; Vaivio, 1999; Davila, 2000). These studies provide some evidence on customer orientation having an impact on MCS. Total Quality Management appears to be one of the driving forces behind customer orientation, but the results on performance implications are far from conclusive. We may, however, question the definition of customer orientation adopted in some of these studies. As customer relationship management is a broad strategy with multiple operations to keep customers and develop their profitability, there is a need to assess how companies' comprehensive efforts to nurture customer relationships affect performance (see e.g. Reinartz & Kumar, 2000). We aim to contribute to the accounting literature by defining customer orientation based on marketing literature, and not relying on TQM or Advanced Manufacturing Technologies as surrogates for customer strategies.

The relationship between strategy and MCS has been studied in the accounting literature (for a review, see Langfield-Smith, 1997). It has been suggested that the MCS should be tailored explicitly to support the strategy of the business (Dent, 1990, Simons, 1987, 1990; Samson et al., 1991; Shank & Govindarajan, 1993) and there is some evidence that tailoring may pay off (Govindarajan & Gupta, 1985; Govindarajan, 1988). However, as Langfield-Smith (1997) points out, much of the research that studies the relationship between MCS and strategy focuses on business strategy as opposed to corporate or operational strategy. CRM may be regarded as an operational strategy, addressing how sales and marketing resources are targeted at chosen valuable customers, and how the sales and marketing functions contribute to the competitiveness of the organization. Hence, it is questionable whether the findings from previous literature on business strategy and MCS are applicable to the study of customer relationship strategies and CPA practices.

The link between operational strategies and MCS has been studied in the context of manufacturing strategies. Daniel and Reitsperger (1991, 1992) studied the nature of the control systems that support particular quality strategies. They found that different approaches to quality are supported by emphasis on different features of MCS. Their results support the idea that MCS need to be tailored to support manufacturing strategies. Ittner & Larcker (1997) draw similar conclusions. They found that organizations placing greater emphasis on quality in their strategic plans do tend to make greater use of quality-related strategic control practices. They found, however, that several control practices are negatively associated with performance.

The only study so far addressing customer strategies and customer accounting is the one by Guilding and McManus (2002). They found that increased market orientation is associated with use and perceived merits of three out of five studied customer

accounting methods, i.e. “customer accounting”, “lifetime customer profitability analysis” and “valuation of customers or customer groups as assets”. They did not study performance directly. We seek to extend their study by elaborating on customer profitability accounting, studying CRM orientation instead of market orientation and addressing performance impacts. CRM orientation explicitly defines how a company is gearing its resources into customer relationship development, whereas market orientation is about how market information is used. Hence, CRM orientation provides more encompassing coverage of sales and marketing strategies and procedures than market orientation.

Overall, these strategy-MCS studies suggest that organizations with different strategies put emphasis on different MCS features. This gives some support to the statement, or theory, that MAS should be tailored to support CRM strategy. Much of the literature above can be regarded as contingency based, which assumes that there is no single best way of designing MCS, but the optimal design is contingent on the circumstances in which accounting and control is practiced. Although contingency-based research has been severely criticized (e.g. Otley, 1980; Dent, 1990; Chapman, 1997; Langfield-Smith, 1997), criticism is mainly directed to methods, concepts and assumptions used in this research stream rather than the idea of contingency as such (Hopwood, 1989; Chapman, 1997; Gerdin & Greve, 2003). Hence, we regard it worthwhile to attempt to develop and test (contingent) theories explaining the appropriate design and use of MCS to ensure good performance (cf. Ittner & Larcker, 2001). We use plural form theories deliberately as we concur with Chenhall (2003) that there is no single “contingency theory” of accounting. As we do not have a theory explaining the use and impacts of customer profitability accounting, we aim to follow the first steps taken by Guilding and McManus (2002) towards such theory (we use word theory in its broadest sense, see Llewellyn, 2003).

#### *CRM Orientation and its impact on performance and CPA Practices*

Based on marketing (CRM) literature we assume that a firm’s focus on developing profitable and lasting relationships with their customers have a positive impact on firm performance (see arrow H1 in Fig. 1). Customer relationship management may help organizations retain their existing customers, reducing a need to build costly new customer relationships. It may also improve customer satisfaction, inducing customers to increase their purchases. Satisfied customers may also spread positive word-of-mouth and recruit new customers, which decrease customer acquisition costs. Cost to serve existing customers may also be less than that of new customers. Assuming that sales on average generate profits, focusing on developing profitable customer relationships should lead to an improved financial performance (for review of this literature see e.g. Reinartz and Kumar 2000). Moreover, improved customer retention and satisfaction may both be regarded as reducing the risk associated with cash flows from those customers. Risk is one component in any valuation model, but reduced risk may also contribute to profitability by allowing managers to devote their scarce time elsewhere.

We assume customer relationship management to have an impact on performance irrespective of CPA practiced. Hence, our first hypothesis to be studied is:

Hypothesis 1. The greater the CRM Orientation of a business unit the better that unit's performance.

We assume that companies investing in CRM benefit from reliable customer profitability information. The accounting literature suggesting that companies modify their accounting systems to fit their strategy supports this. Customer profitability can be assessed in a number of ways. Assessment may vary from sales minus direct costs to budgeted lifetime sales minus direct and indirect costs (Foster & Gupta, 1994; see also van Raaij et al. 2003). Moreover, assessment may include effects certain customer or customer group have on the revenues and costs form other customers, e.g. in terms of new sales due to the reference provided. Moreover, marketing literature argues for customer value (Bolton & Drew 1991), customer lifetime value (Berger & Nasr 1998; Reinartz & Kumar 2000), and customer equity (Blattberg & Deighton 1996; Rust et al.2004), instead of using the term customer profitability. Hence, as there are number of ways to assess customer profitability and value, we assume that those organizations investing in CRM are more willing to invest in more sophisticated customer profitability accounting than their counterparts. Being able to identify the most profitable customers is not enough, however. An organization needs to use this information to direct its business. Diffusion literature, as well as literature on ABC (Bjornenak, 1997, Gosselin, 1997, Malmi, 1999), makes a distinction between the adoption of a system (referring to decision to apply it) and its implementation (referring to its actual use).These lead us to examine our second hypothesis (arrow H2 in Figure 1.).

Hypothesis 2. The employment of CPA practices in a business unit increases with that business unit's CRM Orientation.

#### *CPA Practices and performance*

Customer profitability accounting may be assumed to have an impact on performance both alone and in conjunction with the firm's efforts in developing customer relationships. Normative accounting literature suggests that once you calculate your costs right you make the right decisions (Cooper & Kaplan, 1988). Hence, the more sophisticated the analysis, the more likely the decisions will lead to a favorable financial outcome. This favorable outcome does not necessarily require companies to adopt CRM strategy and practices. Although normative literature is mostly silent on the costs of developing more sophisticated systems, it usually assumes some form of cost-benefit analysis guides adoption decisions. This would suggest that the benefits from enhanced decision-making outweigh the costs of developing a system. Therefore, we study the following hypothesis (arrow H3 in Figure 1.)

Hypothesis 3. Increasing employment of CPA practices in a business unit increases that unit's performance

Finally, we study the impact of CPA on performance in conjunction with a CRM orientation. Based on the premise that marketing and sales activities should be directed to the most profitable customers, we theorize that this positive impact of a firm's efforts to develop and retain valuable customer relationships (arrow H1) is stronger the better the quality and use of customer profitability information. In other words, we assume CPA to moderate the relationship between customer relationship management and performance (arrow H4 in Figure 1). We assume the joint impact of a CRM orientation and CPA on performance to be greater than the impact of either customer relationship strategy or CPA alone. Hence, it would pay off to develop CPA when you adopt a customer relationship strategy. A related study by Chenhall (1997) supports this proposition. He studied operational strategy (TQM), manufacturing performance measures and organizational performance. His results provided support for the proposition that enhanced performance will be associated with the interaction between well-developed TQM programmes and a reliance on manufacturing performance measures. His results suggest that higher performance is associated with the combination of TQM and reliance on manufacturing performance measures compared to TQM without such measures. Hence, we predict that

Hypothesis 4. Employing CPA Practices in a business unit positively moderates the relationship between CRM Orientation and that unit's performance.

The research model in which we explain the effects of CRM Orientation and CPA Practices on an organization's performance is illustrated in Figure 1 and the definitions of the constructs are summarized in Table 1.

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Insert Figure 1 Here

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### **3. Method**

To test the predictions from our theoretical model empirically, we employed a questionnaire survey methodology and estimated the model using partial least squares (PLS). We first discuss the sample of firms we obtained, the data collection procedure, then our measures, and finally the method of estimation.

#### *Sample*

An email survey was administered to 2486 individuals in 677 organizations with at least 100 employees. Our target population included all firms employing more than 100 people in Finland. To ensure sufficient variance in the data, the sample was selected to include organizations operating in diverse manufacturing and services arenas. Using this sampling procedure introduced deliberate variation with respect to the elements of the accounting practices and, hence, allowed for the variation in relationships that we wanted in our study.

#### *Data collection procedure*

The unit of analysis is the business unit of the organization<sup>1</sup>. Using the business unit as the unit of analysis is appropriate to study the performance phenomenon and is consistent with the prescriptions of our framework. From a theoretical point of view, the core variables exist at the level of the business unit, and the key informants are the managers who have operational responsibility for that business unit (e.g., Kumar, Stern & Anderson, 1993). These managers are knowledgeable about the business unit selected and, hence, capable of completing the questionnaire regarding the business unit and associated facets.

A national company directory has been used to identify respondents; and the questionnaire has been sent to managers in following three job categories: 1) general management, administration and development; 2) sales, marketing and customer service; 3) accounting and finance. These managers are key informants having some functional responsibility for respective business units. By sending the questionnaire to more than one person in most organizations we aimed for more reliable data. Each person received an e-mail invitation containing a link to an Internet site including the questionnaire; 210 emails could not be delivered and, thus, were returned. Given our unit of analysis, managers were first asked to identify one specific business unit in which they were involved and they were then instructed to use this specific business unit as the point of reference in answering the remainder of the questionnaire.

In the e-mail invitation we asked respondents to nominate another person in their organizations if they felt someone else would be better qualified to answer the questionnaire. Some of those who received the invitation redirected it directly to such a person. Based on these recommendations we sent additional new invitations to 242 individuals of which roughly half accepted it. All those who did not respond within a week were sent one remainder by e-mail.

We received 564 qualified responses from 354 organizations. The response rate is 22% and sample represents 25% of all Finnish companies employing more than 100 people. This response rate is typical given the complexity of the survey and nature of study. Furthermore, as the purpose of this study is to develop and test theory (i.e.,

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<sup>1</sup> In small organizations the organization might, in fact, be the business unit, whereas in medium and large organizations multiple business units build the organization.



to empirically assess the hypothesized effect) as opposed to providing representative descriptions of all Finish companies employing more the 100 people, the response rate and total number of usable responses is acceptable for the purpose of this study. Demographic data related to the respondents' occupation, organizational size and industry are provided in Appendix 1.

As we received more than one response from a number of organizations in regards to their nominated business unit, we took an average of responses coming from each single organization to give each organization a similar weight. Using an average of multiple responses regarding one specified business unit from different respondents within one company provides a more reliable view than selecting one single answer to represent that organization. This has resulted in responses about 354 business units for our analyses.

### *Construct measurement*

Given the complexity of the issues covered by the research and the fact that there was no existing single instrument upon which we could draw, we developed our own instrument based on managerial interviews and related scales published previously. The questionnaire consists of both formative measures—i.e., observed indicators that cause or form the latent constructs—and reflective measures—i.e., observed indicators that are caused or formed by the latent constructs (Bollen, 1989). A single-item measure has been used for performance. Formative measures with second-order reflective scales were used for the constructs of CRM Orientation. In the case of the remaining construct, CPA Practices, it was difficult, theoretically, to measure the relevant information about the constructs. In this case, we relied on calculative measurement approach combining second-order reflective and formative scales.

We chose the formative scales because each of the constructs, or components of a construct in the case of our calculative approach, is viewed as an explanatory combination of its indicators, representing, for example, independent dimensions of CRM Orientation; i.e., the construct is understood as a set containing heterogeneous, independent components of which each represents a distinct and unrelated facet of the construct within the theoretical context in which the construct is employed (Fornell and Bookstein, 1982; Fornell, 1987). In contrast, in the second-order reflective scales all observed indicators are viewed as being caused by one underlying common dimension sharing a common core of the three dimensions forming CRM Orientation; i.e., the indicators being included have unidimensional representation within the theoretical context in we used them (Bagozzi, 1982; Fornell and Bookstein, 1982; Bagozzi and Fornell, 1982).

Ultimately the appropriateness of measurement structures is determined theoretically. However, incorrect structures can imply misspecified estimation. To aid in justifying our structure we considered the carried out confirmatory factor analysis to assess the reliability (i.e., unidimensionality) of the reflective structure

for each of the three dimensions (i.e., Strategic CRM, Organizational CRM and Systems CRM) of CRM Orientation. Table 2 summarizes the questions used for measuring the respective constructs. Each is discussed in detail in the sections below. The statistics for the assessment of our reflective scales and formative scales are reported in Table 3.

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Insert Table 2 Here

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Insert Table 3 Here

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### *CRM Orientation*

*CRM Orientation* refers to the extent to which a business unit has directed its efforts towards facilitating the effective management of customer relationships. It is understood as a set containing three heterogeneous, not necessarily dependent components. The components that were relevant, according to the interviews undertaken with business unit managers, consisted of the following three: *Strategic CRM*, *Organizational CRM* and *Systems CRM*. Therefore, the construct was measured by a three-item, formative scale employing the factor score for the reflective scales measuring these three dimensions.

*Strategic CRM* refers to the analysis and planning processes that are focused on the management of customer relationships. A five-item, five-point reflective scale ranging from "completely disagree" to "completely agree" measured this construct. These items included statements such as "We have customer strategy developed for customer segments or for all customers" and "Our marketing plan includes different budgets for customer recruitment, maintenance and development". The confirmatory factor analysis indicated that it was indeed unidimensional and reliable (Cronbach's  $\alpha=0.8146$ ) and factor loadings for all items being between 0.728 and 0.777.

*Organizational CRM* refers to the extent to which organizational structures and behaviors in a business unit reflect the implementation of a strategy focused on CRM. This construct was measured by a five-item, five-point reflective scale ranging from "completely disagree" to "completely agree". These items included, "Our organization is built based on customers rather than products" and "We have established customer teams or have designated persons, responsible for developing, and increasing the value, of their customer portfolios". The confirmatory factor analysis indicated that it was indeed unidimensional and reliable (Cronbach's  $\alpha=0.7592$ ) with factor loadings between 0.672 and 0.760. *Systems CRM* refers the extent to which information systems in a business unit reflect the implementation of a strategy focused on CRM. This construct was measured by two-items. The first question, "We have a CRM system in use, which provides an overall picture of each customer, including all products and services we offer" was measured in five-point

scale ranging from “completely disagree” to “completely agree”. The second item “Do you have a CRM system in use?” had four options to choose from, ranging from “We have and we use it” to “We do not use, and are not planning to invest.” The confirmatory factor analysis indicated that it was unidimensional and reliable (Cronbach’s  $\alpha = 0.5971$ ) and factor loadings of 0.845.

### *CPA Practices*

CPA Practices refers to the extent to which accounting procedures include the use of sophisticated customer profitability accounting methods. In this case, we relied on a calculative, integrative measurement approach combining a second-order one-item formative scale for CPA Sophistication and a reflective scale for CPA Use. The final measure for CPA Practices is the multiplicative product of the summary measure for CPA Sophistication and the factor score representing the core dimension of CPA Use, which is measured using a 9-item reflective scale.

### *CPA Sophistication*

Determining the level of sophistication of customer profitability accounting is complicated as there is no generally accepted theory or guidelines to be followed. Cooper & Kaplan (1998) and Kaplan & Narayanan (2001) have suggested the use of ABC to improve customer profitability accounting to account for differences in customer behavior and service. They claim customer profitability analysis be enhanced by allocating some of the costs previously regarded as indirect to customers following causality. It is not, however, clear that the use of ABC always represents more sophisticated way of determining customer profitability. ABC is assumed to be best suited to organizations with diverse customer base (i.e. customers impose different demands and thus costs to the organization) and proportionally large share of indirect costs.

Overhead allocation and customer profitability accounting along the lines with traditional costing methods or ABC provides organizations understanding of their customers’ current profitability (ABC as an attention directing device). Marketing literature argues for customer value. In the finance literature valuation is traditionally based on discounted cash-flows. Hence, to value customers, expected net cash flow from each customer or customer-segment should be estimated.

Furthermore, it is not only the current and estimated cash flows from each customer that may determine its value. Customers may engage in positive word-of-mouth, which, in turn, affects purchases by other customer and, ultimately, positive cash flow from those new customers. Or customers may help organizations to learn and innovate, thus creating cash flows from other customers in the long run. In some professional organizations certain customers or customer segments may even make an organization an attractive place to work with, hence aiding to recruit the best talents.

Three questions are used to assess the sophistication of customer profitability accounting. We asked respondents to identify those revenues and costs they included in their customer profitability calculation. In the first part of the question they were to indicate whether they included direct costs (e.g. manufacturing costs or purchase costs), various service costs (e.g. customer service, distribution) and sales and marketing costs. The last two are based on the cost-to-serve concept advocated by Kaplan & Cooper (1998). In addition, they were asked if general and administrative costs are included. Respondents had also an option to indicate they do not calculate customer profitability. In the second part of this same question we provided them additional options to choose from. We asked if expected revenues and costs from the expected lifetime of the customer relationship are counted for. We also asked about the inclusion of project or campaign revenues and costs, and included an open question for them to indicate other alternatives.

In the second question we asked how organizations assign indirect costs to customers. This question was included in order to examine whether the business unit assigns costs based on causality or are these allocated on an arbitrary basis.

In the third question we assessed the frequency of calculations. Those business units conducting calculations continuously, or with regular intervals are included as users of customer profitability accounting in our analysis. We regard organizations that do customer profitability calculations ad hoc, have done calculations once or twice, have abandoned calculations, or are planning to calculate profitability in the future as non-users.

Based on these questions we developed the following four level scale to measure the sophistication of customer profitability accounting. The zero level of sophistication consists of business units that do not calculate customer profitability. The first level represents the least sophisticated way of calculating customer profitability. It includes business units that account only for direct costs as well as those including indirect costs on an arbitrary basis. (This approach assumes that the exclusion of indirect costs leads to an omission of important information and that arbitrary allocations produce less accurate information than assignment based on causality.) The second level of sophistication indicates the cost-to-serve approach. In other words, those business units that assign indirect costs to customers following causality qualify to this level. The third level accounts for time dimension in addition to cost to serve approach. Assessment of customer profitability or value considers the future revenues and costs, i.e. some sort of life cycle estimation is in use. Those business units that include a time dimension, but do not assign service costs based on causality, are considered to be in level two regarding sophistication.

#### *CPA Use*

CPA Use relates to the purpose of use of customer profitability accounting in the business unit. We asked, "How much you use customer profitability information to support following activities"? This construct was measured by a nine-item, five-

point reflective scale ranging from “extremely lot” to “not at all”. These items included for example “strategic planning”, “customer selection” and “pricing”. The confirmatory factor analysis indicated that it was unidimensional and reliable (Cronbach’s  $\alpha = 0.8967$ ) and factor loadings between 0.688 and 0.808.

### *Performance*

For performance we use a simple construct. We asked respondents to assess the current profitability of their respective business unit using the following one-item, five-point formative scale: excellent, good, satisfactory, poor, unprofitable. Although many researchers have understood performance as the degree of goal attainment along several dimensions (e.g. Bisbe & Otley, 2004; Chenhall & Langfield-Smith, 1998; Gupta & Govindarajan, 1984; Otley, 1999), within the context of our proposed model it is more appropriate to rely on financial performance only. We aim to empirically examine the impact of CRM Orientation, CPA Practices and the interaction of these two constructs on the financial performance – achieving goals may tell something about the success of certain implementation, but goal achievement (if not financials) or perceptual satisfaction should only be a surrogate for financial performance. This is supported by Ittner et al. (2003) who find no evidence that higher satisfaction levels translate to improved financial performance.

Furthermore, as the focus of this study was on business units, we were not able to rely on external financial information. Our scaling of profitability (i.e., excellent, good, satisfactory, poor, unprofitable) also captures the relative nature of profitability across different industries and markets. That is, implicitly, respondents give us their judgment about profitability that is specific to the industry and markets in which they operate. Using this scale allows respondents to provide an assessment based on the particular characteristics of the context. Thus, we argue that using absolute profitability measures (i.e., percentage numbers) maybe misleading as they are not taking into account the relativistic meaning.

### *Method of Estimation*

The data from the survey were analyzed using partial least squares (PLS), a well-established technique for estimating path coefficients in causal models (e.g., Johansson and Yip, 1994; Birkinshaw, Morrison & Hulland, 1995). The conceptual core of PLS is an iterative combination of principal components analysis relating measures to constructs, and path analysis permitting the construction of a system of constructs (Barclay, Higgins & Thompson, 1995). The major advantages of PLS are that it (1) accepts small sample sizes, (2) can deal with complex causal models, (3) does not require multivariate normality, and (4) produces consistent parameter estimates. It is especially suited to “situations of high complexity but low theoretical information” (Barclay, Higgins & Thompson, 1995: 288), a point that is particularly relevant given that the research addressing the interface of CRM and

accounting practices is relatively new with concepts and relationships still being developed; hence, the emphasis is on theory building rather than theory testing.

#### 4. Results

In the following sections, we describe the results of the statistical tests conducted to examine the model proposed in this paper. We formally evaluate the structural model estimated with PLS. The model is evaluated by assessing the percentage of variance explained, that is, the R-square for the dependent latent constructs, and by examining the size of the structural path coefficients. Finally, the stability of the estimates is examined by using the t-statistics obtained from the jackknife re-sampling procedure, which tends to produce conservative estimates of significance (Falk and Miller, 1992).

Table 4 summarizes the estimation. The estimated model (See Figure 2) had an R-square for the dependent construct of Performance of 0.044. Additionally, the R-square for the construct of CPA Practices was 0.192. Given that the focus of our study is to explore the effects of CRM Orientation and CPA Practices as well as their interplay on Performance and not to explain the overall performance, the low R-square for the dependent construct of Performance is not of concern to us.

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Insert Table 4 Here

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##### *Effects on Performance*

Examining the effects on Performance, it was found that the paths from CRM Orientation and the interaction effect of CRM Orientation and CPA Practices to Performance were significant and in the hypothesized directions. Supporting hypotheses 1 and 4, CRM Orientation (0.164), and the interaction effect (0.113) had a significant positive influence. However, the effect of CPA Practice on Performance has not been significant and the impact has not been in the direction hypothesized. Thus, the empirical analysis does not provide support for Hypothesis 3.

The results indicate that a business unit that is characterized by a stronger CRM Orientation will perform better than those that do not have a CRM Orientation. Furthermore, our findings suggest that this positive effect is strengthened when the organizations puts in place appropriate CPA Practices. It is not the CPA Practices that directly enhance Performance but their moderating effect that matters.

### *Effect on CPA Practices*

The analysis of the effect on CPA Practices revealed that the paths from CRM Orientation to CPA Practices was significant and in the hypothesized direction. Supporting the Hypothesis 2, CRM Orientation (0.438) had a significant positive influence on CPA Practices.

### *Alternative Model*

In order to examine proposed structure of our model we have also estimated a similar model excluding the interaction effect between CRM Orientation and CPA Practices, employing the same measurement scales. The results are reported in Table 5. The results support our hypothesis that CRM Orientation influences the employment of CPA Practices and has a positive effect on Performance (both effects are in the hypothesized direction and significant). Like in the estimation of the proposed model, in the alternative model there is no significant effect of CPA Practices on Performance. Thus, again, the hypothesized relationship between CPA Practice and Performance cannot be empirically established. Furthermore, the R-squares for the alternative model are slightly lower than those for the proposed model. Thus, we argue that the proposed model is more appropriate.

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Insert Table 5 Here

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## **5. Discussion and Conclusions**

Using data from Finland's large and medium size companies we examine the impact of CRM Orientation on CPA Practices and business unit performance. Our results suggest that CRM Orientation has an impact on the CPA Practices; both the sophistication and use of customer profitability accounting. We also show that CRM Orientation has a direct effect on performance, and that impact is stronger given the use of CPA Practices. Hence, the results provide support to the theory that those organizations investing in CRM will benefit from investing in and using of sophisticated CPA Practices as well.

We used a four level construct to measure the sophistication of customer profitability assessment. The validity of results obtained rests largely on the constructs developed. Given the construct, the theory we are proposing suggest that the development of customer profitability assessment should assign customer related costs to customers based on causality (cost-to-serve approach), and proceed from that to account for future expected costs and revenues.

The most sophisticated level in our construct indicates that companies account for future costs and benefits of their relationships (19.8% of respondent claim to do so). Further field research is required to establish how this is actually done. It would also be interesting to know how much of this accounting is actually done by financial professionals as compared to marketing professionals. What comes to the

measurement of customer value, there could be an option value (cf. real options in capital investments) attached to a certain customer relationships. As we considered the valuation of options attached to customer relationships highly unlikely in our target population, we did not try to cover it in this study. Further research may assess whether customer related options get valued, either implicitly or explicitly, in practice.

We have contributed to the literature addressing the relationship between strategy and MCS by broadening the scope of operational strategies studied from manufacturing strategies to customer strategies. Extant literature has defined customer orientation mainly in terms of quality management. Customer relationship management practices are distinct from quality management and flexible manufacturing practices and therefore measurement of such strategy can not rest on surrogates used so far. We also argue that customer relationship strategy is more encompassing than market orientation used by Guilding and McManus (2002). The differences in measurement constructs have been claimed to complicate the comparability of results. This is true also with respect to the results of this study and those presented in prior literature, as both constructs for MAS and customer relationship strategy used here are novel. We acknowledge the problem, but as long as we are not satisfied that the constructs in use are actually measuring what we aim to measure, we should be developing those. We believe that our attempt to assess CRM orientation in this study has made some progress in developing measurement of one facet of operational strategy (cf. Ittner & Larcker, 2001) and provides at least good basis for further research on the issue.

It is far from surprising to find that companies adopting customer relationship strategy also seem to assess the profitability or value of those relationships. On the other hand, there are number of studies addressing the spread of ABC (which has been suggested as an option to develop customer profitability accounting), indicating fairly moderate adoption and implementation rates. Reflecting on that, it is not self evident that the adoption of customer relationship strategy and availability of certain tools leads to actual developments in assessment.

We assumed that the main role for customer profitability information would be decision-making as opposed to managerial control (i.e. increasing goal congruence). This study indicates that customer profitability information is used for both purposes. There is a significant positive correlation between the sophistication of information and the use of this information for compensation purposes. As reward systems typically aim for unambiguous measures, this correlation requires further exploration. In other words, there is a need to study what type of customer profitability information organizations use in their reward systems and what impact that has on behavior and organizational performance.

To develop the theory of customer profitability assessment further, subsequent studies should address other factors that might explain the use, sophistication of and



benefits from CPA. The measurement of sophistication of customer profitability analysis requires future development as well.

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Figure 1. Proposed Research Model

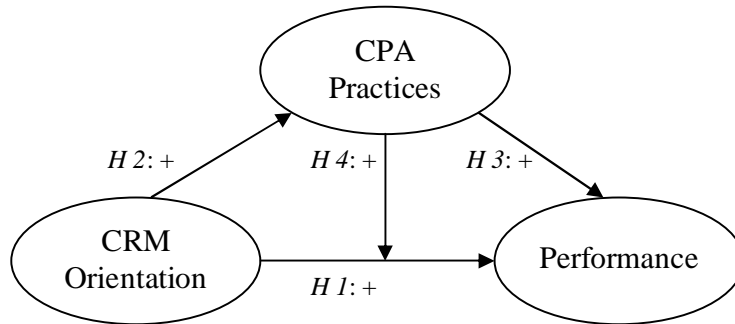


Figure 2. Estimated Model

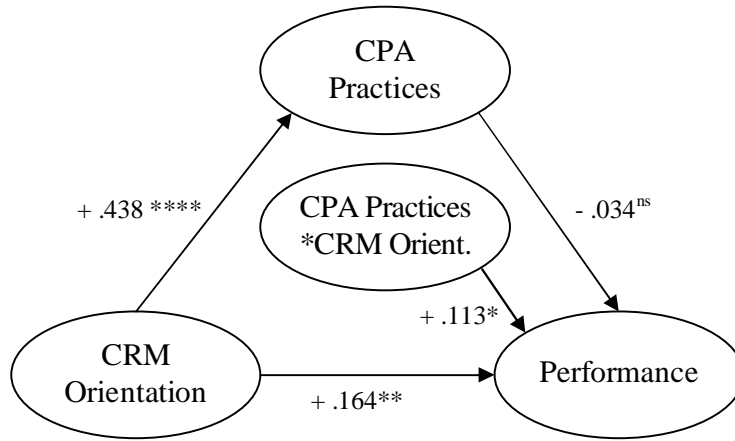




Table 1: Names and Definitions of Constructs in Proposed Model

Construct Name	Construct Definition
CRM Orientation	The extent to which a business unit has directed its efforts towards facilitating the effective management of customer relationships.
CPA Practices	The extent to which accounting procedures in a business unit include the use of sophisticated customer profitability accounting methods.
Performance	The overall profitability of the business unit.

Table 2: Constructs and Measurement Items

CRM Orientation ( <i>formative Likert scale</i> )	
1.	Strategic CRM
2.	Organizational CRM
3.	Systems CRM
Strategic CRM ( <i>reflective Likert scale</i> )	
1.	We have customer strategy developed for customer segments or for all customers
2.	We follow systematically the development of customer relationships with chosen measures
3.	We have defined explicit long-term customer objectives (e.g. customer satisfaction, -share, -profitability, etc.)
4.	Development of customer portfolio profitability is used as a measure / indicator for marketing performance
5.	Our marketing plan includes different budgets for customer recruitment, maintenance and development
Organizational CRM ( <i>reflective Likert scale</i> )	
1.	Our organization is built based on customers rather than products
2.	We have established customer teams or have designated persons, responsible for developing, and increasing the value, of their customer portfolios
3.	Costs and results are followed by customers
4.	Performance measures and reward systems include customer measures
5.	Top management receives regular reports from CRM system
System CRM ( <i>reflective Likert scale</i> )	
1.	We have a CRM system in use, which provides an overall picture of each customer, including all products and services we offer.
2.	Do you have a CRM system in use?
CPA Use ( <i>formative Likert scale</i> )	
1.	Strategic planning
2.	Target setting, including performance measurement
3.	Marketing planning
4.	Customer relationship management
5.	Process development
6.	Segmenting customer base
7.	Customer selection
8.	Pricing
9.	Market / customer analysis

Table 3: Measurement Scale Properties

Construct	Items	Factor Loadings	Cronbach Alpha
Strategic CRM	<ul style="list-style-type: none"> <li>○ SASTRA</li> <li>○ SAMEAS</li> <li>○ SALTOB</li> <li>○ SAIFORB</li> <li>○ SADIFF</li> </ul>	.768 .777 .775 .768 .728	.8146
Organizational CRM	<ul style="list-style-type: none"> <li>○ OCCUST</li> <li>○ OCTEAM</li> <li>○ OCRRESU</li> <li>○ OCREW</li> <li>○ OCTOPM</li> </ul>	.730 .760 .725 .688 .672	.7592
System CRM	<ul style="list-style-type: none"> <li>○ OCCRM</li> <li>○ CRM</li> </ul>	.845 .845	.5971
CPA Use	<ul style="list-style-type: none"> <li>○ USESTRP</li> <li>○ USETARG</li> <li>○ USEMKTP</li> <li>○ USECRM</li> <li>○ USEPROS</li> <li>○ USESEG</li> <li>○ USESELC</li> <li>○ USEPRIC</li> <li>○ USEANAL</li> </ul>	.786 .770 .724 .808 .727 .729 .702 .688 .731	.8967

Table 4: Structural Model Results – Proposed Model

	Proposed effect	Path coefficient	T-Statistic	Sig. Level (1-tail test)
Effects on Performance		[R <sup>2</sup> =0.044]		
<i>H1</i> : CRM Orientation	+	0.164	2.0021	**
<i>H2</i> : Interaction – CRM Orientation & CPA Practices	+	0.113	1.3187	*
<i>H3</i> : CPA Practices	+	-0.034	-0.5214	ns
Effects on CPA Practices		[R <sup>2</sup> =0.192]		
<i>H4</i> : CRM Orientation	+	0.438	9.0142	****

Significance level (p-value): \*\*\*\* p < 0.001, \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1, ns = non significant

Table 5: Structural Model Results – Simple Model without Interaction effect

	Proposed effect	Path coefficient	T-Statistic	Sig. Level (1-tail test)
Effects on Performance		[R <sup>2</sup> =0.039]		
<i>H1</i> : CRM Orientation	+	0.168	2.1530	**
<i>H3</i> : CPA Practices	+	0.054	0.7358	ns
Effects on CPA Practices		[R <sup>2</sup> =0.192]		
<i>H4</i> : CRM Orientation	+	0.438	10.3875	****

Significance level (p-value): \*\*\*\* p < 0.001, \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1, ns = non significant

## Appendix 1

Occupation	Respondents	
CEO, MD, Director	143	25,4 %
Administration	3	0,5 %
Business Development	43	7,6 %
Marketing	81	14,4 %
Sales	108	19,1 %
Customer Service/CRM	31	5,5 %
CFO	58	10,3 %
Accounting Manager/Controller	79	14,0 %
Other	10	1,8 %
N/A	8	1,4 %
<b>Total</b>	<b>564</b>	<b>100 %</b>

Industry	Respondents		Organizations	
Banking, finance, insurance	17	3,0 %	9	2,5 %
Transportation	27	4,8 %	22	6,4 %
Retail	48	8,5 %	32	9,0 %
Other Services	77	13,7 %	39	10,9 %
Steel and Electronics Industry	119	21,1 %	90	25,4 %
Forest Industry	67	11,9 %	31	8,9 %
Power Industry	21	3,7 %	11	3,0 %
Food Industry	22	3,9 %	14	4,0 %
Construction	27	4,8 %	19	5,4 %
ITC	69	12,2 %	40	11,2 %
Chemical	30	5,3 %	21	6,0 %
Communication and publishing	13	2,3 %	7	2,0 %
Other Industry	25	4,4 %	17	4,9 %
Other	2	0,4 %	2	0,4 %
<b>Total</b>	<b>564</b>	<b>100 %</b>	<b>354</b>	<b>100,0 %</b>

Number of Employees	Respondents		Organizations	
100-249	170	30,1 %	133	37,6 %
250-499	109	19,3 %	73	20,7 %
500-999	68	12,1 %	50	14,0 %
1000+	212	37,6 %	95	26,7 %
N/A	5	0,9 %	3	1,0 %
<b>Total</b>	<b>564</b>	<b>100 %</b>	<b>354</b>	<b>100 %</b>

Turnover €	Respondents		Organizations	
-10m	11	2,0 %	9	2,6 %
10-19M	53	9,4 %	40	11,4 %
20-49M	91	16,1 %	74	21,0 %
50-99M	87	15,4 %	64	17,9 %
100-499M	180	31,9 %	102	28,9 %
500-1000M	34	6,0 %	20	5,6 %
1Mrd+	94	16,7 %	34	9,5 %
N/A	14	2,5 %	11	3,0 %
<b>Total</b>	<b>564</b>	<b>100 %</b>	<b>354</b>	<b>100 %</b>