Companies' customer portfolio management practices and performance in different exchange contexts

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Abstract:
Customer portfolio management represents one of the four key relationship management levels in business markets. A large number of customer portfolio models has been suggested and tested since early 1980s. However, there is currently only little knowledge about companies' actual customer portfolio management (CPM) practices and their performance. Moreover, there is currently little knowledge about the role of company context on customer portfolio management. This study examines the relationship between companies' CPM practices and performance in different exchange contexts. Total nine hypotheses are suggested and they are tested by PLS-modeling. The CPM activities are found to be connected to customer profitability and overall customer performance but only with caution directly to firm performance. Different CPM styles are found effective in two examined exchange contexts. Highly designed, mechanistic CPM practices are best suited to market-like exchange contexts where the managerial challenges arise from structural complexity of customer base. In turn, the network-like exchange context favors a less designed, more organic CPM style because of the greater complexity present in customer relationships and interaction. Finally, the results indicate also that different facets of CPM activities are emphasized for attaining performance depending on the context of exchange. Overall, the findings show the importance of tailoring the CPM practices to company's relational context.

Keywords:
Customer portfolio management, customer relationship management, exchange context, performance, Partial Least Squares -modeling

1. Introduction

Companies' networks of relationships form a context which both enables and constrains the performance of a company (Ritter, Wilkinson and Johnston, 2004). Accordingly, a notable body of literature exists about the management of relationships in business markets. By looking at the relationship management literature in B-to-B contexts a total of four interrelated relationship management levels can be identified: relationship level, relationship portfolio level, net level, and industries as networks level (Möller and Halinen, 2000). This paper concentrates on studying companies' customer portfolio management representing one of the key relationship management perspectives in business markets.

In the last 20 years a vast number of customer portfolio models have been proposed as tools for the strategic management of all of a company's customer relationships from transactions to strategic partnerships based on customer value, representing the very few existing relationship management tools. (see Turnbull, 1990). However, there is currently only little knowledge about companies' actual *customer portfolio management (CPM) practices*. This is an interesting topic for research as companies have made notable investments in the management of their customer bases by the recent CRM boom.

This far the results of testing customer portfolio models with empirical data are promising and the results underline the relevance of portfolio management concept for companies (e.g. Zolkiewski and Turnbull, 2002; Yorke and Droussiotis, 1994). Current research has shown that profit distribution among companies' customer relationships is remarkably heterogeneous (e.g. Niraj, Gupta and Narasimhan 2001; Reinartz and Kumar 2000). Moreover, different customer relationships have different roles or serve different functions in the long term (Cannon and Pereault 1999; Walter, Ritter and Gemünden 2001). Still, there is only scant research on the performance of customer portfolio management practices, in other words on whether the efforts are connected to better company performance in long term.

Interestingly, the question of customer portfolio management performance outcomes remains unsolved as conflicting views about portfolio management exist. Some authors even suggest that portfolio models do not work properly, and may even be counterproductive when implemented in business, and therefore should not be used at all (e.g. Armstrong and Brodie 1994; Dubois and Pedersen 2001). Further studies have pointed out that customer portfolio models fall short in addressing the interconnectedness of relationships (Ritter, 2000; Zolkiewski and Turnbull, 2002), and also that the models neglect the essential aspect of interaction in business (Dubois and Pedersen 2001). Moreover, there is currently little knowledge about the role of exchange context on customer portfolio management. The key questions here are whether customer portfolio management is more feasible in some contexts or do some managerial styles fit better certain company contexts? Clearly a research gap exists.

This study examines the relationship between companies' customer portfolio management (CPM) practices and customer and firm performance. More specifically, *the purpose of this research is to study contextually companies' customer portfolio management practices and performance in business markets.*

2. Customer portfolio management

Customer portfolio management has been defined based on theory as: "*a practice by which a company analyses the role of different customers in providing current and future value in its customer base for developing a balanced customer structure through effective resource allocation to different customers or customer groups*" (see Terho and Halinen 2007). However, the few empirical studies have demonstrated that the CPM concept is a broader phenomenon in practice than the theoretical models indicate (cf. Leek, Turnbull and Naude, 2002; Terho and Halinen, 2007). Recently, Terho (2007) has developed an extensive conceptualization and a measure of CPM practice by synthesizing both theory-based and field-based views. This conceptualization explicates the activities of CPM and it covers well the different facets of companies' management practices. These suggested CPM construct and measure are the starting point of this study.

More specifically customer portfolio management construct consists of four dimensions: analysis efforts, analysis design, responsiveness efforts and responsiveness design (Terho 2007). These four dimensions approximate both the strength (efforts) and the style (design) of CPM activities. (see Figure 1). Below, these key dimensions will be discussed in detail (see Terho 2007 for more thorough discussion; Appendix 1 for indicators).

Analysis efforts refer to *the focal company's efforts to analyze its whole portfolio of customers pertaining to*

their different roles in providing current and future value for the focal company. In other words, to what degree a company analyses the current and future value of its customers both in individual relationship and portfolio levels. The portfolio level analysis focuses to comparing, grouping, and prioritizing customers in the customer base based on their value for focal company.

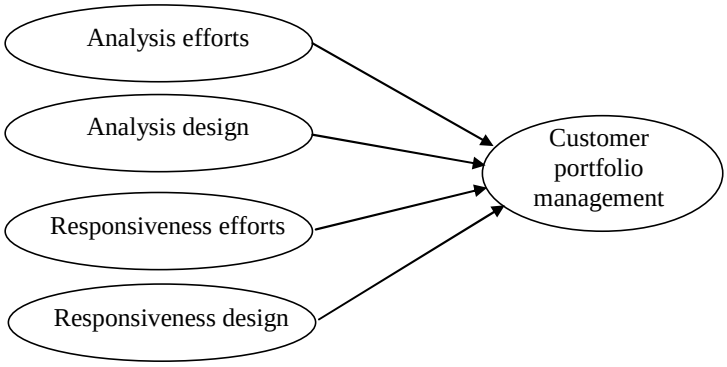

Figure 1 Customer portfolio management construct

Analysis design refers to *the focal company's continuous efforts to plan and adapt its customer-portfolio-analysis activities to company needs.* This dimension indicates the *style* of analysis. Highly designed analysis practices are close to the use of the formal portfolio models suggested in literature. Therefore, high levels of design indicate a mechanistic portfolio management style with formal rules and procedures and a more limited participation in decision-making (cf. Burns and Stalker, 1961).

Responsiveness efforts refer to *the focal company's efforts to adjust its resource allocation according to the value of different customers in its current and future customer portfolio.* Two main aspects in resource allocation among portfolio of customers can be distinguished. These two general response effort strategies are the *matching* of resource allocation to various customers' value for the focal company and the future-oriented *development* of the customer relationships in the customer base.

Responsiveness design refers to *the focal company's continuous efforts to plan and adapt its responsiveness activities to company needs with a view to implementing them in practice.* Again, high levels of design in responsiveness indicate a more planned, mechanistic portfolio management style.

The adopted CPM construct is *formative* i.e. the different facets of the CPM do not necessarily hang together. Instead, different activities together form the CPM level, indicated by the direction of arrows in figure 1. In other words, a company can analyze its customers but it does not necessarily have to respond to the knowledge gained in this process. Similarly a company may have extensive CPM efforts in place but they do not have to be extensively designed. Also the indicators are formative: a company can for example treat its customer relationships in cost-efficient way but it doers not have to develop its customer portfolio structure. Next the relationship between CPM efforts and performance will be discussed in detail and hypotheses and research model are presented.

3. Research model

Nine hypotheses are put forward based on theory concerning the relationship between the key CPM activities and performance. The research model in Figure 2 below will be used to test the hypotheses. The continuous arrows represent the direct effects and the dashed arrows the moderating effects. The arrows in bold indicate a direct main effect and the thin arrows an intervening mediator effect (cf. Baron and Kenny, 1986).

Three areas of performance are considered: customer profitability, overall customer performance, and firm performance. Below the logic of the research model and hypotheses will be explicated: the direct effects in chapter 3.1 and the mediator and moderator effects in chapter 3.2.

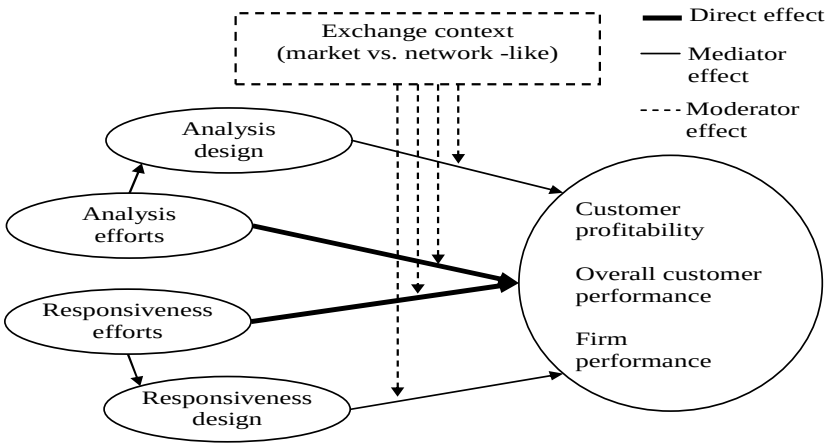

Figure 2 Research model

3.1 CPM and the link to performance

The core of customer portfolio management lies in the processing of customer value related information and in responding to the new knowledge and insights gained in this process. Therefore CPM can be considered as organizational learning which, at its most basic level, is the development of new knowledge or insights that have the potential to influence the behavior of the organization (cf. Huber, 1991). Organizational learning is widely recognized as an important aspect of the strategic performance of companies (e.g., Fiol and Lyles 1985, p. 803; Slater and Narver 1995, p. 66–67). Thus the CPM activities can be hypothesized to be linked to performance.

Because behavior is the necessary link to performance (e.g. Slater and Narver 1995, p. 63) only the CPM efforts (behaviors) form a theoretically meaningful direct link to performance. In other words, the design of the activities, that is, CPM style is not logically directly connected to performance. Therefore three first three hypotheses argue that both analysis and responsiveness *efforts* (i.e. CPM efforts) are connected to customer profitability (**H1**), overall customer performance (**H2**), and firm performance (**H3)** – *see the arrows in bold* in Figure 2.

First of all, CPM activities may produce both new and more precise knowledge about the portfolio of customers and their value to the focal firm. This is clearly an important issue, because of the notable profit heterogeneity of customers and the different roles and functions different relationships serve for the selling company (Niraj, Gupta and Narasimhan, 2001;Walter, Ritter and Gemünden, 2001). The learning that takes place in CPM activities enables firms to allocate their resources more efficiently among customers, thereby avoiding underspending or overspending (cf. Reinartz, Krafft and Hoyer, 2004, p. 296). The analysis and responsiveness efforts are both hypothesized to be connected to financial customer performance, that is, to customer profitability.

H1 The analysis and responsiveness efforts of an organization have a positive impact on customer profitability

Secondly, the customer relationship management (CRM) aims at balancing in value creation for customers and for selling company (Boulding, Staelin, Ehret and Johnston, 2005). Interestingly, portfolio management focuses strongly on managing customers based on their value for the selling company. This strong supplier-focus raises the interesting question of how CPM activities affect the value customers perceive in exchange? Based on earlier studies both negative and positive effects can be argued for (Dubois and Pedersen 2001; Johnson and Selnes 2004). The dual creation of value could be considered as a zero-sum game where supplying company's optimization of customer value will decrease the customer perceived value. In deed, a strict focus on customer profitability and customer costs in management could decrease perceived value-creation, customer satisfaction, or customer retention, all of which are reflected in overall customer performance. However it can also be argued that the two foci in managing customers (creating value for the selling company, and creating value for the customers) are not mutually exclusive. In fact, the focus and insights about selling company's own value creation can also mean openness and understanding of customer value. Therefore it can be argued that there is a positive link between CPM efforts and perceived value-creation, customer satisfaction, or customer retention, all of which are reflected in overall customer performance.

H2 The analysis and responsiveness efforts of an organization have a positive impact on overall customer performance

Thirdly, both analysis and responsiveness efforts in CPM are hypothesized to be connected to customer profitability and to broader overall customer performance, including customer satisfaction, retention, and growth. Venkatraman and Ramanujan (1986) distinguish between financial performance measures, which refer to the fulfillment of the economic goals of the firm, and operational measures, which in turn refer to the key operational success factors that might enhance financial performance. The two areas of customer performance discussed above are clearly both key operational measures that form a meaningful link from CPM efforts to firm performance. If these links are strong enough the CPM efforts will also have a direct link to firm performance.
H3 The analysis and responsiveness efforts of an organization have a positive impact on firm performance

3.2 The role of the exchange context and the CPM style in the link with performance

Several authors have proposed that different kinds of relationship marketing and management are used, and are also needed depending on the context of the interacting firms (e.g., Broadie, Coviello, Brookes and Little 1997, p. 401; Li and Nicholls 2000; Rao and Perry 2002, p. 606–607). Having conducted a very thorough literature review on the subject of relationship marketing, Möller and Halinen (1999; 2000) proposed that the relational complexity and the exchange context strongly affect what kind of customer management is reasonable in practice. The authors stress that the complex relationships characterize a network context whereas less complex relationships dominate in market-like exchange context. The relational complexity refers to the number of actors involved, to their interdependence, intensity and nature of interaction, and to the potential temporal contingencies in the relationship. (see Figure 3.)

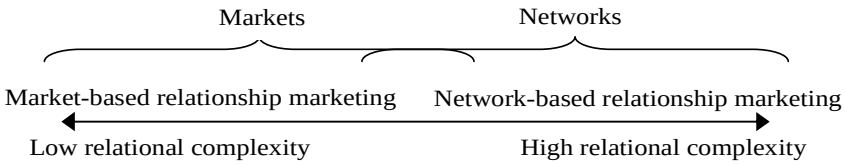

Figure 3 Two types of relationship-marketing theories (Möller and Halinen 1999, 2000)

In market-like exchange contexts market the major challenge in customer management is to treat large numbers of customers individually and still profitably. Here the managerial focus is suggested to be on planning marketing activities for regular customers, mastering customer-portfolio analyses, using databases and information technology to manage the customer interface, and restructuring the marketing organization according to RM thinking (so called market-based relationship marketing). In turn, in network-like exchange contexts the focus in management lies on the need to manage interdependencies between the business actors. The managerial challenges are suggested to relate to broader and deeper interaction with external partners. The key questions concern how to coordinate activities with different actors and how to mobilize and control critical resources through relationships with them. Similarly, there is a need to consider and manage customer relationships more individually (so called network-based relationship marketing). Möller and Halinen (1999; 2000). These ideas are also supported by a number of studies suggesting that stable, homogeneous and routine conditions pose less uncertainty for the focal company and thus favor formal, mechanistic systems and structures, and in turn, changing, heterogeneous and complex conditions favor organic management systems. (cf. Burns and Stalker 1961; Lawrence and Lorch 1967, Thompson 1976).

Accordingly, the second set of hypotheses concentrate on the role of CPM style (i.e. analysis and responsiveness design) in different exchange contexts. *The analysis and responsiveness design (i.e. CPM style) is hypothesized to amplify (mediate) the relationship between CPM efforts and performance under certain conditions*.

It is hypothesized that analysis and responsiveness design mediates the relationship between CPM efforts and all examined three areas of performance in more market-like exchange contexts (**H4-H6,** *see the thin arrows* in Figure 2), but not in more network-like exchange contexts (**H7-H9,** *see the thin arrows* in Figure 2). More specifically, in market-like conditions where the managerial challenges arise from the structural complexity in the customer base the highly designed, mechanistic customer portfolio management style is hypothesized to be effective (designs mediate the effort-performance path). On the contrary, in network-like exchange context where the managerial challenges come from the complexity of the exchange and interaction it is hypothesized

that less designed, more organic management styles are needed (designs do not mediate the effort-performance path). Therefore, the exchange-context acts as a moderator for effective CPM style (*see the dashed arrows* in Figure 2) (cf. Burns and Stalker 1961).

H4 In market-like exchange context the design of CPM activities mediates the relationship between CPM efforts and customer profitability

H5 In market-like exchange context the design of CPM activities mediates the relationship between CPM efforts and overall customer performance

H6 In market-like exchange context the design of CPM activities mediates the relationship between CPM efforts and firm performance

H7 In network-like exchange context the design of CPM activities does not mediate the relationship between CPM efforts and customer profitability

H8 In network-like exchange context the design of CPM activities does not mediate the relationship between CPM efforts and overall customer performance

H9 In network-like exchange context the design of CPM activities does not mediate the relationship between CPM efforts and firm performance

Finally, in the research model there is no path between analysis and responsiveness efforts. This research model concentrates explaining optimally the relationship between the various CPM activities and performance. Adding a link to the model between the analysis and responsiveness efforts would provide more theoretical information about the nature of CPM activities but it would loose its predictive capability in relation to performance. Also, the designs are better modeled as mediators instead of antecedents because of CPM activities can but do not need to be formally designed – as noted also by Leek, Turnbull and Naude (2002). These alternative models were tested but empirical results support the suggested research model.

4. Exchange context

The nature of companies exchange context has not been studied before empirically. Here the companies' context of exchange with their customers is approached by seven theoretically chosen dimensions based on interaction and network and environmental literature. These dimensions provide all differentiated information about firms exchange with their whole customer base. The dimensions are 1) broadness of customer base (cf. Homburg, Workman and Krohmer 1999), 2) customer base heterogeneity (cf. Achrol and Stern 1988), 3) overall strength of customer relationships (cf. Webster 1992), 4) customer concentration, that is, dependency of largest customers (cf. Homburg, Workman and Krohmer 1999), 5) overall interconnectedness of customer relationships (cf. Blankenburg Holm, Eriksson and Johanson 1996), 6) customer turnover, and 7) customer relationship dynamism (cf. Jaworski and Kohli 1993). The four first dimensions broadly reflect the structural characteristics of the exchange context of the focal company with its customers, while the two last ones concentrate on change in the exchange context. The fifth dimension captures the influence of indirect relationships while the others focus on the main characteristics of those that are directly connected. Overall the suggested dimensions cover the quantity, diversity and quality of customer relationships, and the dynamism present in the customer base and the broader indirectly connected context. Arguably these contextual factors cover well the various contextual factors which affect customer relationship management.

The suggested dimensions of exchange context can together provide an extensive picture about the overall nature of exchange between a company and its customers. Importantly, the dimensions are based on the idea of *relationships as the main governance form of exchange* in business markets – which is not the case in environmental context measures commonly used in CRM research. Further, the suggested approach takes into account the *wide variation in companies' exchange* with their customers in business markets varying from more market-like conditions to more network-like conditions (see Möller and Halinen 1999; 2000).

5. Sample, analysis methods, and measures used

Large companies are more likely to systematically apply portfolio management due to their larger resources. A purposive sample was drawn from the Finnish "Fonecta ProFinder B2B" database in order to find the largest B-to-B companies in the country. There were no statistical considerations in the company selection. In practice, taking all companies with a turnover of over 55 million euros gave a list of 493 independent units responsible for customer base management. The senior management of all companies was contacted personally by phone for finding the right respondents. Of the contacted independent units, 446 managers promised to participate in this research. Owing to limited research resources and a difficult respondent group of senior marketing managers, a single respondent approach was adopted. All these managers were sent an electronic questionnaire and two reminders via the web-based survey tool Webropol. The removal of responses with low

respondent competency (measured with a separate question) and responses having a substantial quantity of missing values led to a total of 212 usable responses, giving a rather high response rate of 44%. No biases were found when testing the data.

The research model and hypotheses are analyzed by Partial Least Squares (PLS) modeling which is a structural equation modeling technique. PLS modeling is used because of several reasons. First of all, PLS can model latent constructs under conditions of non-normality, which is the case in this research (e.g., Chin, Marcoulin and Newstead, 2003, p. 197). Secondly, PLS avoids two serious problems of maximum likelihood-based methods: namely, improper solutions and factor indeterminacy (Fornell and Bookstein 1982, p. 440). Attempts to explicitly model formative indicators in the traditional structural equation modeling have been shown to lead to identification problems – one way to avoid this problem is to apply components-based PLS which can better model formative indicators (Chin 1998, p. 9–10). PLS estimates the latent variables as the exact linear combination of the observed measures, thereby avoiding the indeterminacy problem and providing an exact definition of component scores. Thirdly, PLS is appropriate when theory is untested in an application domain (Gobal, Bostrom and Chin, 1992, 57). The explorative nature of PLS (indicator weights) can give detailed information about the different facets of customer portfolio management. SmartPLS 2.0 program is applied. Sample size requirements are fulfilled for all tested research models.

Terho (2007) has suggested a CPM measure based on extensive literature review, pilot study with seven companies, 17 additional interviews and survey data. This CMP measure was adopted for this study (see Appendix 1 for indicators). The validity of the formative CPM measure was examined by the guidelines of Diamantopoulos and Winklehofer (2001). The external validity was examined by using a multiple indicators and multiple causes (MIMIC) model. In this model, the formative indicators act as direct causes of the latent variable (in this case a reflective overall CPM-measure). If the overall model fit proves acceptable, this can be taken as supporting evidence for the set of indicators forming the index. After removing nine indicators the both measurement and structural model results were found to support the construct validity of CPM measure (for questionnaire see appendix, removed items are marked with *). Importantly, 19 of 22 indicators were significant at least at a 10% significance and all indicators had positive indicator weights (retained non-significant indicators: AE2; RE1; RE4). The three non-significant items were retained in the CPM measure because of conceptual reasons and the difficulty of forming a good reflective CPM measure (cf. Diamantopoulos and Winklehofer 2001). The structural model results indicated that the reflective and formative measurement approaches share 78% of their variance (R^2 0.777) supporting the validity of the CPM measure. The paths between CPM dimensions and the reflective CPM measures were all significant: AE 0.135*; AD 0.366**; RE 0.325** RD 0.226** (5% level=*; 1% level =**).

The reliability of the *exchange context scales* were examined by Cronbach's alphas. All alphas are either in a satisfactory (over 0.65) or in a good level (over 0.7) supporting the reliability of the scales: broadness of customer base α= 0,840, interconnectedness α = 0,693, Dynamism α = 0,719, and heterogeneity α = 0,802. Discriminant validity was examined with factor analysis. After removing two items (dynamism 3 and heterogeneity 3) because of poor loadings on main factor and rather strong loadings on other factors the factor analysis supported the discriminant validity of the scales.

The suggested dimensions of exchange context provide differentiated information about companies exchange with their all customers. The dimensions of the exchange context are not expected to co-vary. In fact the dimensions are not highly correlated. It is for these reasons that the taxonomy of exchange context is best approached through cluster analysis (cf. Cannon and Perreault 1999, 447–448). A K-means cluster analysis was run with the data using summed measures with reverse scoring where applicable. Because the aim of this procedure was to contrast the two differing ends of the exchange-context dimension, a two cluster solution was chosen. The analysis produced a meaningful, easily interpreted solution (see Table 1). Further, the solution was very balanced as the numbers of cases in each cluster were very similar. The clusters were named the market-like cluster (N=127) and network-like cluster (N=85) based on the work of Möller and Halinen (2000). *Five dimensions differed significantly in the two clusters and therefore provide information about the context of exchange.*

Cluster		Cb_size	Heterog.	Relations.	C_turnover	Concentr.	Interconn.	Dynam.
Range of the scale		1-7	1-7	0-1	1-7	1-7	1-7	1-7
Network	Cluster center	5,00	4,24	0,60	2,00	5,59	4,73	4,22
	Mean	**4,91**	**4,29**	**0,60**	**1,87**	**5,59**	4,69	4,19
	Std. Deviation	1,07	1,38	0,23	1,01	1,00	1,08	1,18
Market	Cluster center	2,00	3,47	0,48	2,00	3,86	4,64	4,15
	Mean	**2,39**	**3,44**	**0,48**	**2,38**	**3,86**	4,66	4,17
	Std. Deviation	0,91	1,30	0,17	1,23	1,12	1,24	1,18
Total	Mean	3,40	3,78	0,53	2,17	4,55	4,68	4,18
ANOVA	F-test	358,82	16,77	20,20	9,14	132,61	0,31	0,22
	sig.	**0,000****	**0,000****	**0,000****	**0,003****	**0,000****	0,578ns.	0,643ns.

Table 1 The market- and network-based exchange context: the results of cluster analysis

In sum, the market-like cluster is characterized by larger customer base size, more heterogeneous customer base, more transactional customer relationships, higher customer turnover and lower customer concentration. In contrast, the network-like cluster is characterized by smaller customer base size, less heterogeneous customer base, stronger customer relationships, lower customer turnover, and higher customer concentration. Clearly, in market-like cluster the managerial challenges arise from structural complexity of customer base and in network-like cluster from complex customer relationships and interaction.

6. Results

Because of the research model (see figure 2) is complex it is tested in several phases. First the direct effects of research model (**H1-H3**) are tested in chapter 6.1. Secondly, the mediator effects are tested separately for market-like exchange context in chapter 6.2.1 (**H4-H6**) and for network-like exchange context in Chapter 6.2.2 (**H7-H9**). Thirdly the measurement model results of research models in both exchange contexts are discussed in detail in Chapter 6.3 in order to further deepen the understanding about the contingent nature of CPM in different exchange contexts.

6.1 CPM efforts and performance

First of all, the three first hypotheses of the research model (direct effects in figure 2) are tested. In other words, the relationships between CPM efforts and customer profitability, overall customer performance, perceived firm performance, and objective ROI are tested on individual PLS models (see figure 4 below).

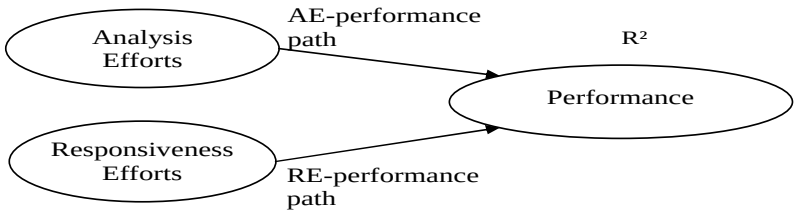

Figure 4 Research model for testing the direct effects of the main research model

The main reason behind testing separate research models for each of the four success measures is the predictive nature of the research model. The PLS modeling weights the indicators of formative constructs to explain optimally variance in dependent variable (Chin 1998, 307; Chin, Marcolin and Newsted 2003, 197). Importantly, it can be expected that different areas of CPM can have varying effects on different areas of performance e.g. on financially oriented customer profitability and on largely non-financial overall customer performance.

Testing separate models for each areas of performance will provide detailed information about the relationship between CPM and different areas of performance and therefore about the mechanism how CPM can affect company performance. Table 2 below summarizes the structural model results of the tested research models examining the relationship between CPM efforts and performance for whole data and for companies acting in market- and network-like exchange contexts.

The Table 2 summarized central structural model results for the model shown in Figure 4. *Path coefficients* are followed by information about path significance, followed by the t-value in parenthesis from a bootstrap-procedure (500 samples) used to assess the path significance. The following symbols are used to indicate the

levels of significance in figures: ns.= not significant, *= significant at p<0.05, **= significant at p<0.01. The path coefficients can be interpreted within a regression context. Further, the table includes the *R² values*, which again can be interpreted in a similar way to traditional regression analysis, in other words as indicative of the proportion of variation in a variable explained by its relationship with the variables that are assumed to affect it.

Moreover, the table includes *effect sizes* which examine the significance of the differences in the R² values (see Chin Marcolin and Newsted 2003, 211). Here the effect sizes are used to examine whether research models tested in the market and network-like exchange contexts explain better the performance than the models tested with the whole data set. Cohen (1988) classified effect sizes as small >0.02, medium >0.15, and large >0.35. By looking the effects sizes in the Table 2 it is easy to see that the exchange context is highly significant for explaining the relationship between CPM and performance. Consequently the discussion of results will be done based on the research models tested in the two exchange contexts (models 1–4M and 1–4N in Table 2).

	Whole data	**AE-perf**	**RE-perf**	**R^2**	**E-size**
1W	Overall customer performance	0.261** (3.650)	0.271** (3.940)	0.224	-
2W	Customer profitability	0.209** (3.260)	0.287** (4.082)	0.196	-
3W	Perceived firm performance	0.198** (3.522)	0.170** (2.678)	**0.094**	-
4W	ROI	**0.117ns. (1.133)**	**0.191ns. (1.605)**	**0.059**	**-**

	Market like context	**AE-perf**	**RE-perf**	**R^2**	**E-size**
1M	Overall customer performance	0.349** (4.247)	0.231** (2.704)	0.267	0.055
2M	Customer profitability	0.224** (3.153)	0.346** (4.910)	0.235	0.049
3M	Perceived firm performance	0.336** (4.466)	0.198** (2.593)	0.183	0.098
4M	ROI	**0.112ns. (0.656)**	**0.213ns. (1.205)**	**0.068**	**0.010**

	Network like context	**AE-perf**	**RE-perf**	**R^2**	**E-size**
1N	Overall customer performance	0.310** (2.716)	0.387** (4.257)	0.339	0.148
2N	Customer profitability	0.280** (2.733)	0.340** (2.558)	0.295	0.123
3N	Perceived firm performance	0.336** (2.750)	**0.218ns. (1.618)**	0.186	0.102
4N	ROI	**0.184ns. (1.109)**	**0.229ns. (1.256)**	**0.086**	0.029

** Significant at 1%, * Significant at 5%, **ns**. Non-significant

Table 2 The relationship between CPM efforts and performance (structural model results)

Analysis and responsiveness efforts are significantly linked to overall customer performance and customer profitability in both exchange contexts at a 1% significance level (see Table 2). The CPM efforts explain around 24% to 30% of the variance of the customer profitability and around 27 to 34% of overall customer performance (see the R^2 values in Table 2). This result is rather surprising as the CPM is a heavily supplier focused practice focusing to the management of customer base based on customer value for the focal firm. Clearly, the stronger relationships between CPM efforts and overall customer performance indicate that the companies' actual CPM activities are flexible enough in practice to take into account the complexities of exchange in the long-term. Further, the insights about selling company's own value creation seem also mean openness and understanding of customer value. Finally the Goodness of Fit (GoF) value (0-1) suggested by Tenenhaus, Vinzi, Chatelin and Lauro (2005, 7) was examined. Even though they are not well suited for formative measurement they were found sufficient for the models (GoF values 1M: 0.373; 1N: 0.396; 2M: 0.342 2N: 0.393). In sum, hypotheses 1-2 are supported.

H1 The analysis and responsiveness efforts of an organization have a positive impact on customer profitability – **supported**

H2 The analysis and responsiveness efforts of an organization have a positive impact on overall customer performance – **supported**

The structural model results are far more ambiguous with regard to hypothesis 3 (see Table 2). Two measures of firm performance were examined, namely perceptual performance and the objective ROI. Both analysis and responsiveness efforts were connected to perceived firm performance in the market-like exchange context at a 1% significance level, explaining around 18% of the variance, while in the network-like contexts only analysis efforts were significantly linked (1% significance level) to performance, again explaining around 18% of the variance. However, both of these structural models produced low goodness-of-fit values (GoF is 0.284 for

both models 3M; 3N). Still the structural model results for perceived firm performance could be considered acceptable as the GoF figure is based on internal measurement consistency and is not suited to formative measures such as CPM.

The research models focusing on the relationship between CPM efforts and the objective ROI figure revealed no statistically significant relationship between CPM efforts and ROI (see Table 2): the path coefficients turned out to be small and non-significant, and the R^2 values very low for both types of exchange context. Also, the measurement model results indicate a bad fit to the data - there was only one significant indicator weight ($p>0.05$).

Clearly, the differences in the results between perceptual and objective firm performance are problematic. There are several possible explanations. This research is based on a cross-industry sample covering all of the largest B-to-B companies in Finland operating in a wide variety of industries. The ROI has been shown to be statistically connected to industry through risk (see Aaker and Jacobson 1987). In other words, a good or bad ROI figure in high-risk industries such as ICT or engineering is very different from a good or bad ROI figure in low-risk mature capital-intensive industries such as heavy engineering or real-estate rental, and this could make it problematic in cross-industry research. Naturally, given the conflicting results on firm performance, the direct link between CPM efforts and perceptual performance should be interpreted with great caution because of the rather weak path coefficients, the R^2 values, and the possibility of common method bias. A Harman's test for common method bias has been conducted indicating the absence of common method bias (Podsakof, MacKenzie, Lee and Podsakoff 2003, 889). Still this test cannot fully guarantee that there is no common method bias.

The relationship between CPM efforts and firm performance is meaningful in terms of overall customer performance and customer profitability, but this direct link to firm performance is weak and must be interpreted with great caution. In order to produce more reliable results in the future, researchers should adopt a multiple-respondent approach in examining the link between CPM and firm performance. Furthermore, the CPM-ROI link should be tested in a single-industry context. Therefore:

H3 The analysis and responsiveness efforts of an organization have a positive impact on firm performance – **weak support**

A rather surprising result is that the CPM activities are more strongly connected to all areas of performance in network-like exchange contexts compared to market-like contexts (see the R^2 values in Table 2). This finding emphasizes the importance of relationships and their management in more relational contexts. The important role of relationships has probably been recognized longer in network-like contexts, whereas relationship thinking in market-like contexts is a more recent phenomenon and has been influenced by the current developments in CRM. As the proper implementation of CPM activities is likely to take time their possible later introduction may also affect their performance. More significantly, this result emphasizes the importance of maintaining a broad conceptualization of CPM, and indicates that the CPM efforts are not only suited to managing large, heterogeneous or changing customer bases.

Finally, discriminant validity is usually assessed in structural equation modeling according to the square root of AVE and the correlations. However, AVE is not suitable for formative measures because formative indicators may be positively, negatively, or not correlated (Bollen and Lennox, 1991, 307). Therefore the discriminant validity is based on conceptual reasoning in the formative measurement implying that the traditional assessment of individual item reliability and convergent validity is not meaningful for formative constructs (Hulland, 1999, 201). Consequently AVE figures are not included in this paper.

6.2 CPM style and performance in different exchange contexts

Secondly, the discussion moves to the link between CPM style and performance. It was hypothesized that the *exchange context*, which has several dimensions, will have a *moderating effect* on the link between corporate CPM practices and performance. Testing moderation is however difficult in structural equation modeling. There are two general strategies 1) to test moderation by dividing the data to subgroups, and 2) to test moderation by using interaction terms (e.g. Sauer and Dick 1993). In order to lessen the complexity of the research model (testing mediation and moderation effects in the same model) the moderation effects are tested by dividing the data to market-like and network-like exchange contexts.

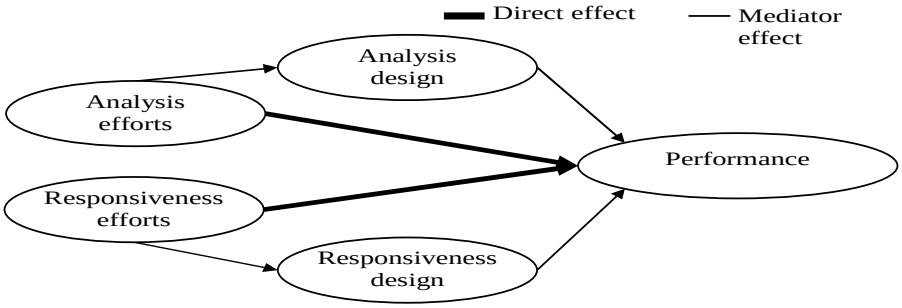

Figure 5 Research model for testing the mediator effects

In other words, the hypothesized *mediation effects* are tested separately for both exchange contexts according to the process established by Baron and Kenny (1986, 1176-1077) with a research model presented above in Figure 5. In other words the analysis and responsiveness design constructs will be added to the earlier tested research mod to see whether mediation effects occur. This mediator model is presented in Figure 5. The strongest demonstration of mediation occurs when earlier strong path between the independent and the dependent variable becomes zero (full mediation).

6.2.1 Mediator effects in market-like exchange context:

The design of CPM activities approximates how much explicit effort the company has put into their planning and adaptation. A high score in design indicates a more formal, mechanistic portfolio-management style that is close to the use of formal portfolio models in the theoretical literature (cf. Burns and Stalker (1961, 96-126).

The CPM design mediates the effort-performance relationship in two cases discussed more in detain below. First of all, the *analysis design* mediates the path between analysis efforts and customer profitability (see Figure 6).

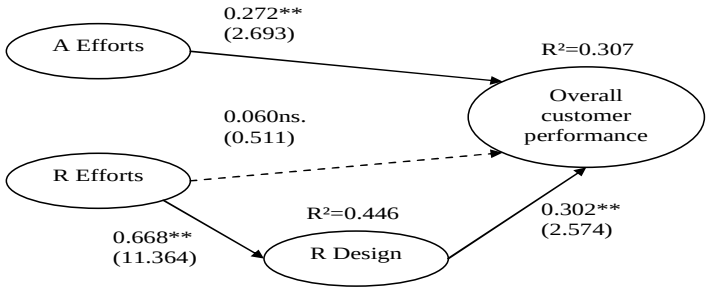

Figure 6 Mediation effects in market-like exchange context for overall customer performance

This suggests that the design of the analysis activities is instrumental in attaining customer profitability in market-like contexts. This result is very logical in that sophisticated analysis activities promote understanding of the complex issue of customer profitability when there is a large, heterogeneous and changing customer base. This mediator effect emphasizes the need to develop and tailor the analysis activities carefully to the company's special needs. The GoF value of the research model is very good (0.448)

Secondly, the *responsiveness design* mediates the path between responsiveness efforts and overall customer performance (see Figure 7). This indicates that the complexity of the customer base caused by the large number of customers, their heterogeneity and the higher turnover create challenges for customer management in terms of making systematic responses. Hence, planning and the systematic implementation of customer responses into practice are important in terms of enhancing overall customer performance (cf. Burns and Stalker 1961, 119-120). This means in practice that activities such as the planning and evaluation of management practices, issuing instructions to personnel working at the customer interface, and the constant adaptation of practices will enhance the implementation and therefore the effectiveness of the responsiveness efforts. Again, the GoF value of the research model is very good (0.440).

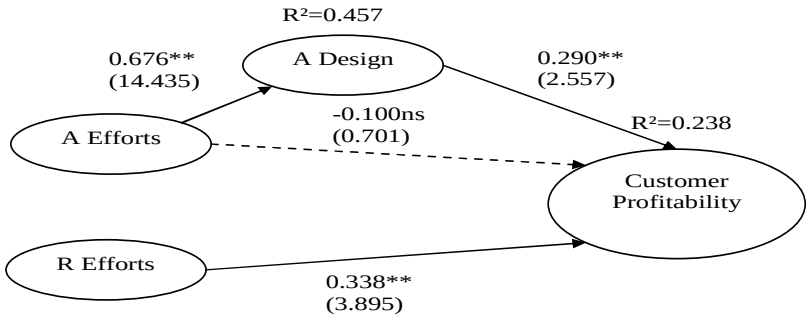

Figure 7 Mediation effects in market-like exchange context for customer profitability

Even though the analysis and responsiveness designs mediated overall customer performance and profitability, they did not mediate the relationship between efforts and firm performance. This finding is probably connected to the weakness of the link between CPM and firm performance.

H4 In a market-like exchange context the design of CPM activities mediates the relationship between CPM efforts and customer profitability **– partial support: analysis efforts are mediated by the analysis design**

H5 In a market-like exchange context the design of CPM activities mediates the relationship between CPM efforts and overall customer performance **– partial support: responsiveness efforts are mediated by the responsiveness design**

H6 In a market-like exchange context the design of CPM activities mediates the relationship between CPM efforts and firm performance **– rejected**

These results give partial support to the idea behind hypotheses 4-6, that is, market-like exchange contexts favor more planned and mechanistic CPM styles.

6.2.2 Mediator effects in network-like exchange context:

No mediation effects took place in the network-like exchange context. As hypothesized the design mediates none of the relationships between CPM efforts and overall customer performance, customer profitability, or firm performance. In other words, even though both analysis and responsiveness efforts are connected to performance, putting explicit effort into planning and developing these activities does not improve this relationship to performance. It is not the highly planned, formal practices, but the interaction and daily interaction with customers that are essential in CPM. In other words, learning about customers and responding to this knowledge take place on a daily basis.

Clearly, the challenge for management in the network context lies in the complexity of customer relationships and interaction. As Möller and Halinen (2000, 47) put it: “Network-based relationship marketing can be briefly described as the management of interdependencies between actors. The tasks and challenges in the management involve broader and deeper interaction with external partners…The key questions concern how to coordinate activities with different actors and how to mobilize and control critical resources through relationships with them”. Burns and Stalker (1961, 121) emphasize the need for flexible, organic management in “changing conditions which give rise to fresh problems and unforeseen requirements for action which cannot be broken down or distributed automatically arising from the functional roles defined within a hierarchical structure”, which is the case when the customer base is dominated by complex customer relationships and interaction.

These results give support to the ideas behind hypotheses 7-9 that network-like exchange contexts favor more informal and organic CPM styles.

H7 In a network-like exchange context the design of CPM activities does not mediate the relationship between CPM efforts and customer profitability - **supported**

H8 In a network-like exchange context the design of the CPM activities does not mediate the relationship between CPM efforts and overall customer performance - **supported**

H9 In a network-like exchange context the design of CPM activities does not mediate the relationship between CPM efforts and firm performance – **supported**

Finally, alternative research models were tested where the CPM was modeled as a second-order formative construct. Here the CPM is formed of two second-order activities of analysis and responsiveness. Both second-order activities are formed of CPM efforts and designs. Importantly the results were similar to the first-order models mediator models but weaker. Hence the first-order conceptualization fits the data better and empirical results show that CPM is better modeled as first-order formative construct.

6.3 Detailed examination of CPM practices and performance in different exchange contexts

Finally, to further deepen the understanding about CPM styles in different exchange contexts the *measurement model results* of the research models with best fit to empirical data are examined contextually. Measurement model results are not normally interpreted in structural equation modeling, but a meaningful interpretation of the indicator weights of formative measures is possible in PLS modeling because the CPM indicators have been theoretically chosen (see Terho, 2007). Moreover, the indicator weights in PLS-modeling provide information on the make-up and relative importance of each indicator in the formation of the component (Chin 1998, p. 307). In other words, rather than assuming equal weights for all indicators of a measure, the PLS algorithm allows each one to vary in how much it contributes to the composite score of the construct. Therefore indicators with weaker relationships to related indicators and to the latent construct are given lower weightings, and these varied weightings are carried through to an assessment of the theoretical estimates (Chin, Marcolin and Newstead 2003, 197).

Clearly, analyzing the measurement model weights can further extend the structural model results. The indicator weights of the different research models are compared in order to examine the CPM contingencies. The Table 5 shows all the indicator weights over 0.100: the lower values were removed in order to clarify the main results. Items that are significant on at least a 10%-level are in bold, and those with negative weights are highlighted. Because the models examining the relationship between CPM and ROI were clearly non-significant they are excluded from the table. Further, as the analysis design and the responsiveness design mediated CPM efforts only in two models they are not shown in table, but they are discussed separately in the text. The questions corresponding to the indicators can be found in the questionnaire.

Several interesting issues stand out in Table 5. The most significant of these is that the central indicator weights of the CPM performance constructs vary considerably depending on the type of exchange context and the type of performance in question. This finding highlights the relevance of the exchange context to CPM practices, and the need to tailor CPM to the contextual contingencies. Table 5 also shows that there are several negative indicator weights implying a negative influence on performance. Clearly, too, the negative items vary considerably depending on the exchange context and the area of performance. Therefore the indicators with a negative weight are valid and should be retained in the CPM measure because they all have positive weights in the other exchange context or in another area of performance. The CPM indicator characteristics are discussed in more detail below in terms of the exchange contexts.

First the indicator weights are discussed in the market-like exchange context. As far as analysis efforts are concerned, all but one item have positive indicator weights, the only negative one being analysis effort 7, which refers to segmenting customers based on their value. Interestingly this item has a significant negative influence on both overall customer performance and firm performance, but a positive but non-significant influence on customer profitability. The probable explanation for this effect is that a strict financially oriented approach to customer management can negatively affect customer satisfaction, value creation, retention, or growth which are included in overall customer performance. Therefore this finding underlines the need to take into account customer needs and value creation in customer management. A look at the positive indicators reveals that those with high weights are more evenly distributed than in the network-like exchange context. Customer grouping is at the heart of the analysis efforts in the market-like exchange context in that it has a strong positive impact on all areas of performance (strong role of analysis effort 5).

Research models / Indicator weights	Market-like exchange context			Network-like exchange context		
	Customer perf.	Customer profit.	Firm perf.	Customer perf.	Customer profit.	Firm perf.
analysiseffort1 -> AE	0,161	**0,321**		0,322	0,300	
analysiseffort2 -> AE	**0,382**	0,214	0,169	**0,472**	0,136	**0,515**
analysiseffort5 -> AE	**0,436**	**0,236**	**0,764**	-0,326		-0,299

analysiseffort7 -> AE	**-0,402**	0,156	**-0,580**	0,161		**0,604**
analysiseffort9 -> AE	0,330		0,380	**0,711**	**0,618**	**0,600**
analysiseffort10 -> AE	0,258	**0,469**		-0,334	0,213	-0,480
responseffort1 -> RE	**0,310**	0,149	**0,604**	-0,194	-0,136	-0,178
responseffort2 -> RE	**0,307**	**0,456**	**0,530**	**0,712**	**0,644**	**1,039**
responseffort4 -> RE	**0,359**	**0,450**	-0,120		-0,153	-0,253
responseffort5 -> RE		-0,152		**0,342**	**0,355**	0,207
responseffort6 -> RE		0,149		0,246	0,190	-0,189
responseffort8 -> RE	0,100	-0,313	-0,367	0,234	0,280	0,316
responseffort9 -> RE	**0,303**	0,299	0,313		0,210	

Table 5 Indicator weights (>0.100) for the research models with best fit to data

Upon closer examination of responsiveness efforts, a clear pattern emerges from table 5: all of the positive and significant indicator weights are concentrated on the responsiveness-effort indicators 1, 2, 4, and 9. These indicator weights approximate the cost-efficient treatment of customers, including the tailoring of products and services, the adoption of different operational models including the level of service and service channels, and the directing of resources to customers with high potential. Further, the acquisition of new customers is a major issue, as suggested by Johnson and Selnes (2005). On the other hand, the indicators concentrating on the development of the customer base (indicators 5-9) have very low, non-significant weights, many of which are negative. This result illustrates the more transactional nature of the customer base than in the network-like exchange context, and is consistent with the ideas of Möller and Halinen (2000) on market and network-like relationship marketing.

Finally, the discussion turns to the two design mediators in the market-like exchange context. In terms of responsiveness design, significant indicators 1, 2 and 5 are emphasized for overall customer performance. This indicates the importance of careful planning, the continuous evaluation of customer management practices, and the issuing of concrete instructions to personnel at the customer interface. In turn, as far as analysis design is concerned, the evaluation of current practices (analysis design 2) and the tailoring of the analysis criteria to the company characteristics (analysis design 4) are significant and therefore emphasized in maintaining customer profitability. Interestingly, investments in analysis methods carry a negative but non-significant weight this respect. This result is consistent with the related findings that the successful implementation of CRM requires more than just the technology (e.g., Reinartz, Hoyer and Krafft 2005, 302).

Secondly the indicator weights are examined in the network-like exchange context. The positive weights for analysis efforts are quite evenly divided among the indicators, although analysis efforts 2 and 9 are the most emphasized. This illustrates the importance of monitoring customer costs and analyzing the development of different customer groups in the customer base in improving operational and firm performance. The two indicators with negative weights are analysis efforts 5 and 10: the former shows that strict customer grouping is not essential in analyzing the customer base in a network-like exchange context. Moreover, analyzing the health of the customer base in the long term carries a negative indicator weight, which implies the need to analyze individual customer relationships rather than the structure of the customer base.

The positive and negative indicator weights for responsiveness efforts are almost opposite to the corresponding figures in the market-like exchange context. The negative weights focus on the cost-effective treatment of customers, such as the tailoring of products based on value and the directing of resources to those with high potential (responsiveness efforts 1 and 4). Another interesting issue is that the focus on customer acquisition has a very low weight. This is consistent with earlier research findings suggesting that industrial markets are characterized by stable long-term relationships (e.g., Håkansson, 1982). The positive weights focus on the development of the customer base: making low-value relationship more valuable, developing the most valuable relationships, and ignoring or terminating certain unprofitable relationships (responsiveness efforts 5, 6, and 8). The different operational models of the service level and channel type are of major importance in terms of performance (responsiveness effort 2).

In sum, the measurement model results support the validity of the CPM measure. The results support the structural model results that CPM is more strongly connected to customer performance and more weakly connected to perceived firm performance. The measurement model results further confirm that there is no link

between CPM activities and ROI. Even though some negative indicator weights were found in the testing of the CPM–performance link, they were generally non-significant and, significantly, varied according to the context. In other words, the CPM construct is a broad measure and its main aspects vary according to the exchange context and the area of performance in question. Overall, these results emphasize the need to tailor CPM practices to company needs.

7. Summary

This study has examined the relationship between companies CPM practices and performance in different exchange contexts. This is the first time the relationship between companies' customer portfolio management practices and performance has been studied empirically. The study provides a number of theoretical and managerial implications.

First of all, based on empirical data customer portfolio management is found best modeled with four first-order constructs of analysis efforts, analysis design, responsiveness efforts and responsiveness design.

Secondly, companies customer portfolio management practices is found to be connected to overall customer performance and customer profitability but only with great caution directly to firm performance. The positive relationship between CPM efforts and overall customer performance is particularly interesting and indicates that companies' actual CPM activities are flexible enough in practice to take into account the complexities of exchange in the long term. Further, the insights concerning the selling company's own value creation also imply openness and understanding of customer value.

Thirdly, different kinds of CPM styles are effective in market- and network-like contexts. The mediation effect of the design on the relationship between effort and various areas of performance was tested. The style was considered in terms of the analysis and responsiveness design constructs. A high level of design refers to an explicit focus on planning and adaptation in CPM activities, indicating a mechanistic customer management style closely resembling formal portfolio models. The results support the notion that CPM style is contingent on the exchange context.

An effective CPM style in network-like contexts was aligned only with analysis and responsiveness efforts. In other words, no mediation effects were found. This applied to all the areas of performance tested. Thus the network-like context favors a more flexible, organic management style that is suited to more complex customer relationships and exchange.

In turn, an effective management style in a market-like context is different from an effective style in network-like contexts. Analysis and responsiveness design mediated the relationship between CPM efforts and performance in two cases in the former. First, responsiveness design fully mediated the relationship between responsiveness efforts and overall customer performance. This result underlines the need for planning systematic responses, engaging in constant evaluation, and providing concrete instructions to the personnel in the effective implementation of responsiveness activities. Sophisticated design in analysis activities, on the other hand, is essential for maintaining customer profitability. In other words, analysis design fully mediates the relationship between analysis efforts and customer profitability. The constant evaluation and development of analysis practices and their tailoring to company needs enhance the performance link between the activities and customer profitability.

Finally, by comparing the measurement model results of the tested research models it has been found that the central aspects in customer portfolio management efforts vary notably by exchange context and the examined area of performance. Therefore, overall the results underline the importance of tailoring the CPM practices to company's needs and customer relationships. In network-like exchange context it is central to monitor customer relationships and the development of customer groups. The high indicator weights for effective responsiveness efforts focused on the development of the customer relationships and the customer base (customer portfolio development aspect). In a market-like exchange context customer grouping was consistently in a focal position. The high indicator weights for responsiveness efforts in market-like exchange contexts clearly underline the cost-efficient treatment of customers. Also, the acquisition of new customers was found to affect performance in market-like exchange contexts.

The major limitation of the research is the use of the single-respondent approach. This approach was adopted

because of the limited resources available: data collection from top management in a B-to-B context is difficult and time consuming, and in this case it took three months. One of the problems with single-respondent approach is the danger of common method bias. Statistical tests were carried out and they indicated the absence of this problem, although they cannot provide absolute proof. Still, by adopting a single respondent perspective it was possible to get a high response rate (44%). The objective ROI figure was found to be statically connected to subjective performance measures. The results of the research supported the connection between CPM practices and operational customer performance. In other words, there was a clear link between CPM activities and overall customer performance and profitability. The findings concerning the link between CPM and firm performance were ambiguous, and this relationship needs to be tested in future in a multiple-respondent research context. The connection with ROI should also be tested in a single-industry context.

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Appendix 1 – Questionnaire (*= removed item)

The following statements deal with strategic management of customer base and customer relationships. Please indicate to what extents do you agree or disagree with the statements in terms of the practices of your business unit (company)? 1- strongly disagree, 7- strongly agree,

Analysis efforts (AE):

AE1 We analyze the value of all customer relationships in our customer base
AE2 We analyze the costs of all customer relationships in our customer base
AE3 We evaluate the expected value of our customer relationships (*)
AE4 In our customer base, we look for customers with high future value potential (*)
AE5 In our customer base, we look for diverse customer groups that represent different value for our company
AE6 We make comparisons of our customers based on their value (*)
AE7 We segment our customers based on their value
AE8 We analyze the roles different customers have to our company in the long term (*)
AE9 We analyze the development of different customer groups in our customer base
AE10 We analyze the health of our customer base in the long term

Analysis design (AD):

AD1 We have carefully thought out the essential criteria for analyzing our customer relationships (*)
AD2 We evaluate the quality of our customer base analysis practices
AD3 We tend to discuss how to develop our customer base analysis practices
AD4 We have tailored the criteria of our customer base analysis to match the special characteristic of our business
AD5 We have invested in developing our customer base analysis methods
AD6 We adapt our customer base analysis practices based on the experiences received from current practices (*)

Response efforts (RE):

RE1 We tailor different product and service entities for customers based on their value
RE2 We have created different operation models for treating customers with different value (e.g. service channels, level of service, etc.)
RE3 We allocate our sales resources to customers in relation to their value for our company (*)
RE4 We systematically direct resources to customers that have high future value potential
RE5 With our actions, we aim at converting low-value relationships to more valuable ones
RE6 We systematically develop our most valuable customer relationships
RE7 We try to retain customer relationships that do not have development potential, but are careful with overly investing in these relationships (*)
RE8 We ignore or aim at terminating certain unprofitable customer relationships
RE9 We put effort in finding new customers that have potential value to our company

Response design (RD):

RD1 We have carefully considered the central aspects of our customer base management practices
RD2 We evaluate the quality of our customer base management practices
RD3 We try to find means to improve our customer base management practices
RD4 We put a lot of effort to apply the principles of our customer base management to our everyday business (*)
RD5 We have created concrete instructions of our customer management principles to our personnel working at customer interface
RD6 We adapt our customer base management practices based on the experiences received from our practices

Reflective CPM measure (for measure development) (1-strongly disagree, 7- strongly agree)

RF1 We seek to develop our customer base analysis practice
RF2 We analyze the current and future value of our customer relationships extensively
RF3 We seek to develop our customer base management practices
RF4 Customer value is a central factor in our customer base management practice

The following statements relate to the operational environment formed by customer relationships. Please indicate to what extent do you agree or disagree with the statements? (1-Strongly disagree, 7- Strongly agree)

Customer base size

RS1 In our business, we concentrate to a few customer relationships
RS2 We aim at developing relatively few but strong customer relationships
RS3 To succeed in our business, we aim at serving as large a customer base as possible (Reverse scale)
RS4 A central aspect for the efficiency of our business is a large number of customers (Reverse scale)

Interconnectedness in customer relationships

IC1 Third parties are often involved in our customer relationships
IC2 The actions of our customers' customers affect easily our customer relationships
IC3 We often have to pay attention to our other customer relationships when dealing with a customer
IC4 We often have to pay attention to third parties when dealing with our customers

Dynamism in customer relationships

DY1 Our customers tend to look for new products and solutions all the time
DY2 Our customers' product preferences tend to change quite a bit over time
DY3 Forecasting the acts of our customers is relatively easy (*)
DY4 The nature of our customer relationships is constantly changing

Customer turnover

TU1 We have a high customer base turnover (a large number of new/ lost customers)

Customer base heterogeneity

Please indicate how different or similar you think your customers are (1- very different, 7- very similar)

HE1 The nature and size of our customers' businesses are..

HE2 Our customers' needs are..
HE3 Our customers' payment systems are.. (*)
HE4 Our customers' ways of acting with us are…
HE5 Our customers' service requirements are..

The overall strength of customer relationships
Please approximate the composition of different customer relationships in your customer base (total 100%):

Relationship type 1: Both parties aim at maximizing their own interests. The time span is short and switching partners is easy. Price is a crucial element in exchange. (Choose %)

Relationship type 2: There is trust in the relationship and both parties are active. The time span is long, yet switching partners is relatively easy. Price is a result of mutual negotiations. (Choose %)

Relationship type 3: Both parties are committed to the relationship. Parties have devoted tailored resources to the relationship. Activities are largely coordinated and commonly planned. Time span is long and switching partners is no longer easy. There are common strategic goals in the relationship. (Choose %)

The overall relationship complexity (0-1) was calculated according to the following formula:

$$\frac{(0*\text{Transactional relat.} + 1*\text{long-term relat.} + 2*\text{Partnership relat.})}{2} \; / \; 100$$

Concentration of customers
What is the percentage number of sales that comes from the following sets of your customers? 1= less than 1%, 2= 1-5%, 3= 5-10%, 4= 10-20%, 5= 20-35%, 6= 35-50% 7= over 50%

CO1 Our largest customer: (Choose %)
CO2 Our five largest customers: (Choose %)
CO3 Our ten largest customers: (Choose %)

The concentration of the largest customers (1-7) was calculated according to the following formula:

$$\frac{(\text{Cust\_concentration1} + \text{Cust\_concentration2} + \text{Cust\_concentration3})}{3}$$

Firm performance
How would you evaluate the performance of your business unit (company) during the last three years? 1- Bad, 7- Excellent

Overall performance in relation to your goals
Overall performance in relation to your competitors

ROI
Please evaluate the average return on investment (ROI) percentage during the last three years: (1=0-4%; 2= 5-9%; 3= 10-14%; 4= 15-19%; 5=20-24%; 6= 25-29%; 7=30-35%; 8= 35-39%; 9= over 40%) ROI: (Choose %)

Overall customer performance and Customer profitability
How would you evaluate the performance of your business unit (company) a) in relation to your goals during the last three years? b) Compared to your competitors during the last three years? 1- Bad, 7- Excellent

Overall customer performance:
Achieving customer profitability:
Attaining desired growth in sales: (not used)
Creating value for customers: (not used)
Achieving customer satisfaction: (not used)
Keeping current, desired customers: (not used)