

Analysis of customer portfolio and relationship management models: bridging managerial dimensions

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Abstract

Purpose – The customer portfolio and relationship management have been of contemporary interest to the academics and practitioners. This paper aims to systematically analyze the review and critique of this important area and broadly to discuss the customer portfolio theories and their implications in reference to marketing and purchasing perspectives.

Design/methodology/approach – The major conceptual contributions in the area of customer portfolio and relationship management have been categorically analyzed in the paper. The paper provides an insight of how marketers interpret and describe companies' actions and the discussion provides a framework for relationship management, the central tenet of which is to enable managers to invest their resources in the most efficient and effective way.

Findings – The review of literature shows that the customer portfolio analysis can provide strategic input to the firm towards developing a successful planning process. The conceptual discussion in the paper on relationship management may lead the strategies in managing the corporate social capital. The alternative models have been developed in the paper in reference to the market environment and values concepts discussing the triadic relationship among the organization, supplier and customer that reflects on the contemporary managerial perspectives.

Originality/value – The managerial implications of the discussion presented in the paper would be helpful to plan and create strategies to optimize returns on customer relationship over time. This paper would be of interest to the scholars as well as practitioners engaged in strategic planning of a firm.

Keywords Marketing departments, Purchasing, Customer relations, Buyer-seller relationships

Paper type General review

An executive summary for managers and executive readers can be found at the end of this article.

The development and management of customer relationships has, in recent years, become a central focus of marketing research and conceptualization as it has been realized that they are valuable assets of a firm. Although the roots of much current thinking about relationships can be found in the early work in business marketing of the International Marketing and Purchasing (IMP) Group (Håkansson, 1982; Turnbull and Valla, 1986; Ford, 1990), important contributions have also emerged in the services marketing literature (Grönroos, 1983, 1985; Berry, 1985; Gummesson, 1985, 1987) and more recently in consumer product marketing (Christopher *et al.*, 1991). The management and development of relationships has also attracted a number of other significant contributions, such as those from Jackson (1985), Dwyer *et al.* (1987); Frazier *et al.* (1988) Ford *et al.* (1992), and Morgan and Chadha (1993). An implicit assumption, however, of

much of this work is that having “strong” customer or supplier relationships is necessarily “good”. When this assumption is stated explicitly it is immediately and obviously not so – as any sales or customer account manager knows. Some customers are just not worth having; they are difficult to satisfy, are too demanding and/or will not pay a “fair” economic price. It is therefore surprising that few research studies have addressed the key issue of customer/supplier costs and profitability, and how effectively management of customer/supplier relationships may contribute to the strategic development of the supplying firm. Additionally, there is also little research into the concept of how an established customer relationship may provide a firm with a sustainable competitive advantage.

It can be argued that relationship management is as important to marketing management as manipulating the marketing mix. Indeed, some would argue that relationship management is the most critical issue, particularly in a business-to-business situation where firms are often reliant on a small number of customers, their markets are relatively static and maintaining the existing client relationships is often essential to their ongoing business success. It is, therefore, important to understand why such “relationship” based perspectives have developed. It is also necessary to consider how understanding the significance of relationships with

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individual customers can be translated into management strategy/actions.

Customer relationship management is the strategic process of shaping the interactions between a company and its customers with the goal of maximizing current and lifetime value of customers for the company as well as maximizing satisfaction for customers. It is a complex set of activities that together form the basis for a sustainable and hard-to-imitate competitive advantage: the customer-focused organization. Although some practical guidelines have appeared on how to design and implement customer relationship management programs, there are few articles discussing the financial impact of such programs on companies? The customer relationship strategies inculcate values that help in building portfolios and retaining the customer and market segments for the long-run in order to optimize the profit of the firm.

This paper discusses the customer portfolio theories and their implications in reference to marketing and purchasing perspectives and provides a framework for relationship management, the central tenet of which is to enable managers to invest their resources in the most efficient and effective way.

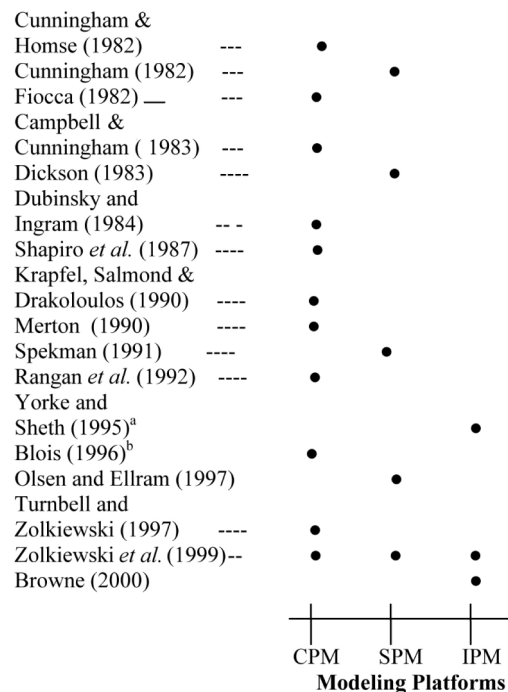
Review of portfolio models

It is logical that the explanations rooted in human and social psychology would hold great promise in advancing our understanding of stock market behavior. More recent research has attempted to explain the persistence of anomalies by adopting a psychological perspective. Evidence in the psychology literature reveals that individuals have limited information processing capabilities, exhibit systematic bias in processing information, are prone to making mistakes, and often tend to rely on the opinion of others. Rabin and Thaler (2001) discusses the explanation of risk aversion in the expected utility theory is not plausible by providing examples of how the theory can be wrong and misleading. They call for a better model of describing choice under uncertainty. It is now widely agreed that the failure of expected utility theory is due to the failure to recognize the psychological principles governing decision tasks.

The modern portfolio theory assumes that markets are one-period mean-variance efficient and ignores the investor's holding period. Merton (1990) introduced the time dimension to portfolio theory and laid the theoretical groundwork for inter-temporal portfolio selection, option pricing, performance evaluation, and dynamic investment strategies. There were other models that have been developed including the two and three dimensional axes along with single, two and three step analysis phases over the period. Figure 1 exhibits the historical depiction of the portfolio theories.

During the last 20 years a number of portfolio models have been specifically developed to address this situation, they have taken the relationship as the unit of analysis and can be assumed to be based on an understanding that long-term, interactive relationships are often the norm in this type of market structure. These models include those proposed by: Cunningham and Homse (1982), Fiocca (1982), Campbell and Cunningham (1983), Yorke (1984a), Shapiro *et al.* (1987), Krapfel *et al.* (1991), Rangan *et al.* (1992), Yorke and Droussiotis (1994) and Turnbull and Zolkiewski (1997).

Figure 1 Time-line of portfolio theories



CPM : Customer portfolio model

SPM : Supplier portfolio model

IPM : Industry portfolio model

a : Discussion and propositions, b: Customer relationship issues

Relationship portfolio concepts

The relationship theories have been contributed by many management scientists. Fiocca (1982) explaining various factors associated with the customer buying behavior and supplier relationships. Campbell and Cunningham (1983) proposed a synchronized analysis of portfolio strategy for marketing management. The following text reviews their contributions along with other contributors.

Fiocca (1982)

Fiocca (1982) suggests a number of mechanisms for assessing the proposed axes: “Difficulty in managing the customer” is a function of the level of competition for the customer, customer buying behavior and the characteristics of the product bought by the customer. “Strategic importance” is determined by the value/volume of purchases, the potential and prestige of the customer, customer market leadership, and the overall desirability to the supplier in making strategic improvements and adaptation to customer specifications. The strength of supplier/customer relationships is again measured by applying a mix of objective, judgmental or subjective factors that include:

- length of relationship;
- importance of the customer;
- friendship;
- co-operation in product development; and
- social distance.

Customer profitability was calculated by taking the revenue from that customer (gross value of sales minus the commission paid) and subtracting from it direct costs, pseudo-direct costs (the costs that could be attributed to

groups of similar customers and therefore apportioned accordingly) and indirect costs. When the profitability of each customer was calculated it was found that about 20 per cent of customers accounted for 80 per cent of profits. Perceived strength of the relationship was calculated using the variables: technical ability, experience, pricing requirements, speed of response, frequency of contact, degree of cooperation, trust, length of relationship, friendship and management distance (frequency of contact). Their analysis of two key customers showed that while both were profitable, the company was currently not supplying even half of the customers' requirements and could potentially significantly increase its own net revenues. A criticism of the Fiocca model put forward by Yorke and Droussiotis (1994) is that it does not recognize the importance of considering customer profitability. It simply assumes that different cells can be associated with different levels of profitability. The authors suggested that such an analysis can be especially useful if strength of relationship is assessed *vis-à-vis* that of competitors. This empirical test of customer analysis is interesting, but it is also problematic in a number of respects: it was conducted over a very short timescale (two months) and the authors recognize that it may not be representative of the usual situation in the industry and the company. In reality it will vary from industry to industry and market to market, with high technology companies perhaps needing to assess customer profitability quarterly while other industries probably need to consider it as part of their yearly planning cycle. Second, the way indirect and direct costs are allocated raises important questions; very often it is not easy to simply apportion management time and costs or even sales time and costs to a particular customer or contract. This assumption that customers are profitable simply because management perceives them to be, was identified by Turnbull and Zolkiewski (1997) as a general problem in most analysis. In reality, customers were often found to be not as profitable as managers believed them to be (once full account of real selling costs was taken).

Campbell and Cunningham (1983)

Reviewing back, Campbell and Cunningham (1983) proposed a three-step portfolio analysis strategy for marketing management. The Figure 2 exhibits the power balance factors and their impact in the making the portfolio decisions. Using the case study of a major packaging supplier, they suggest a three-step analysis using two variables at each stage. The first step focuses on the nature and attractiveness of the customer relationship using customer life cycle stage on one axis and various customer data on the other. The

customer life cycle stage is divided into tomorrow's customers, today's special customers, today's regular customers and yesterday's customers.

The other dimension of analysis is multivariate, involving sales volume, use of strategic resources, age of relationship, supplier's share of customer's purchases, and profitability of customer to supplier. They believe that this type of categorization will facilitate the understanding of how "strategic resources, which will ensure the future health of the business, are allocated among customers" (Campbell and Cunningham, 1983). Two major problems arise in respect of this approach. First, the conceptual validity and practicality of using a life cycle approach to customer analysis can be challenged. Second, the choice of appropriate variables for analysis can be difficult; obtaining the required data on the variables can also present major problems. The second step of analysis focuses on the customer's own performance as an important aspect of customer portfolio planning. The third and final step involves the selection of the key customers for analysis. Another two-dimensional grid is proposed for this stage with growth rate of Customer's market (high, medium, low and decline) on the vertical axis and competitive position (relative share of customer's purchases) on the horizontal axis. Companies are placed on the matrix and are represented by a circle that represents their sales volume. However, such a framework provides a useful conceptual starting point for undertaking strategic analysis of an organization's customer portfolio.

However, this type of analysis is complicated by another problem of availability of accurate figures for market share in business-to-business marketing situations. Companies often do not have accurate figures for their own market share let alone the ability to collect this data from all but their closest customers (and this assumes that these customers have the data). Another potential difficulty arises from how the product is used by the customer; if it is utilized in the customer's final product, then this type of estimation is inherently useful though difficult. However, if capital goods or services are being supplied then the estimations are unlikely to be as meaningful.

The benefits of consumer-firm relationships have been recently addressed and include increasing efficiency and effectiveness in maintaining current customers rather than prospecting new customers, and improved competitive advantage. The consumer benefits through consumer learning, in such situations can be stored, processed and retrieved to use in subsequent situations. This leads to an ability to manage future decisions based on simplifying problem-solving situations and reducing risk (Sharma and Sheth, 1997). However, it is clear that relationships are not always desired by customers (Blois, 1996; Barnes, 1997; Benapudi and Berry, 1997; Fournier *et al.*, 1998) and the efforts of the firm to maintain such a relationship may not only lead to customer irritation but also be costly for the firm in terms of money invested in undesired relationships. It has also assumed to some extent that relationships are always desirable. Thus it has ignored equally fundamental and rewarding short-term relationships, or less committed relationships that reflect the nature and choices of customers, in particular consumers.

Figure 2 Power judgment in portfolio decision

Limited	Dependent (Buyer Controlled)	Independent
Buyers	Independent	Dependent (Supply Controlled)
Large	Large	Limited
	Suppliers	

Customer-supplier relationship theories

The conceptual issues in customer-supplier relationships have been led by Shapiro *et al.* (1987) and Krapfel *et al.* (1991). Besides, Turnbull and Zolkiewski (1997) have also contributed to these theories subjecting towards appropriate tests.

Shapiro *et al.* (1987)

Shapiro *et al.* (1987) in developing a customer classification matrix focus on customers as profit centres. Three variables – costs to serve suppliers, customer behavior and management of customers – were used to investigate the profit dispersion of the customer portfolio. Four types of costs – presale, production, distribution and post-sale service costs – were used to define the cost to serve axis. Combining this calculation with the net price charged they found that such analysis identified a wide range of profit margins both by customer and type of product sold.

Shapiro *et al.* (1987) suggest that while many suppliers believe that if they analyze the breakdown of their accounts, most accounts will fall into the “carriage trade” and “bargain basement” quadrants. Yet, when analysis is actually performed, it will usually show that over half a suppliers’ accounts fall into the “passive” and “aggressive” quadrants as exhibited in Figure 3. They contend that “Four aspects of the customer’s nature and position affect profitability: customer economics, power, the nature of the decision-making unit, and the institutional relationship between the buyer and seller” (Shapiro *et al.*, 1987). They further developed the approach and demonstrated that the grid can be successfully used to segment customers in mature industrial markets. Turnbull and Zolkiewski (1997) also tested this matrix using the case study of a UK-based computer systems house and identified a scatter of customer projects across the matrix.

Krapfel *et al.* (1991)

Krapfel *et al.* (1991) define relationship value as a function of four factors: criticality, quantity, substitution and slack. This may be explained as:

$$RV_i = f [C_j Q_j R_j S_j]$$

where:

- RV_i is the value of the relationship to the seller.
- C_j is the criticality of the goods purchased by the buyer.
- Q_j is the quantity of the seller’s output consumed by this buyer.
- R_j is the replaceability of this buyer (i.e. the switching cost of accessing other buyers).

Figure 3 Customer satisfaction matrix by Shapiro

High	Passive	Carriage Trade
Net Price	Bargain Basement	Aggressive
Low	Low	High
	Cost to Serve	

S_j is the cost savings resulting from the buyer’s practices and procedures.

They also use a portfolio approach to analyze customer-supplier relationships and propose a relationship classification matrix based on the concepts of “relationship value” and “interest commonality”.

Empirical studies on customer-supplier perspectives

Turnbull and Zolkiewski (1997) tested the Krapfel *et al.* (1991) matrix. They used a customer-supplier perspective and utilized data from the same UK-based computer systems house as used in the test of the Shapiro *et al.* (1987), matrix. Following their analysis based on the Shapiro *et al.* (1987) and Krapfel *et al.* (1991) matrices, Turnbull and Zolkiewski (1997) proposed a three-dimensional basis for customer portfolio analysis. This proposal resulted from a consideration of the differences in the nature of the matrix axes (i.e. the variables being used). With the Shapiro *et al.* (1987), matrix, axes of the matrix are relatively easy to measure while with the Krapfel *et al.* (1991) matrix, axes are much more subjective. They argue that three-dimensional analysis based on cost to serve, net price and relationship value is appropriate while segmenting the customers of any firm, especially because such an analysis provides a more comprehensive overview the analysis done by simply using two variables. These portfolio theories have been tested over the period with variety of data sets and have been improved subsequently. The major criticisms on the current models include as following:

- 1 Is it viable to transpose product life cycle concepts into a “customer life cycle” and then use this as a basis for planning? While a number of authors have discussed this concept at length, its application to this sort of analysis can be problematic.
- 2 There are a wide range of variables and potential ways to calculate the dimensions of analysis, which mitigates against easy comparison of analyses.
- 3 The actual analysis may be easily distorted by a number of factors, including:
 - lack of accurate data;
 - suppliers being reliant on one or two major customers;
 - data being collected over too short a period; and
 - the subjective basis of many of the variables.
- 4 Many of the models do not explicitly include customer profitability. Experience shows that customer profitability data is difficult to collect: although direct costs should be apportioned directly on a customer-by-customer basis, many companies do not have adequate mechanisms for allocating indirect costs. It has been observed that when matrix positioning involves a mixture of actual and subjective data, the results may prove unsuitable for use in future comparisons. Although weighting of variables may go some way to alleviating this.
- 5 Generally, the scales proposed for axes are imprecise; for instance, what are low and high values? Again, such values implicitly involve subjective judgements and therefore become more difficult to assess. However, they can be very useful if it is accepted that they simply provide a rough conceptual guide to sorting out the major customers from the mass of customers, especially when it is not very clear what to do because the majority of customers occur in a large cluster.

Customer life-time value concept has gained its importance as acquiring a new customer is several times more expensive at different stages of the product life cycle. Consequently, marketing practitioners are often focusing on retaining customers as long as possible with the movement of the product life cycle. However, there are large differences existing within the group of long-life customers in terms of setting close to the movements of the product life cycle (Basenes *et al.*, 2002). The quality of information to support the process of buying decisions of customers is a vital factor at all levels of product lifecycle. The data quality on product marketing in reference to core and augmented benefits, competitive advantages and referrals provide a strong base for developing decision constructs among the customers. Such information quality with comprehensive database supports the relationship between quality perceived and quality performance, contingent on the nature of buyer-seller relationships (Rajagopal, 2004). The firms may be engaged in selling a range of products, when each consumer prefers to concentrate his purchases from a single supplier, evaluating the buying and non-buying expenditure (convenience, comprehension of data, cost to customer and care – 4Cs) of using additional suppliers. If the firms offer different product ranges, some consumers will nevertheless use multiple suppliers to increase product variety and, since these consumers' purchases will be sensitive to the difference in firms' prices, the market may be quite competitive.

The critical dimensions of the portfolio theories emerged during the late twentieth century is summarized in the Table I.

An active portfolio management is concerned with objectives related to the out performance of the return of a

target benchmark portfolio. Browne (2000) considers a dynamic active portfolio management problem where the objective is related to the trade-off between the achievement of performance goals and the risk of a shortfall. Specifically, we consider an objective that relates the probability of achieving a given performance objective to the time it takes to achieve the objective. This allows a new direct quantitative analysis of the risk/return trade-off, with risk defined directly in terms of probability of shortfall relative to the benchmark and return defined in terms of the expected time to reach investment goals relative to the benchmark. The resulting optimal policy is a state dependent policy that provides new insights.

Alternative dimensions in portfolio models

The customer value concept is influenced by the organizational performance and determines the structure of competitive advantage towards setting decision boundaries of the consumers. The process of delivering customer value is developed within a microeconomic framework of the business organizations. The role of the organizations may be viewed from the perspective of customer describing the ratio of outputs (e.g. perceived use value, reliability, safety, comfort) that customers obtain from the organizational system. The business organizations play a critical role in helping the existing customers and prospective customers in understanding the value associated with their buying decisions. However, in many cases organizational factors should be considered in their interdependence such as

Table I Critical dimensions of the portfolio theories

Contribution	Conceptual platform ^a	Core issues
Fiocca (1982)	CPM	Customer portfolio management is a function of level of competition for customers, buying behavior and product attributes in use. The model does not take into account the distance and cultural factors and overlooks the significance of the customer profitability
Campbell and Cunningham (1983)	CPM	Relationship between customer life cycle and customer data on various buying parameters is the core issue addressed in the portfolio model. The customer preferences and the portfolio planning, customer market and level of competition are the basic determinants of the model
Shapiro <i>et al.</i> (1987)	CPM	The model emphasizes the customer as the profit centre. It is a function of the factors that include cost to serve suppliers, customer behavior and management of customers
Krapfel <i>et al.</i> (1991)	CPM	This portfolio model analyzes the customer-supplier relationships and proposes a relationship classification matrix based on the relationship value and interest commonality. The model discusses four classifications – partner, friend, rival, and acquaintance emerging from the relationship value and interest commonality variables
Olsen and Ellram (1997)	SPM	This model discusses the three-step analysis of supplier relationship. The first step involves the portfolio analysis of the purchases of the company on the matrix bond with purchase situation on one axis and strategic importance on the other. The second stage is built around a 3 × 3 matrix with high, medium and low as the categories on each axis. One of the axes represents relative supplier attractiveness while the other depicts strength of relationship. The last stage involves comparing the results of the earlier matrices
Turnbull and Zolkiewski (1997)	SPM	The model discusses the profitability and rate of customers in order to realize the sales volume. The customer portfolio matrix has been designed considering three-dimensional analysis of the variables – cost to serve, net price, and relationship value
Browne (2000)	IPM	Dynamic active portfolio management related to the trade-off between achievement of performance of goal and risk of shortfall forms the thesis of the model

Notes: ^a CPM: customer portfolio model; SPM: supplier portfolio model; IPM: industry portfolio model

customer satisfaction, reputation, and development of core competences.

Reviewing the existing portfolio models and analyzing the gaps thereof it may be required that the customer portfolio models be structured in reference to the market environment and value determinants. The portfolio decisions of customers depend on subjectivity of the market environment that appears in different forms. In constructing the portfolio decision model, the expectation formation process is based on the market environment factors like industry and product attractiveness, risk, customer life cycle and variables of human behavior and the economic factors. There are some portfolio decision models discussed in the following text that may be considered as a supplement to the existing models and a contribution to the topical knowledge base.

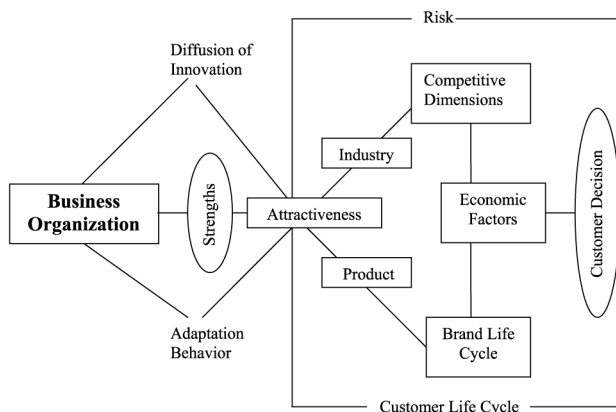
Market environment-related portfolio concept

The market environment related factors affect the customer portfolio decisions to a large extent in a given market conditions (see Figure 4). The customer-organization (C-O) fit has been exhibited in the model and the major attributes of the factors involved in customer decisions (Rajagopal, 2002) has been discussed. The model may also be explained as an instrument to analyze the individuals’ attraction to functional variables of marketing viz. competition, brand life cycle, and the diffusion and adaptation of innovation and technology that determine the strength of industry attractiveness. The industry attractiveness is measured in terms of its competitive gains that reflect in terms of the relative market share, growth and sales. The construct of the model has been built around the market environment factors by implementing the C-O fit as the similarity between customers and business organizations on five points of comparison:

- 1 Behavioral dimensions of the customers.
- 2 Attractiveness.
- 3 Competition.
- 4 Economic variables.
- 5 Brand performance.

The strength of the business organizations in effective diffusion of innovations and technology and inducing the responsive behavior towards its adaptation would help in building the industry and product attractiveness. The brand life-cycle in association with product life-cycle determines the product attractiveness factors (Rajagopal and Sanchez, 2004).

Figure 4 Market environment related portfolio model



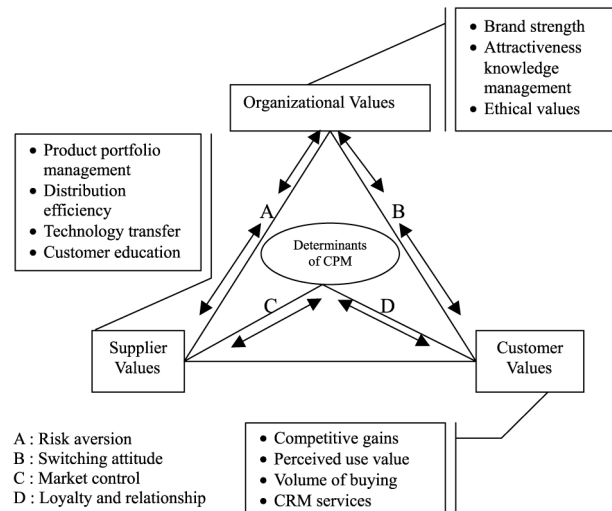
The fusion of variables of brand life-cycle and competitive dimensions emerging from the pool of economic determinant play significant role in customer portfolio decisions. The economic determinants consist of 4As (accessibility, approachability, affordability and adaptability), 4Cs (convenience, comprehension, cost to customers and care), and price – and non-price factors leading to quality and services (Rajagopal, 2000). The risk factor is predominant in marketing, and it is also associated with the industry attractiveness and influencing the customer lifecycle in making portfolio decisions. The risk factor in portfolio decisions may drive the customers towards higher prices and lower risk premiums for an isolated portfolio while lower prices with low premiums may turn out to be favourable for the repeat decision.

Value-based portfolio model

This model analyzes optimal portfolio choice and consumption with values management in the organization-supplier-customer triadic relationship. The value concept in the above relationship governs the customer portfolio decision in terms of formulation of recursive utility over time. It shows that the optimal portfolio demand for products under competition varies strongly with the values associated with the brand, industry attractiveness, knowledge management and ethical issues of the organization. The extent of business values determines the relative risk aversion in terms of functional and logistical efficiency between the organization and supplier while the switching attitude may influence the customers if the organizational values are not strong and sustainable in the given competitive environment. The model assumes that a high functional value integrated with the triadic entities would raise the market power of the organization, sustain decisions of customer portfolios and develop long-run relationships thereof. The customer value concept is utilized to assess product performance and eventually to determine the competitive market structure and the product-market boundaries.

The value based portfolio model (see Figure 5) explains that the value based customer portfolios would enhance the customer value as the product efficiency viewed from the

Figure 5 Value based portfolio model



customers' perspective, i.e. as a ratio of outputs (e.g. resale value, reliability, safety, comfort) that customers obtain from a product relative to inputs (price, running costs) that customers have to deliver in exchange. The derived efficiency value can be understood as the return on the customer's investment. Products offering a maximum customer value relative to all other alternatives in the market are characterized as efficient. Market partitioning is achieved endogenously by clustering products in one segment that are benchmarked by the same efficient peer(s). This ensures that only products with a similar output-input structure are partitioned into the same sub-market. As a result, a sub-market consists of highly substitutable products.

The value brand portfolio model illustrates the customer portfolio management (CPM) within the triadic relationship of the organization-supplier and customer. The customer values are reflected in their competitive gains, perceived use values, volume of buying and level of quintessence with the customer relationship management services of the organization. If these variables do not measure significantly, there emerges the development of switching attitude among the customers. If the organizational values are low the supplier relationship may be risk averse due to weak dissemination of values from organization to the suppliers.

The customer relationship management (CRM) has been conceived by the firms more aggressively since the past decade as a tool to measure the customer satisfaction and values associated thereof. CRM allows the firms to acquire the customer data rapidly and identify the most valuable customer over a period of time in order to increase the customer loyalty by providing customized products and services. CRM process also reduces the cost of serving these customers and makes it easier to prospect and acquire similar customers in the identified segment. However, CRM may be an assured tool in acquiring new customers, developing loyalty and enhancing the value perceptions. Some studies reveal that CRM projects did not produce the anticipated results as the initiatives taken in the customer relationship process had not only failed to deliver the profitable growth but also damaged the longstanding relationship. Nonetheless, CRM can be a tool to augment the customer value provided it is implemented before creating a customer strategy. Rolling out the CRM strategy before changing the organizational policies, not assuming the CRM over sensitive to technology, as there are other ways to build and maintain the customer relationship and managing with stalking and non-wooing customers can help making CRM strategy effective (Rigby *et al.*, 2002).

Managerial implications

This review clearly shows that customer portfolio analysis can provide strategic input into a firm's planning processes and may also be the key to a successful relationship management strategy (managing the corporate social capital). However, the use of portfolio analysis should only be undertaken after due consideration has been given to the limitations inherent in the analysis and particularly the identification and definition of the important criteria for analysis. There are two main issues which result from the review of literature:

- 1 How can subjective (management) values be incorporated into the calculations? Many of the examples showed to a greater or lesser extent the difficulties of this.

- 2 Which variables are the most pertinent? In conjunction with this, it seems that apart from calculations of the profitability of the various projects and customers, quantitative measures of customer/portfolio management have not been easy to identify.

It is apparent from the various practical attempts to use the portfolio models that although these models are inherently appealing as a means for analysis, in practical terms they are extremely difficult to define. The real problem lies in the fact that the definitions simply do not involve easily collected "hard" data; for example, many organizations do not have mechanisms which allow them to calculate the real "cost to serve" individual customers or even market segments. All firms want profitable customers and valuable relationships. The difficulty comes with the associated calculations. In view of a firm being embedded in three types of relationship portfolio and believing that portfolio analysis provides the key to successful relationship management, we may have unwittingly described the inherent constituents of corporate social capital: customer relationships, supplier relationships and indirect relationships. Many of the variables that are proposed in the models reviewed in this paper are clearly related to the revenues and capital assets of the firm. It may be of importance to further recognize the conceptualization and empirical research that more explicitly integrates the contributions of sociology and business-to-business marketing.

The concept of the indirect portfolio needs further development in reference to the competitor portfolios. The models focusing on this aspect should allow a strategist to map the links from competitors to an organization's customers and suppliers, when considered in totality. Such concept should be able to discuss the competitor actions. Likewise the supplier or potential customer portfolios could be introduced and applied in deriving decisions about targeting new customers or selecting new suppliers. Advances in technology mean that modelling such data should be easily accomplished. There is further scope for empirical testing and for conceptualization. In particular, rigorous comparisons of the various axes proposed in the different models needs undertaking along with the provision of definitive descriptions of the component, especially when qualitative issues are at hand. The standardization of such definitions is essential if the models are to be effectively and efficiently used as a strategic decision making tool.

The above discussion on the customer portfolio models raises the issues as how relationship portfolios can provide a mechanism for developing a coherent relationship management strategy. Choice of appropriate models or dimensions is complex, as it partly depends on the nature of the company and partly on micro-environment that is perceived by the company in reference to the relationship management competitors' share emergence of new markets etc. The two-dimensional matrices do not provide enough depth of analysis. The answer may lie in the step-wise analysis (Fiocca, 1982; Campbell and Cunningham, 1983) or in multi-dimensional analysis (Turnbull and Zolkiewski, 1997). The choice of model must also be made with full consideration of the limitations of using portfolio modelling. It has been observed through variety of applications of the models that these models are inherently appealing as a means for analysis, in practical terms they are extremely difficult to

define. The real problem lies in the fact that the definitions simply do not involve easily collected “hard” data; for example, many organizations do not have mechanisms, which allow them to calculate the real “cost to serve” individual customers or even market segments. The issue of customer profitability and relationship value has an inherent appeal in all the models. All firms want profitable customers and valuable relationships. The difficulty comes with the associated calculations. However, the suggestion of Shapiro *et al.* (1987) that the real costs of supporting various customers should not be considered in isolation by managers and that they should be aware that high variations in these costs do often exist. It is also crucial that the data used to calculate customer profitability takes into account, the adaptation/development costs for new products/services as well as the more “tangible” indirect costs such as sales expenses. Yorke (1984b) notes how infrequently management attention is paid to the effects in terms of net profit of applying resources to a particular segment or even a particular customer.

The application of these models needs a strong support of database and computation skills. On a tactical level managers need to consider the optimum spread of customers on a matrix. This needs careful attention and the application of managerial judgement and experience. It cannot be prescribed by a text. They should also be prepared to vary their management style in response to the analysis they prepare. For example a different style may well be needed to deal with customers who do not yield much profit and present high costs to serve. All of these have postulated that portfolio theory is a useful theoretical approach to the analysis, categorisation and management of supplier-customer relationships. Despite this, there has been relatively little empirical research reported that informs other researchers, academic or managerial, about the reality of relationship management. It is currently not clear what methods companies actually use for managing relationships or whether they include a formal, academic system. At the moment it is not known how systems for managing relationships, academic or otherwise, are physically put into practice within companies.

Customer portfolio management is a multi-level process that encompasses understanding the customer portfolio, developing a plan, managing implementation of the plan and evaluation thereof. The managers of the company may identify high-potential customers, increase their value through target offers, and personalize their service to ensure loyalty and to drive up the profit opportunities. The following applied portfolios may be developed by the companies in order to gain the high customer value-high profit matrix:

- *High profitability* – customers who have high actual and potential value, coupled with relatively low cost to service.
- *High potential* – customers who have high potential value, medium actual value, and low cost to service.
- *Underperforming* – customers who are currently unprofitable.

The customer portfolio management process should then lead to plan and create strategies to maximize return on customer relationships, either by portfolio or individual accounts.

Customer profitability is one of the most frequently used and most important a key figure for customer valuations. This may be easily calculated as the difference between revenue

and costs. The customer portfolio analysis is more useful to perform detailed customer contribution margin analysis including different revenue types, costs of products, acquisitions, and services and retaining customers in order to produce a better coherent picture.

Conclusions

The customer portfolio models reviewed in the paper conceptually address the functional relationships between the customers and suppliers in the process of marketing. The new thought process has been exhibited in the customer portfolio models structured in reference to the market environment and value determinants in order to enhance the scope of the existing portfolio models. Customer relationship management may be described as the strategic process involved in developing interactions between a company and its customers with an objective of optimizing current and lifetime values of customers for the company as well as maximizing satisfaction for customers. The customer relationship strategies implant values that help in managing portfolios and retaining the customer and market segments for long-run in maximizing the profit of the firm.

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Executive summary and implications for managers and executives

This summary has been provided to allow managers and executives a rapid appreciation of the content of the article. Those with a particular interest in the topic covered may then read the article in toto to take advantage of the more comprehensive description of the research undertaken and its results to get the full benefit of the material present.

The key role of customer relationships

Customer relationships can be valuable assets for a firm. However, "strong" customer relationships are not always a good thing. Some customers are simply not worth having because they are too difficult to satisfy or will not pay a fair

economic price. Surprisingly, few researchers have examined customer costs and profitability, and how effective management of customer relationships may contribute to the strategic development of the firm. There is similarly little research into how an established customer relationship may provide a firm with a sustainable competitive advantage.

Customer relationship management involves putting in place strategies that optimize both the current value and lifetime value of the customer, and maximize his or her satisfaction. Customer relationship strategies implant values that help the company to manage portfolios and retain the customer and market segments for the long run, and maximize business profits. All firms want profitable customers and valuable relationships. A central feature of relationship management is to enable managers to invest their resources in the most efficient way.

Data collection is not straightforward

Rajagopal and Sanchez demonstrate that customer portfolio analysis can provide strategic input into a firm's planning processes and may also be the key to a successful relationship management strategy. However, it can be very hard to collect the hard data required and to carry out the associated calculations. For example:

- many organizations do not have mechanisms for calculating the real "cost to serve" individual customers, or even market segments;
- too few firms map the links from competitors to the organization's customers and suppliers;
- when mapping customer profitability, companies often neglect to take account of the adaptation/development costs for new products and services, as well as the more obvious indirect costs such as sales expenses; and
- firms seldom make use of the portfolios of potential customers, when making decisions about which customers to target.

Advances in information technology can help to rectify some of these shortcomings.

Using the results

Managers need to use their judgement and experience when deciding the optimum spread of customers to consider. Armed with the results of the analysis, managers must be prepared to adopt a different style to deal with customers who do not yield much profit and are costly to serve, from the style they would use towards more profitable customers. Having identified high-potential customers, managers need to increase their value through target offers, and through personalizing the product to ensure loyalty and drive up profit opportunities. And managers need to consider ways of converting "underperforming" customers, who are currently unprofitable, into profitable customers. Maximizing the return on customer relationships may require managers to take either a portfolio or an individual approach.

(A précis of the article "Analysis of customer portfolio and relationship management models: bridging managerial dimensions". Supplied by Marketing Consultants for Emerald.)