

**DEMAND CHAIN MANAGEMENT –
INTEGRATING MARKETING AND SUPPLY CHAIN MANAGEMENT**

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ABSTRACT

This paper endorses demand chain management as a new business model aimed at creating value in today's marketplace, and combining the strengths of marketing and supply chain competencies. Demand chain design is based on a thorough market understanding and has to be managed in such a way as to effectively meet differing customer needs. Based on a literature review as well as the findings from a co-development workshop and focus group discussions with marketing and supply chain professionals, a conceptual foundation for demand chain management is proposed. Demand chain management involves (1) managing the integration between demand and supply processes; (2) managing the structure between the integrated processes and customer segments and (3) managing the working relationships between marketing and supply chain management. Propositions for the role of marketing within demand chain management and implications for further research in marketing are derived.

Key Words: Demand Chain Management; Marketing and Supply Chain Management Integration; Customer Value Creation.

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INTRODUCTION

Conceptual and empirical research on the concept of market orientation has long suggested that interfunctional coordination is key to achieving the main goal of marketing, the creation of superior customer value (e.g. Jaworski and Kohli 1993, Kohli and Jaworski 1990). As a consequence, a stream of research on the relationship between marketing and R&D (e.g. Gupta et al. 1986), marketing and finance (e.g. Rajendra et al. 1998), marketing and engineering (Fisher et al. 1997) and the integration of marketing with several other functions in the formation of business strategy can be traced (e.g. Hutt et al. 1988; Kahn and Mentzer 1998). The overarching rationale of this research is that customer value is being created through the integration of areas that are not traditionally associated with marketing.

The relationship between different disciplines sharing the same customer focus and market commitment has always had an underlying internal competition for primacy, i.e. it is also concerned with how each of the functions add value to the company. Over the last decade, critical voices have stressed that marketing has generally not been very good at managing out-of-the-box and across boundaries (Piercy 2002), has been complacent in its view that marketing “owns the customer” (Brady and Davis 1993), has failed to provide the coherence to corporate organisation, operations and processes that its proponents claim (Rainbird 2004), and, consequently, was outpaced by new models aimed at building value which originated mainly in manufacturing, operations or IT, but not in marketing (Doyle 1995).

One of these models, which has rapidly become a strategic priority in many companies, is supply chain management (SCM). SCM has grown in importance since the early 1990s, although the approach was introduced in early 1980 (Oliver and Webber 1982). SCM can be defined as “the management of upstream and downstream relationships with suppliers and customers in order to create enhanced value in the final market place at less cost to the supply chain as a whole” (Christopher 1998). The synergies between SCM and marketing have been widely acknowledged (e.g. Martin and Grbac 2003; Ellinger 2000; Svensson 2002), leading some to conclude that better coordination could define competitive superiority in new ways (Piercy 2002, p. 247).

The most recently introduced approach of demand chain management (DCM) seems to capture the proposed synergies between SCM and marketing by starting with the specific customer needs and designing the chain to satisfy these needs, instead of starting with the supplier/manufacturer and working forwards (Heikkilä 2002). Such an integration seems mandatory in today's marketplace, where customers benefit from having real-time access to their accounts, making real-time changes in their customised product configuration and communicating their individual service requirements. While most DCM contributions to date stem from SCM and operations (e.g. Vollmann 1995; Childerhouse et al. 2002, Lee 2001, Lee and Whang 2001; Rainbird 2004), selected citations among marketing academics can also be traced (Baker 2003). This paper proposes DCM as a model which can stimulate new research in marketing, and thereby leverage its contribution to value creation for the customer as well as for the company.

So far, most contributions to DCM have been based on best practice examples (e.g. Lee and Whang 2000; SAP 2003; Deloitte 2002; Langabeer and Rose 2002) and lack a conceptual foundation. In order to develop a DCM framework and derive the roles of marketing within DCM, we conducted a co-development workshop as well as focus group discussions to generate additional practitioner input.

The objectives of our paper are firstly, to show the advantages of an integration between marketing and SCM; secondly, to demonstrate how DCM can leverage the strengths of marketing and SCM and meet the challenges of customer value creation in today's marketplace and thirdly; to suggest a conceptual framework for DCM with propositions for further research addressing the role of marketing in DCM. We draw on a literature review and compare, contrast and supplement it with our findings from a discovery-orientated co-development workshop and validating focus group discussions. The article is organised into three parts: in the first part, the benefits of the integration between marketing and supply chain management are discussed. Next, the few existing works on demand chain management are presented and the concept is defined. In the third and main part, a conceptual model for demand chain management that integrates the emerging themes from our exploratory field work with the existing literature is developed and the roles of marketing within DCM are derived.

MARKETING AND SUPPLY CHAIN MANAGEMENT

The old “mantra” of marketing success, i.e. having the right product in the right place at the right time, suggests why SCM has increasingly gained influence in areas which were originally the domain of marketing and marketing channel management. At the same time, however, it also demonstrates the synergies between both disciplines.

In SCM, much of the recent debate has centred on the ability of the supply chain to be either “lean” (Womack and Jones 1996) or “agile” (Goldman, Nagel et al. 1995). Lean supply chains on the one hand focus on doing “more with less” by reducing waste or “muda” through inventory reduction, lean manufacturing, and a just-in-time approach. A lean approach is said to be suitable for markets characterised by predictable demand, high volume and low requirements for product variety. Agile supply chains, on the other hand, are designed for flexibility, emphasising the supply chain’s ability to respond rapidly to changes in demand, both in terms of volume and variety. The market conditions in which companies with agile supply chains find themselves are characterised by volatile demand and high requirements for variety (Christopher 2000). The trend towards commoditisation in many industries today has pushed lean as well as agile SCM to the fore. In markets where customers perceive little difference between products and in which brand loyalty dwindles, timely availability becomes a major determinant of success. Still, the tempting promises of SCM, which aims at “lowering the total amount of resources required to provide the necessary level of customer service” (Jones and Riley 1985), should not disguise its limitations: SCM focuses on the efficient matching of supply with demand but does not provide answers to the customer conundrum, i.e. it does not help the company to find out what the customer perceives as valuable, and how this customer-perceived value can be translated into customer value propositions. In other words, supply chain efficiency by itself will not increase customer value and satisfaction (Rainbird 2004).

Ever since the academic debate began on the theoretical foundation of marketing, the “creation of value through exchange processes” (Sheth, Gardner and Garrett 1988, p. 201) has been widely accepted as the “raison d’être” of marketing. Today, the value orientation is more prevalent than ever before (Piercy 1998, Flint 2004). Customer value can be defined as “a customer’ perceived preference for and evaluation of those product attributes, attribute performances, and consequences arising from use that facilitate achieving the customer’s goals and purposes in use situations” (Woodruff 1997, p. 142). This definition incorporates a hierarchy with attributes, consequences and goals and thereby emphasises the active role of the customer in the value creating process. Moreover, Parasuraman (1997) stresses the dynamic nature of customer value, which doesn’t only vary across customers but also within customers over time. As a consequence, companies need to understand not only what each

customer values but also the drivers behind changing perceptions of value over time (Flint et al. 1997). Marketing's strength lies in understanding the forces which affect the way in which customers perceive value (obtaining market and customer knowledge), finding out the differing needs of customer groups (market/customer segmentation), translating them into product and service packages to meet those differing needs (customised product/service development) and marketing the packages through customer value propositions (pricing, branding, communication, promotion). A key component of present conceptualisations of the strategic role of marketing is customer relationship management (CRM). CRM has been defined as a macrolevel process "that involves the development and leveraging of market intelligence for the purpose of building and maintaining a profit-maximising portfolio of customer relationships" (Zablah et al. 2004).

To summarise, whereas supply chain management focuses on efficient supply, and tends to be cost-orientated, marketing is more concerned with revenue by focusing on the demand side of the company. Evidently, together, they determine the company's profitability. Within the marketing as well as the supply chain literature, the need to link both sides has been emphasised. From a marketing perspective, Flint (2004) argues that effective marketing strategy implementation demands SCM, because it includes the distribution component of a marketing strategy. Similarly, Sheth et al. (2000) emphasise in their customer-centric marketing approach the need for marketing to become responsible for supply management¹. They argue that in markets with increasing diversity in customer needs and wants, "companies will have to rapidly adjust their supply to meet demand, that is, practice demand-driven supply management" (p. 61). Moreover, Kumar et al. (2000) suggest that market driven firms will gain a more sustainable competitive advantage by not only offering superior customer value propositions, but by having a unique business system to support it. The business system as the configuration of activities required to create, produce and deliver the customer value proposition refers to SCM. Shrivastava et al. (1999) define CRM, SCM and new product development as the three core business processes which explicitly contribute to generating and sustaining customer value. They argue that the role of marketing is to connect these processes, yet admit that while it will have a leading function in managing customer relationships, its role in SCM is restricted to "articulation and navigation" (p. 172). Interestingly, the stream of research in marketing which recognised the move towards networks and network competition at the beginning of the nineties redefined and extended

¹ The terms supply management and supply chain management are used inconsistently by different authors. However, supply management appears to be used more often in the context of the intra-company integration of supply functions whereas supply chain management includes intra- and inter-company integration (e.g. Bechtel and Jayaram 1997, Lambert and Cooper 2000, Cooper et al. 2001, Mentzer et al. 2001).

the role of marketing, but did not acknowledge the need for a closer integration of marketing and SCM (Achrol 1991 and 199; Achrol and Kotler 1999).

Within the SCM literature, most of the contributions which aim to define SCM refer to the importance of integrating marketing into the SCM concept. For example, Cooper et al. (1997) and Lambert and Cooper (2000) define SCM as the integration and management of key business processes across the supply chain. They outline three marketing-related business processes: (1) CRM, (2) customer service management and (3) demand management. The demand management process, in particular, must balance the customer's requirements with the firm's capabilities and use key customer data to reduce uncertainty and provide efficient flow throughout the supply chain. Mentzer et al. (2001) also build their model of SCM on the interfunctional coordination of key business processes spanning supply and marketing- related functions. They conclude that the question of how these functions can be effectively coordinated needs to be researched. Similarly, Bechtel and Jayaram (1997) suggest a research agenda for SCM and emphasise the need for the supply chain to begin with the customer. They propose that "a better term would be seamless demand pipeline, where the end user and not the supply function drives the supply chain" (p. 18-19). Fisher (1997) links the integration of marketing into SCM to the concept of the supply chain's "market mediation role". Within this role the supply chain needs to ensure that the "variety of products reaching the marketplace matches what consumers want to buy" (p. 107). Min and Mentzer (2000) emphasise the important role that marketing orientation and relationship marketing play in the implementation of SCM. Finally, the Efficient Consumer Response (ECR) approach is another area which emerged within the logistics community and clearly addresses the interface between marketing and SCM (e.g. Alvarado and Kotzab 2001).

Overall, it appears as if the supply chain community has considered the integration of marketing more openly than the other way round. Min and Mentzer (2000) even argue that "the marketing concept, market orientation, relationship marketing and SCM are not separate but inextricably intertwined" (p. 782). Other authors state that the SCM concept aims to reintegrate marketing and logistics, which initially were closely linked but drifted apart over time (Svensson 2002)². Our literature review suggests that the number of contributions addressing the interface between SCM and marketing within the SCM field outnumber those from the marketing field (e.g. Emerson and Grimm 1996; Murphy and Poist 1996; Morash et al. 1996; Ellinger 2000; Christopher and Peck 2003). Even for the most

obvious interface between logistics and marketing channel management, Alvarado and Kotzab (2001) state that “marketing academics have been slow to rise to the occasion of combining logistics research into their studies of channel systems” (p. 184).

Despite these strong arguments for an integrated approach, in many businesses, the supply side still seems to be disconnected from the demand side and supply chain managers have only a faint idea of the drivers behind customer demand. In a benchmarking study of more than 400 companies, Mentzer (2004) found that demand management, as well as the concept of demand itself, are not well understood by the supply chain community. He concludes that many companies have failed to realise that supply chain coordination is not possible without an adequate understanding of demand. In another global survey among 249 executives across 28 countries, Deloitte (2002) find that only a minority (17%) of all companies have effectively linked their supply chain and customer operations. Not surprisingly, these integrated companies have outperformed their competitors on a range of performance criteria (sales growth, market share, customer service and return on assets).

The different levels of marketing and supply chain integration can be depicted with the help of the following matrix:

Insert Figure 1 here

Whereas market losers have neither marketing nor supply chain strengths, supply chain specialists have a distinct capability in managing the supply-related processes. This enables them to reduce time and costs in manufacturing, procurement and distribution and to accelerate the change in asset turnover. Companies with a supply chain advantage usually place a strong emphasis on activities such as strategic sourcing, collaborative planning, forecasting and replenishment (CPFR) and inventory reduction (e.g. just-in-time). Rainbird (2004) reports that an Australian supermarket chain has achieved major cost savings through its supply chain excellence, which could then be reinvested in lower selling prices. Still, as Piercy (2002) argues, a supply chain strength that is not linked to marketing differentiation usually limits the company to competing on price and availability; a strategy followed, for example, by cheap generics providers. Competing through supply chain excellence hence assumes that price is a major determinant of competitive advantage. Moreover, Lee (2001) emphasises the problems of SCM acting independently of marketing management. Differentiated demand for products and services is a key input to SCM. If both

² We acknowledge that SCM is more than the integration of logistics processes across organisations (e.g.

sides are separated, supply will view demand as exogenous and will fail to recognise that demand was influenced by the company's customer facing functions. Also, if consistent and timely customer and demand information does not flow, the company will not be able to respond to differentiated needs of individual customers and customer segments. Among the consequences are suboptimal product and service development, a lack of product and service differentiation and ineffective product and service delivery.

Marketing specialists have a strength in identifying unique customer needs, managing customer relationships and/or in developing strong brands. In particular, the recent trend towards Customer Relationship Management (CRM) has enabled many companies to capture customer contact and purchasing data, to segment their customer base, to personalise the value propositions and to integrate marketing channels (e.g. Day and Van den Bulte 2002; Zablah et al. 2004). Using their extensive customer knowledge also enables them to apply marketing instruments in a more cost-effective way. However, superior marketing strength combined with a lack of supply chain strength leads to a high cost base and slow delivery; problems which can only be compensated by an extremely strong brand (Piercy 2002). A company which is unable to deliver the promises made in the individual customer relationships due to a lack of support capabilities will lose credibility and customer satisfaction will decrease. Typical problems are under delivering and over delivering, or lost share of customer opportunities if the company cannot capitalise on the differentiated customer needs (SAP 2003).

Companies which effectively link their customer and supply chain operations gain competitive advantage by differentiating not only the products and services, but also the underlying delivery processes. They have the capability to satisfy different customer needs with differentiated supply chain capabilities and, as a consequence, can lower prices on offerings that are of great value to the customer. Based on a thorough understanding of the total supply costs on a customer-by-customer basis, supply chain managers know which orders should get preferential treatment and can develop service packages geared towards customer needs and the value they bring to the company (Deloitte 2002). By closely linking the supply chain with different customer segments, these companies can more proactively address emerging and changing customer needs, reduce the time-to-market, and improve the product and service lifecycle management.

Cooper et al. 1997), yet logistics processes are an important part of SCM.

In summary, the argument for combining marketing and SCM strengths is compelling. The fact that still only a minority of companies appear to have effectively linked their demand and supply activities could be influenced by the complexity of the tasks involved. A smooth information flow from the front-end customer interaction back into production is necessary, but on its own is not sufficient. Instead, the influence of marketing activities on supply, and vice versa, have to be understood and coordinated (Lee 2001). For example, pricing, promotion, as well as product mix efforts influence delivery times and supply chain costs. Conversely, supply chain costs dramatically impact on product profitability, and therefore the volume-driven supply chain costs have to be considered in the customer value propositions. Moreover, a comprehensive integration combines not only the activities within one company but can involve coordination across the entire supply chain. Integration across the supply chain leads to the development of customer-centred supply chains (Kuglin 1998). In a customer-centred supply chain, differing needs of the company's customer base are considered and met through the alignment of all value creating processes within the organisation and even across the activities of suppliers and distributors. Developing such a customer-centred supply chain is the main goal of the DCM approach.

DEMAND CHAIN MANAGEMENT

Despite the fact that DCM is a relatively new concept, it has already been defined in different ways. Most importantly, a wider and a more restricted view of DCM can be distinguished. In a broader sense, Selen and Soliman (2002) have defined DCM as "a set of practices aimed at managing and co-ordinating the whole demand chain, starting from the end customer and working backward to raw material supplier". Similarly, Vollmann and Cordon (1998) stress that DCM starts with the customers, working backward through the entire chain, to the suppliers of the supplier. Hence, everything that is moved, handled or produced should ideally be in response to a known customer requirement. Equally, Baker (2003) stresses that managing a demand chain is fundamentally different from managing a supply chain. It requires turning the supply chain on its head, and taking the consumer as the starting point, rather than its final destination. Treville et al. (2004) criticise these broader views because they imply that the term demand chain could effectively replace supply chain, a change in nomenclature which they see as undesirable. Hence, they propose a more narrow definition of DCM. Based on the distinction between the efficient physical supply and the market mediation roles of supply chains proposed by Fisher (1997), Treville et al. suggest restricting the term to market mediation supply chains. In these responsive demand chains for products with innovative demand, supply chain efficiency is traded off for customer service. Rainbird

(2004) also maintains the distinction between the demand chain and the supply chain. He sees them as two distinct entities and proposes the term value chain as the overarching concept which comprises both the demand and the supply chain (p. 242). However, when he defines demand management as “an understanding of current and future customer expectations, market characteristics, and of the available response alternatives to meet these through deployment of operational processes”, he merges the demand and supply chain aspects.

We share the concern over potential confusion, if the term supply chain were to be replaced by the term demand chain. However, countering the argument of Treville et al. (2004), we hold that even in markets where supply chain efficiency is the basis for competitive advantage, demand should always be linked with supply. In line with Rainbird (2004), we acknowledge the fact that demand and supply processes are overlapping but can still be distinguished. Therefore, we suggest that demand chain management is the concept which aims to integrate demand and supply orientated processes. Demand processes are all processes at the customer or market interface, aimed at responding to customer demand through value creation. Traditionally, these processes are allied to the marketing discipline. Supply processes comprise the tasks necessary for fulfilling demand (Christopher and Payne 2002). Furthermore, we suggest viewing DCM as a macrolevel process which includes all activities that companies undertake in their quest to create *and* deliver needs-based customer value propositions.

The customer value-based theory of the firm (Slater 1997) is proposed as a suitable theoretical foundation for demand chain management. The customer value-based theory of the firm suggests that superior performance is a result of providing superior customer value. Firms need to organise themselves around understanding customer needs and customer value delivery processes. While marketing's contribution can be the knowledge on how customer needs are identified and customer value is created, SCM offers a suitable perspective on the organisation in today's markets. An organisation is composed of four major elements: participants, social structure, goals and technology (Leavitt 1965). The demand chain just as the supply chain can be seen as an organisation which involves a variety of participants who all hope to prosper based on their contribution to the chain and who are brought together in the pursuit of goals. A social structure arises as these participants share information and coordinate their activities. Finally, technology refers to the process through which organisations accomplish tasks. Because the demand chain is brought together for the specific purpose of facilitating customer value creating processes, it is very task oriented (Ketchen and Guinipero 2004).

The Study

The literature review revealed that relatively little attention to the DCM concept was paid from a marketing perspective. Whilst we will draw on the limited literature, we also conducted field research in order to explore the concept of DCM as well as the role of marketing within DCM. The research method consisted of three consecutive phases: firstly, data was collected through a co-development workshop in which we aimed to explore the prominent issues in DCM from a practitioner perspective and build those into a conceptual framework; secondly, a literature review in which we compared and contrasted the emerging themes from the co-development workshop with the views held in the literature and, thirdly, a so-called 'discovery day', in which we discussed and validated the framework with further company representatives. Thus, in contrast to many conceptual frameworks, which have been derived solely from a literature review, our proposed concept of DCM is derived from both, existing knowledge in the literature and field observations. Such an approach to concept or theory development has been successfully applied in both relevant disciplines, ie in marketing (e.g. Kohli and Jaworski 1990; Workman et al. 1998; Homburg et al. 2000) and in SCM (e.g. Zsidisin 2003).

The co-development workshop involved eight companies with representatives from supply and demand functions within each company (marketing, sales, logistics and SCM). Supply and demand integration issues can only be captured if representatives from both sides within the same company are involved. Our initial intention was to conduct paired interviews in selected companies. After the completion of a trial set of interviews, we noticed the limitations related to the methodology. Rather than gaining knowledge on the elements of DCM, the interviewees elaborated on the barriers and problems, often making the other function responsible for integration failure. Therefore, we decided to involve both parties simultaneously, and to facilitate constructive discussions in a co-development workshop. The companies were chosen on the basis of proven expertise and interest in DCM. They represented a range of different industries, from oil and cosmetics to a manufacturer of personal care products and a photoprinting technology provider. The workshop lasted one day and was run by Synectics, a consulting company which specialises in running such workshops. Synectics applied a creative problem solving process which captured the different mindsets of both functional representatives but then sought convergence. The process utilises brainstorming techniques, with an objective of leveraging both present knowledge and future potential. Its structure, with rigorous projective exercises, tools and techniques, enables the participants' thinking to be shaped and developed. As researchers,

we acted as so-called “problem owners”, which enabled us to choose the prominent topics, while leaving the process responsibility to the professionals.

The rich data from the workshop were captured through notes and an extensive number of flip charts. Since the workshop was not tape recorded, rigid coding along the guidelines set by Miles and Huberman (1984) or Yin (1994) could only be applied when analysing the written material. Through the coding, patterns that form content themes were identified and structured into a framework. In order to validate the findings from the workshop, a summary report was sent to all delegates and their agreement with the content was secured. Next, the emerging themes were compared and contrasted with the views held in the literature. Finally, a few months after the co-development workshop, the resulting framework was validated through discussion with further practitioners. In a so-called ‘discovery day’, the framework was presented to 14 delegates from a range of different industries as well as business functions. The group then split into two smaller groups to discuss the framework, to give examples or to suggest improvements. Both focus group discussions were moderated by the researchers who also attended the initial workshop. They were tape recorded and transcribed for analysis. The focus group results provide sufficient support for two of the initial elements of our framework. One element had to be substantially revised³.

Overall, we recognise the limitations of our qualitative data collection approach. First, we employed small, unrepresentative convenience samples and the results were not subjected to statistical analysis and are therefore not representative. However, because the purpose of the study was theory construction, i.e. eliciting the main constructs and propositions of DCM and the role of marketing, we felt it was important to tap a wide range of experiences and perspectives. With theory building as the primary purpose of the field research, we do not intend to generalize the findings to any population but to unpack and explore the concept and the underlying propositions (Easton 1995). We are aware that qualitative interviews carry the risk of misrepresenting the associated findings (Ellram 1996), and, therefore, considerable effort was given to validating the themes emerging from the co-development workshop. With the co-development workshop and the focus group interviews from the discovery day, we ensured a “triangulation” of perspectives. Triangulation is suggested as a suitable way to increase the validity in qualitative research (Miles and Huberman 1994). Moreover, because little is known in DCM and the issues are complex, extensive interaction with the respondents was necessary. In such situations, qualitative methods are suitable and

³ The validating focus group discussions followed the first review of this paper. The suggestion of one anonymous reviewer to merge two of the originally four elements of the framework was adopted because it was also confirmed in the focus group results.

they allowed us to tap the “mental maps” and experiences of practitioners (Zaltman et al. 1982; Calder 1994; Ellram 1996; Bonoma 1985). A final characteristic of our research method is the restriction of the focus to DCM from a company perspective. This does not necessarily exclude suppliers or distribution partners; however, the viewpoint from the coordinating company is taken. Collecting data for a cross-functional study is difficult, but cross-functional *and* interorganisational data collection seems almost impossible. Hence, at this early phase, we opted for cross-functional data collection to explore the emerging concept of DCM.

A CONCEPTUAL FRAMEWORK FOR DEMAND CHAIN MANAGEMENT

Based on the analysis of the data from the co-development workshop, the discovery day and the literature review, three integrative themes were identified and structured into a conceptual framework of DCM: (1) Process - managing the integration between demand and supply processes; (2) Configuration - managing the structure between the integrated processes and customer segments, and (3) Social interactions - managing the working relationships between marketing and SCM. For each of the elements, the findings from the field work and the supporting knowledge from the literature will now be outlined and, subsequently, the propositions for further research in marketing are derived.

Insert Figure 2 here

Process – Managing the Integration between Demand and Supply Processes

An important dimension of demand chain management which emerged from the co-development workshop is the need to integrate demand and supply processes. The discussion evolved more around the drivers and inhibitors of such a process integration rather than the actual integrated process as such. This could have been influenced by the fact that delegates had mixed experiences in their attempts to implement the process integration within their organisations. One important driver stressed by the delegates is a process-driven business culture. Two managers from one company reported that functional heads were only willing to redefine their functional responsibilities when a board member called for commitment to cross-functional processes. In the literature, it is suggested that marketing plays a vital role in process coordination (e.g. Min and Mentzer 2000; Srivastava et al. 1999). However, our findings from the co-development workshop also suggest that many marketing departments do not appear to be fulfilling this role. In most of the workshop

companies, marketers are often preoccupied with revenue stimulation regardless of the implications for SCM. Thus, both areas operate independently. Even the well-known problems related to uncoordinated promotions were mentioned. Demand and supply coordination was only experienced within venture projects. The supply chain representatives in particular appeared resentful because they felt dependent upon marketing's willingness to trigger the process coordination through the dissemination of customer and market information.

A further driver which emerged from the co-development workshop was the supporting role IT played in process integration. For example, one company used process reengineering and technology to synchronise its marketing and procurement. Both delegates from the company confirmed the benefits of a strong IT-based customer and supply chain integration for demand forecasting, order scheduling and targeted marketing. The other delegates bemoaned the multiplicity of rigid and inflexible systems in their companies, which prevents a demand-driven information flow across the functions. However, rationalising initiatives were under way and led one delegate to conclude that the number of systems rationalised through IT infrastructure integration in his industry resembled those of the supplier rationalisation programmes about ten years ago.

The validating focus group discussions confirm both, the importance of integrated demand and supply processes as well as the supporting role of IT. The differences in the current state of practice between the participating companies were substantial. Whereas one delegate from an international food production company presented the thoroughly integrated and IT supported process with aligned demand plan, inventory plan, production plan by factory and a purchasing plan, another delegate simply commented that the morning had been eye opening because he looked at all the gaps in their own company's process.

Process integration as the first dimension of DCM is also sufficiently supported by the literature and the argument for demand and supply process integration was addressed within marketing as well as SCM. In the marketing field, the three core processes of CRM, SCM and new product development identified by Srivastava et al. (1999) reflect the demand and the supply side. While the authors emphasise that the processes need to be integrated, the integration is not discussed. Similarly, Payne and Christopher (2002) argue that CRM and SCM processes have to be integrated in order to "provide high levels of product availability and variety, yet which are low cost and reliable..." (p. 501). While they provide guidelines for both processes independently, the integration is depicted at a highly abstract level. Those contributions conceptualising SCM from a process perspective have also stressed the need

to integrate the key business processes within and between organisations (e.g. Cooper et al. 1997; Lambert and Cooper 2000; Mentzer et al. 2001). A wide range of business processes are suggested by different authors, including, among others, demand and supply-related processes. Still, the integrative frameworks proposed are developed to stimulate new research rather than guiding the specific issue of demand and supply integration. In this sense, Mentzer et al. (2001) suggest the investigation of how the processes can be effectively coordinated within a company and across the supply chain as an area for future research (p. 20).

Whilst the argument for a process integration in the fieldwork as well as the literature is strong, not much advice is given on how the processes can be integrated. Only one recent study by Rainbird (2004) is explicitly suggests a process fusion model for demand and supply process integration. He distinguishes between eight supply processes, ranging from order receipt/entry to delivery options, as well as seven demand processes, e.g. macro-market definition and CRM. Rainbird argues that the “fusion” or linkage between these processes can be achieved through either management, specific organisational capabilities or technology. Building on this work, we suggest a three layered process integration model, comprising the customer buying life cycle and the demand and supply processes (see figure 3).

Insert Figure 3 here

The three layers of the model stress firstly, the integration of the customer into the value creation process as proposed by Woodruff (1997). Secondly, in line with the conceptualisations of relationship marketing and CRM, the buying cycle acknowledges the dynamics in customer relationships (Zablah et al. 2004). Thirdly, by linking the activities in the demand process with those in the supply process, guidance to implementing the process integration can be derived. Any process can usually be divided into subprocesses and activities and therefore, the level of abstraction is arbitrary. In our model, the activity level was selected to match the phases in the customer buying cycle, and, furthermore, to illustrate those activities whose integration is fundamental for DCM.

Awareness expresses the customer’s recognition of a need which can trigger a value creation process for the company. In this phase, activities in the demand and supply processes are geared towards the preparedness and “housekeeping” within both areas. Demand tasks comprise market analysis, macro market segmentation, as well as the definition of target markets, or, in the case of repeat purchases from existing customers,

target market approval actions. On the supply side, the existing supply network has to be monitored against the market information provided by the demand process. This will compromise common activities such as a supplier evaluation based on the supply requirements derived from the market positioning of the company.

Once the customer is considering buying from the company within the evaluation phase, the accuracy of forecasting and demand planning is increased. In addition to the quantitative forecast, in the demand process customers are microsegmented based on needs, preferences and likely profitability. The supply process uses the information on customer segment-based delivery needs in order to plan the specific supply chain responses. This will comprise a range of common supply chain activities such as materials requirement planning, capacity management or production planning and scheduling. On the demand side, value profiles are developed by quantifying for each segment the "ideal" customer value model, including the benefits, costs and value imperative drivers (Rainbird 2004). On the supply side, important inputs into the potential customer value models are, for example, pipeline costs or delivery options. Therefore, integration into the demand process is facilitated if the supply side proposes service delivery package options as input into the value profiling.

In the decision and purchasing phases demand and supply integration is put to the proof. Simply stated, all the marketing effort which has been put behind the product or service will fail if it is not available when the customer requires it. The relevant supply tasks are captured in the physical distribution service concept developed by Mentzer et al. (1989) with its three dimensions of availability, timeliness and delivery quality. The authors argue that recognition should be given to the fact that each individual customer's needs along these three dimensions may vary. Moreover, from a demand chain perspective, the objective is not primarily to make the sale, but rather to maintain a portfolio of profitable customers. Therefore, the goal is neither to generally serve customers better, nor to serve them cheaper, but to sell and deliver on the basis of a thorough understanding of customer needs, profit potential and supply capabilities required. Close integration should ensure that the company profitably meets different customer needs with differentiated supply chain capabilities.

When the customer consumes or uses the product or service, the marketing activities range from supporting activities such as installation, financing, or warranty, to simply providing information and advice and can be summarised as "serving the value" Rainbird (2004). Since the supply activities have to support customer service, demand and supply tasks overlap. For example, offerings such as product return, exchange or disposal tasks are

typically carried out by supply functions. Moreover, and consistent with the CRM philosophy, an important objective of the post-sale phase is to “build” the relationship through cross- and upselling offerings. Renewed awareness and consideration of the cross- and upselling offerings on behalf of the customer will close the buying cycle. In order to build the customer relationship profitably, feedback on over- or underdelivery, as well as information on customer profitability enables supply functions to develop revised service packages. For instance, customers who contribute less to profitability can be migrated to more appropriate service packages, for example, longer lead times or reduced after sales support.

Consistent with the findings from the field work, the literature also proposes information management and technology as a key enabler of the process integration (Koudal and Wellener 2003). The design of information systems should be derived from the integrated demand and supply process requirements, and, at the same time, support that integration. In practice, this is an exceedingly challenging task. The literature, as well as the findings from our workshop, supports the notion that information systems are often a result of the evolution and serving of discrete needs of functional lines rather than the key business processes. Therefore, IT solutions can reinforce “walls” between functions rather than helping to overcome them (Korhonen et al. 1998).

From a DCM perspective, information systems have to support tasks such as identifying for each order, whether an item is purchased via catalogue, call centre, direct sales force or the website. In addition, customer information such as sales history and profitability needs to be available along with product availability for their specific requirements. This implies the coordination of procurement, manufacturing and logistics data with multi channel customer interaction data. The underlying CRM systems on the demand side and SCM tools on the supply side are available, yet rarely integrated. On the demand side, CRM technology is what propelled relationship marketing to the forefront, enabling firms to collect and store unprecedented amounts of customer data and then feed the knowledge back into customised offerings, product improvements as well as sales and marketing campaigns (Zablah et. al. 2004). Although the impact of technology on CRM has been questioned, there is still no doubt of its enabling role for the demand process (Bose 2002). Similarly, the role of information systems in SCM integration is widely acknowledged (see Gunasekaran and Ngai 2004 for a review). SCM applications typically have a number of functions, among them a forecasting functionality, analytics tools to calculate operational costs as well as collaboration tools to connect parties in the supply chain. These components aim to increase the information flow and thereby improve the visibility throughout the pipeline (Christopher

1998). Without the ability to “see” actual demand and subsequently to manage replenishment, ideally in virtual time, the supply chain will depend on inventory.

Managing the digital integration within DCM goes beyond the disconnected functionalities of CRM and SCM tools. The demand and supply process integration suggests further IT requirements: information technology must support the company’s capability to serve differentiated customer segment based requirements by providing the ability to search for and develop alternative supply scenarios.

To summarise, the tentative empirical findings as well as the literature review suggest that process integration is an important dimension of DCM. Furthermore, the role of marketing is to facilitate the process integration by disseminating market information, to consider the effect of marketing activities from an integrated process perspective and to foster a demand based integration of information needs. Thus, we can formally state the following propositions:

Proposition 1:

The role of marketing within DCM is to facilitate process integration by disseminating customer and market information.

Proposition 2:

The role of marketing within DCM is to consider the effect of marketing activities from an integrated process perspective.

Proposition 3:

The role of marketing within DCM is to foster a demand rather than a supply based integration of information needs.

Configuration – Managing the Structure between the Integrated Processes and Customer Segments

A second dimension of a DCM framework which we elicited from the field work is the need to manage the demand chain configuration. Managing the demand chain configuration

comprises the strategic decision on the number of customer segments the company can serve with differentiated supply chains as well as the structural aspect of a customer segment focused demand chain organisation. The configuration dimension is closely related to the process dimension, however, the delegates clearly made the distinction between configuration and process and the respective tasks. This distinction is consistent with the open social system perspective, which suggests that processes in a system are organised *according to* the system structure (e.g. Katz and Kahn 1980). In SCM, the configuration dimension is often referred to as “supply chain design” (e.g. De Kok and Graves 2003).

In the co-development workshop, delegates confirmed the need for a customer segment focused demand chain organisation but stressed the difficulties involved in implementing it. Only one company had experience in aligning customer needs with differentiated supply chain responses. Within the company manufacturing photoprinting technology, the development of a new product was recognised to require a supply chain approach different from the company's current approach. As a consequence, a cross-functional venture team was set up which comprised marketing as well as SCM. Both representatives confirmed that the co-ordination enabled the company to identify the target markets for the new product and at the same time develop the supply chain to compete in those markets. Interfaces between both functions were mapped through processes, and a capacity planning model was used as a facilitator. The venture team was a forum within which the drivers of marketing and supply strategies communicated and, as a delegate remarked: “the spirit of a small business could be captured”.

In the focus group discussions, several further interesting examples of the challenges relating to the alignment of customer segments and supply chains were highlighted. For example, a paper production company served five substantially different customer segments with varying demands on design, quality, delivery and volume. Interestingly, the company sought ways to decrease the complexity while maintaining the variety. Whereas in the past, the company had tried to push the standard range of products and delivery terms by “controlling the customer”, it now sought to develop standardised supply chains for each of the customer segments. Another delegate stressed that they had to set up specialised supply chains for their global strategic customers. Such a “segment of one” approach was necessary because their product supply had to feed right into the customer's global point of sales and supported the customer's marketing activities. All delegates reported that it was not only a challenge to deal with different supply chains but that the complexity was further increased by the need to respond to changing customer needs. A delegate from an engineering company, which traditionally supplied customers from a range of industries, had

recently started to serve two big truck manufacturers. He stressed that a completely new supply chain had to be set up for these customers and this involved a substantial organisational change process. A further issue which was stressed by several delegates was the hindering role played by manufacturing in a customer-aligned structure. Manufacturing facilities often seem to be specialised, focusing on product capabilities and are not aligned to customer segment needs. Therefore, product efficiency oriented manufacturing plans can impede the efficient supply to different customer segments. A final issue discussed was the degree of complexity which can be handled. One delegate mentioned that they had outsourced the entire production for their so-called “standard segment” because they were unable to service highly customised and standard customer segments at the same time.

The need for a supply chain configuration based on customer segments is also supported by the literature. Initially, the focus was on tailoring logistics to match individual customer or customer segment needs (e.g. Fuller et al. 1993; Murphy and Daley 1994). The argument that logistics needs to be differentiated to fit specific customer needs has recently been supported empirically (Mentzer et al. 2004). Within a SCM context, the case for product or market specific supply chains was first argued by Fisher (1997). Based on a distinction between functional or innovative products on the one hand and physically efficient or responsive supply chains on the other hand, a matrix with viable product-supply chain combinations was proposed. More recently, this initial segmentation was extended by Christopher and Towill (2002) and Childerhouse et al. (2002), who propose extended taxonomies comprising criteria such as: product (standard or special), demand (stable or volatile), lead times (short or long), volume (high volume or low volume) and time windows for delivery (short or long) as a basis for market specific supply chain development.

While most of the contributions to date are of a conceptual nature, Godsell and Harrison (2002) have conducted a case-based empirical study exploring the alignment of functional segmentations within a manufacturing company of cleaning products. Interestingly, they find that while the manufacturer applied three approaches to segmentation: a customer, a production and a logistics approach, none of them were linked. Table 1 illustrates the different segmentation approaches applied:

Insert Table 1 here

Like many companies in today's world of key account management and CRM, the manufacturer segments the customers on the basis of the value to the company of the customer accounts. In addition, a secondary classification by channel type is applied to the long tail of field sales. The authors argue that such a segmentation is not suitable to develop a customer behaviour-driven supply chain configuration. Furthermore, the production and logistics segmentations are independent, which is reflected by the internal organisation structure that separates manufacturing and logistics activities. Whereas manufacturing makes some distinction between promotional and standard products, at subsequent stages within the supply chain, the products are treated exactly the same. The logistics segmentation between quick and standard response is derived from the logistics strategy which offers customers these different services. However, at the time of the study, only three accounts used the quick response service. Finally, the segmentation approaches applied within the external supply chain, for example at the sourcing level, are entirely different again. These sobering results lead the authors to conclude that the challenges of reflecting customer segmentation in internal supply chains are substantial and that the problems of alignment across the external supply chain could be too great.

The complexity emerging from changing customer value perceptions has also been identified in the literature. For example, Flint et al. (1997) suggest a model to support research into customer value change and distinguish between three triggers: supplier located changes, customer located changes and environment located changes. Whilst such a structure can facilitate a proactive perspective, the authors admit that some events will be predictable but some will not. In the empirical study by Heikkilä (2002) mentioned above, a further finding addressed the linkage between the demand chain structure and its responsiveness to customer value change. Here, the importance of efficiency as a DCM objective appeared to increase when the structure of the demand chain is relatively stable. Interestingly, his findings suggest that a certain level of maturity in the structure is a precondition, not only for optimising it, but also for developing the capability to respond to new end-customer value propositions. Moreover, in order to disseminate a market sensing capability, processes need to be institutionalised, which is more likely to be the case in a more mature structure.

We conclude that a first area for further research relating to the configuration dimension of DCM is to investigate how the customer segments within companies can be linked with segment supporting, responsive supply chains. Compared with the traditional approach to market segmentation, the role of marketing requires the integration of an "external" customer-facing and an "internal" supply chain perspective on segmentation. While the

increase in available information enables companies to respond to individual customer needs or to microsegment them into smaller and smaller groups, from a demand chain perspective, this granularity can cause problems. Tentative knowledge suggests that going too far in individualising offerings is likely to cause a lack of integration between a production-driven supply chain and a customer-driven value definition. Especially in companies where rich sources of information on buying behaviour has led to “database” segmentation rather than market segmentation (Baker 2003), balancing customer satisfaction with supply chain efficiency is a major challenge. Secondly, more research is needed which looks at how companies can translate their market sensing skills and the ability to develop new customer value propositions into structural adaptation requirements for the supply chain.

Based on our tentative empirical findings and the literature review we suggest the following propositions relating to the role of marketing in demand chains:

Proposition 4:

The role of marketing within DCM is to link external, customer-value segmentation with internal, segmentation of production, logistics and sourcing.

Proposition 5:

The role of marketing within DCM is to obtain knowledge about changes in customer needs as a basis for structural adaptation requirements of the supply chain.

Social Interactions - Managing the Working Relationships between Marketing and SCM

Process and configuration tasks in DCM are inextricably linked to the underlying social interactions. A lack of integration between marketing and SCM appeared to be widespread in many companies from the field work, and was seen as a major barrier to implementing DCM.

In the co-development workshop, the soft issues were discussed extensively. Delegates used the metaphor of aligning “spin” with “fact”, emphasising that marketing stands for creativity, experimentation, uncertainty and energy, whereas the culture in SCM is characterised by operational details, processes, workflows and data. Moreover, the mutual distrust, the thinking as “them and us”, as well as the prejudices of “number crunchers” and

“box movers” versus “sales hunters who can never say ‘no’ to any customer” were discussed as barriers to cooperation. One delegate reported that the mistrust was overcome in a job rotation exercise when the former head of marketing moved into an operations role.

The practitioners from marketing and SCM agreed that communication was essential and discussed what information would need to be exchanged. Among the information sought most urgently from marketing by SCM was new customer and product opportunities, defined customer segments, planned promotions as well as feedback on over- or underdelivery. Marketing, in turn, emphasised the need for timely information on lead time, capacity and pipeline costs (inventory carrying costs, warehousing, transportation costs) (see figure 4). Still, delegates stressed that the information flow was a necessary but not a sufficient condition for the cross-functional working relationship. A shared understanding of the information and, moreover, the ability to act on the same information were seen as being pivotal. For example, one delegate mentioned the limitations of enterprise resource planning programmes. Although they are designed to enable all departments to see the same information, he said it inhibits rather than facilitates the integration because the readily available data leads to uncoordinated actions.

A further barrier to cooperation which emerged from the co-development workshop was conflicting key performance indicators (KPIs) between marketing and SCM. Among the main KPIs reported by marketers were market share, sales revenue, gross margin and furthermore problems were created by a widespread trend to increasing product diversity and customisation. For supply chain managers, performance is measured against inventory turnover and value, cost control, decreased number of stock keeping units (SKU) and customer service. Workshop delegates agreed that the drive towards functional excellence in their companies has led to an increase of functional KPIs. Especially when the reward system is closely linked to these conflicting KPIs, the coordination between demand and supply is at risk. A reduction of the number of relevant KPIs, the linkage of these KPIs to the overall business performance, as well as a certain flexibility enabling the company to adapt the KPIs to respond to market forces, were among the solutions developed to overcome this barrier to cross-functional cooperation.

Insert Figure 4 here

The need to manage the interfunctional relationships has already been emphasised within SCM (e.g. Mentzer et al. 2001); however, the growing need for customer-value based

segmentation is likely to further increase its importance within demand chains. Thus, cross-functional working relationships are critically related to the company's ability to prioritise customers according to the internal supply capabilities of the company. Furthermore, studies have shown the positive effect of cross-functional cooperation on perceptions of customer perceived value and customer service (Fisher et al. 1997). Managing the relationship between marketing and SCM involves creating incentives for all parties to help manage the flow of customer and demand information.

Within the literature, only a small number of empirical studies of the relationship between marketing and SCM can be traced. Ellinger (2000) finds empirical support for the hypothesis that marketing and logistics cooperation has a positive impact on distribution service performance, i.e. the ability to customise service offerings to customer needs. His findings suggest a positive association between effective marketing and logistics interdepartmental relationships and distribution service performance. Effective interdepartmental relationships are found to be influenced by the evaluation and reward system. However, the results also indicate that the relationships in the more than 300 companies surveyed were not particularly effective. As a consequence, Ellinger suggests that further research should investigate the antecedents of marketing and logistics cooperation. Next, an empirical study by Murphy and Poist (1996) analyses marketing and logistics managers' views regarding interface-cooperation. Cooperation refers to a relationship in which both the marketing and logistics functions experience a high level of satisfaction. The findings show that 53% of the logistics respondents and 49% of the marketing respondents rated the present level of cooperation between their functions to be only "slight" or "moderate". Communication barriers were perceived as by far the major obstacle to better cross-functional cooperation. Among the most frequently used techniques to facilitate cooperation were top management support, joint projects, information sharing and attempts to instill a philosophy of cooperation. Finally, Kahn and Mentzer (1998) investigated interdepartmental integration between marketing, manufacturing and R&D managers. Their findings suggest that integration has two components: interaction and collaboration. Interaction emphasises the use of information exchange activities and has no direct effect on a range of performance outcomes (e.g. department performance, satisfaction in working with other departments). Collaboration however, which implies a mutual understanding, a common vision and collective goals, has a direct positive impact on performance.

We conclude that an area for further research is to analyse the cross-functional relationship between marketing and SCM. While this research can build on the findings from existing studies on interfunctional relationships, we agree with Kahn and Mentzer (1998), as well as

Ellinger (2000), who suggest that more research is needed which identifies the *antecedents* of marketing and SCM cooperation. Our literature review and tentative empirical findings suggest that a mutually satisfying relationship between both functions has two levels: a first, basic level of information exchange and communication, which is a necessary yet not a sufficient condition for the second level of collaboration. Collaboration between marketing and SCM implies a mutual understanding and collective goals. On the first level, information exchange, more research is needed to identify *which* information needs to be shared. Our findings from the workshop (which are summarised in figure 4) emphasise that it is not the raw sales data but rather the knowledge which should be communicated. For the second level of collaboration, the KPI appears to be a major inhibitor or facilitator for collective goals. Our findings propose that manufacturing and supply chain managers who are rewarded on the basis of costs view customisation of products, product variety and delivery options as threats to their performance. Instead, collaborative KPIs focus on a broader set of collective company objectives rather than evaluating functions on discrete or conflicting performance measures. Finally, achieving a mutual understanding of the information is possibly the most challenging aspect of marketing and supply collaboration. One delegate reported an occasion in his company where exactly the same information was provided to marketing and SCM, but as they interpreted it in different ways, the operational implications drawn were totally different. In the literature, the dissimilar workstyles and functional cultures are often cited as barriers to collaboration. Our own findings suggest that these rational reasons are frequently part of a vicious circle with mutual emotional resentment.

We offer the following propositions relating to the role of marketing in managing the working relationship with SCM:

Proposition 6:

The role of marketing within DCM is to proactively exchange information with SCM. Specifically it should *provide* timely information on: defined customer segments; new customer/product opportunities; planned promotions; feedback on over/under service delivery and, furthermore, *seek* information on: lead times, capacity and pipeline costs.

Proposition 7:

The role of marketing within DCM is to seek collaboration with SCM by working towards a mutual understanding of the information exchanged and collective goals.

SUMMARY

In today's markets, understanding the customer's situation and responding effectively to differing needs through the coordination of marketing and SCM can be a source of superior customer value creation. This paper has introduced DCM as a model which combines the strengths of marketing and SCM by shifting the focus to the customer and designing customer-centred supply chains. Marketing is traditionally externally focused and creates customer value, while SCM is inwardly focused and concentrates on the efficient use of resources in implementing marketing decisions. Marketing and SCM integration is hence between those that define demand with those who fulfill it. Until today, the concept of DCM has been addressed from SCM and operations perspectives; however, despite its clear relevance, no marketing contribution can be cited. By outlining the roles of marketing in demand chains, the paper closes this gap and proposes several important new areas for future research in marketing.

Widely cited examples of successful companies following the principles of DCM, such as Dell in the computer industry or Zara in the fashion industry (Walker et al. 2000 and Margretta 1998), lead us to believe that more companies will adopt DCM in their quest to gain competitive advantage. These companies increase profitability through product availability, delivery accuracy, responsiveness and flexibility by tightly linking customer and supply initiatives. Within DCM, marketing and SCM work together to develop suitable relationships for different customers, develop joint customer prioritisation strategies, process accurate customer information and match value requirements with operational capabilities. Our conceptual framework suggests new roles for marketing within DCM which imply new areas for research (see table 2).

Insert Table 2 here

The role of marketing within DCM also suggests a re-evaluation of the role of marketing within companies. Marketing has traditionally served as the boundary discipline between the firm and the customer and markets (Day 1992). However, critical voices stress that this is often done to the detriment of the company's internal efforts (Barret 2004). From a DCM perspective, marketing needs to involve the knowledge of other departments into their decision making and redefine (and possibly limit) its responsibilities within the integrated demand and supply process. Marketers need to strategise with SCM to create new ways to go to the market, understand and translate marketing initiatives into supply chain drivers and

improve their awareness of the company's operational constraints. Collaboration between SCM and marketing needs to ensure that SCM is involved in the marketing planning at an earlier stage, is involved in customer priority decisions and, most importantly, needs to be able to reject marketing decisions if they are not financially viable to the business. On the other hand, marketing must become more cost driven and less inclined to agree to sales that are not optimal for the business. Our findings from the workshop as well as the focus group discussions suggest that marketing will be resistant to changes and might blame SCM's lack of a market orientation for integration failure. We agree that SCM has to focus more on the creation of output and we also see the enabling role of a market orientation for SCM implementation (Min and Mentzer 2000). Still, and distinct from former contributions on the role of marketing within SCM, we argue that the success of DCM is not only based on a market driven philosophy but on strong marketing and SCM competencies. Therefore, companies with strong customer and SC initiatives, as well as a process culture, are best suited to link both in an integrated DCM approach.

The fact that DCM seeks to explain competitive advantage illustrates the close relationship between the concept and strategic management. Within marketing (e.g. Day 1992, Varadarajan 1992) as well as the SCM literature (e.g. Ketchen and Giunipero 2004), the interface with strategic management is discussed. Because strategic management aims at identifying, explaining, and predicting the determinants of organisational performance (e.g. Schendel and Hofer 1979) and needs to match customer requirements with the value proposition of the firm (Cravens et al. 1997), both disciplines suggest that they have much to offer. We argue that the intersections of strategic management and DCM should not have an underlying internal competition for primacy. Instead, they can be mutually beneficial and the contribution of DCM can be substantial because it combines the knowledge of two disciplines in its endeavour to understand the processes by which superior customer value is created and delivered.

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Figure 1 : Levels of marketing and supply chain integration (adapted from Piercy 2002, Deloitte 2002, and Lee 2001)

		Supply chain advantage	
		Low	High
Marketing advantage	Low	<p>Market Losers</p>	<p>Supply Chain Specialists</p> <p><i>Viable Strategy:</i> Cheap Generics</p> <p><i>Potential Problems:</i></p> <ul style="list-style-type: none"> - lack of product and service differentiation - ineffective product and service delivery - suboptimal product development
	High	<p>Marketing Specialists</p> <p><i>Viable Strategy:</i> Expensive Brands</p> <p><i>Potential Problems:</i></p> <ul style="list-style-type: none"> - underdelivery - overdelivery - lost share of customer opportunities - excessive supply costs of products 	<p>Market Winners</p> <p><i>Strategy:</i> Differentiation on product and process</p> <p><i>Advantages:</i></p> <ul style="list-style-type: none"> - satisfying different customer needs with differentiated supply chain capabilities

Figure 2: A conceptual framework for demand chain management

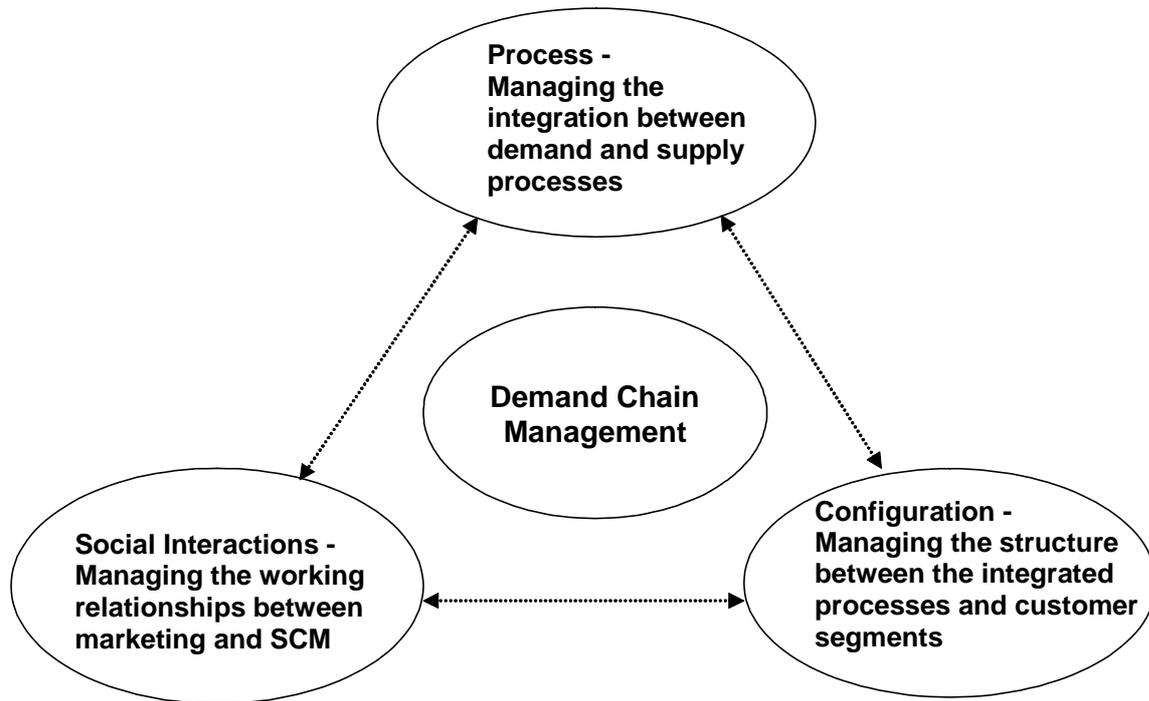
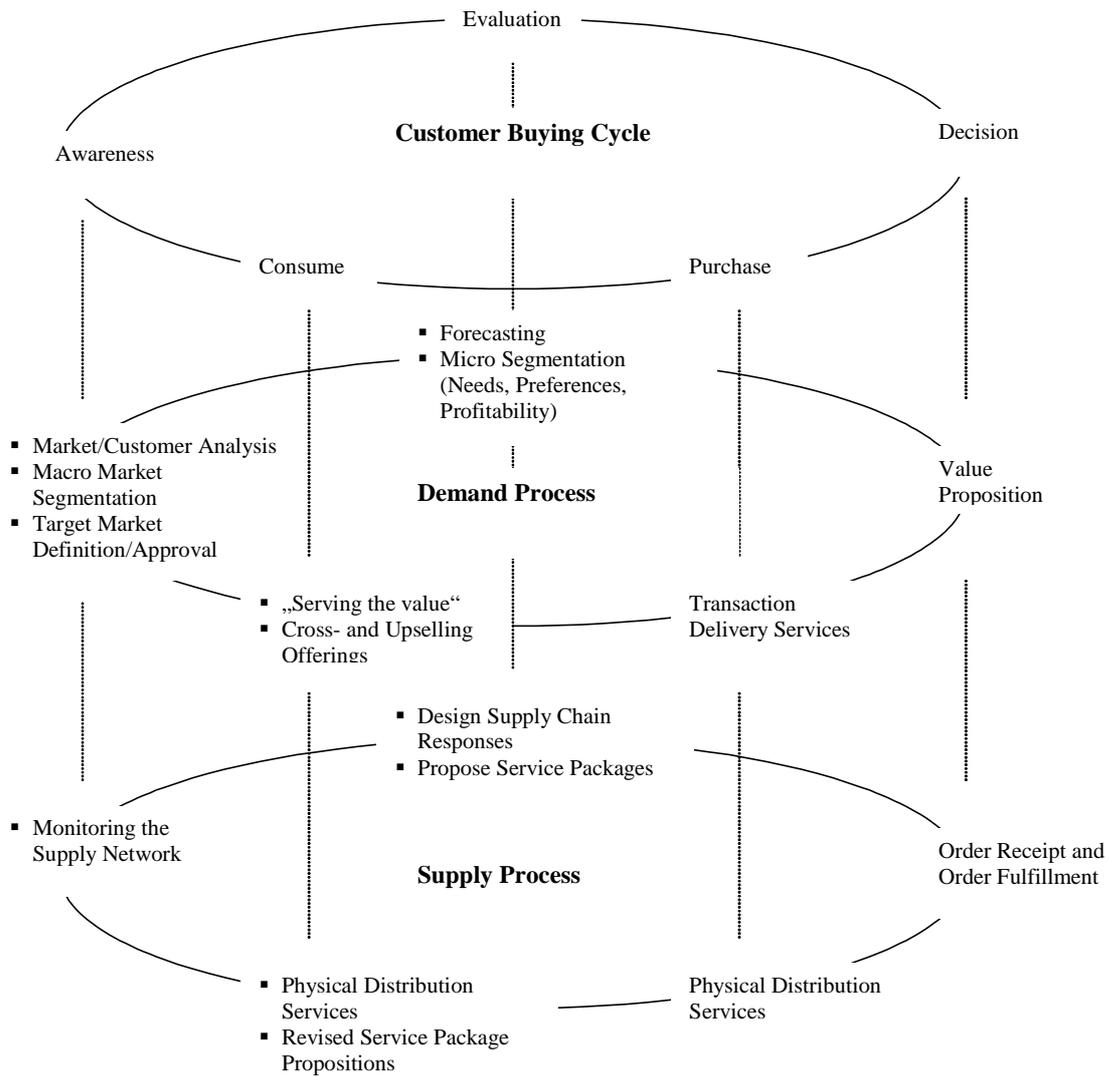


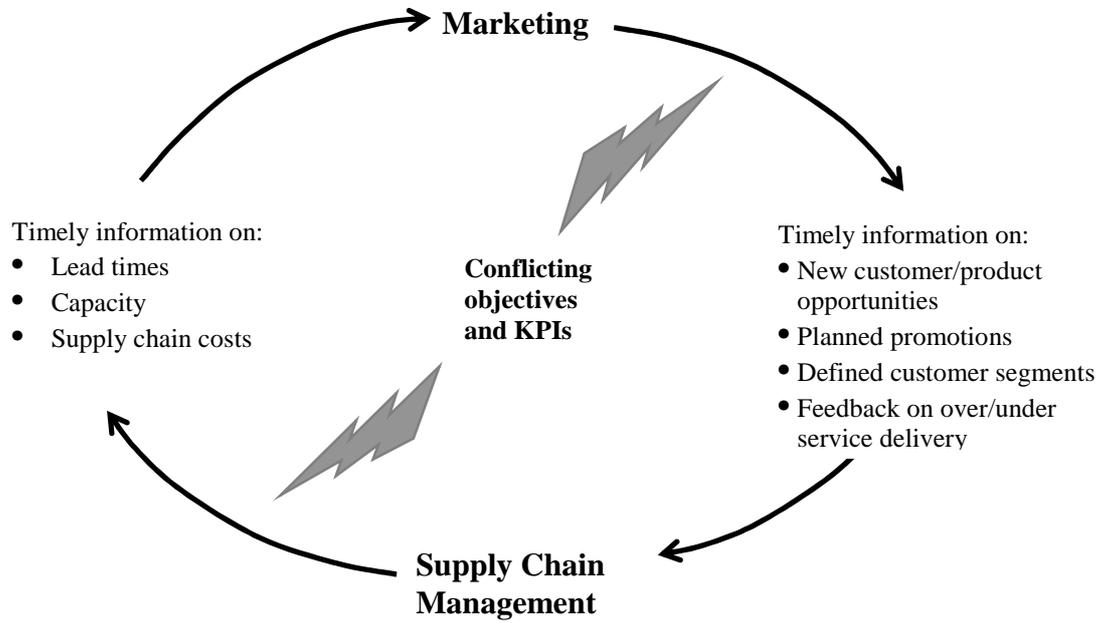
Figure 3: Demand and supply process integration



Customer Segmentation	National Accounts 70% of sales 10 accounts	Field Services 30% of sales 200 accounts		
		Neighbourhood Retail	Discount Sector	Pharmacy
Production Segmentation	Promotional Products (Make to order)		Standard Product (Make to Stock)	
Logistics Segmentation	Quick Response (Same Day)		Standard Response (3 – 7 days)	

Table 1: Lack of alignment between functional segmentation approaches (Godsell and Harrison 2002)

Figure 4: The Working Relationship between Marketing and SCM



DCM Element	Role of Marketing
<p>Process – Managing the integration between the demand and supply processes</p>	<ul style="list-style-type: none"> • Facilitating the process integration by disseminating customer and market information; • Considering the effect of marketing activities from an integrated process perspective. • Fostering a demand rather than a supply-based integration of information needs.
<p>Configuration – Managing the structure between the integrated processes and customer segments</p>	<ul style="list-style-type: none"> • Linking external, customer-facing segmentation with internal segmentation of production, logistics and sourcing; • Obtaining knowledge about changes in customer needs as a basis for structural adaptation requirements of the supply chain.
<p>Social Interactions- Managing the working relationship between marketing and SCM</p>	<ul style="list-style-type: none"> • Exchanging information with SCM, i.e. providing timely information on: defined customer segments; new customer/product opportunities; planned promotions; feedback on over/under service delivery and, seeking information on: lead times, capacity and pipeline costs; • Seeking collaboration with SCM by working towards a mutual understanding of the information exchanged and collective goals.

Table 2: The Roles of Marketing within DCM