A Conceptual Analysis of Supply, Marketing and Demand Chain Management

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Abstract – Customer-Centred Supply Chain Management (CCSCM) combines the concept of marketing with Supply Chain Management (SCM) and Demand Chain Management (DCM). SCM is a term used to describe how companies and locations coordinate the movement of products and services, while DCM refers to the control of interactions between consumers and suppliers to provide the most value to the consumer at the lowest cost to the DCM as a whole. This research examines the advantages of both marketing and SCM. Second, it illustrates how DCM may leverage marketing and SCM skills to address the problems of presenting customer value in the modern marketplace; and third, it presents a conceptual framework for DCM with recommendations for more research into the objectives of marketing in the field of DCM. The findings of our discovery-oriented validating focus groups and co-development workshop are compared to those of our literature review. The few current works on DCM will be addressed and the concept will be presented in this research paper. Recent discussions in Supply Chain Management (SCM) have focused on whether the supply chain is "lean" or "agile".

Keywords – Supply Chain Management (SCM), Demand Chain Management (DCM), Customer Relationship Management (CRM).

I. INTRODUCTION

According to a conceptual and empirical research on market orientation, inter-functional management is crucial for achieving the basic purpose of marketing, which is the production of increased customer value. Consequently, majority of research on the interplays between R&D, engineering, finance, and marketing in the establishment of a firm approach may be followed. The main hypothesis of this paper is that the integration of non-traditional marketing domains leads in the development of value for the customer. Competition for primacy across disciplines with the same customer focus and market commitment, which is to say, it is also an issue of concern about how each of the marketing tasks contributes value to the firm has always been there. Some experts argue that marketing has been slow to manage across boundary lines because it has become more complacent in its notion that it "owns the customer," which has resulted in a lack of coherence in corporate organization, operations and processes.

As a result, new models intended to create value that have their origins primarily in manufacturing have surpassed marketing in terms of speed. One of these approaches is Supply Chain Management (SCM), which has promptly become a vital issue in major companies. SCM describes how companies and locations coordinate the movement of products and services. Movement and warehousing of raw materials as well as completed items, and end-to-end order fulfillment from origin to consumption are all included in this category. There are many interconnected systems, channels and nodes that work together in a SCM to provide the goods and services that end consumers need. Global supply and demand synchronization and global performance measurement are the goals of SCM, which is described as "the design, organization and implementation of supply chain operations in order to create net value, establish competitive infrastructure, and leverage global logistics." There are a number of disciplines involved in SCM, including industrial engineering and systems engineering. SCM is an integrated, interdisciplinary, multimethod approach. To manage a supply chain effectively, channels of distribution play a crucial role.

SCM researchers (e.g., those in [1]) are increasingly focusing on issues like sustainability and risk management in the supply chain in their study. Resilience in the supply chain is an important subject in supply chain management. Researchers have allegedly neglected to look at the "human component" of SCM. Problems with ethics, internal integration, openness and visibility, and the management of human resources and talent are all included. Supply chain management encompasses

all aspects of product flow, from strategy to implementation. All of these activities come under the umbrella of SCM. For instance, SCM focuses more on the business side of the equation, while supply chain engineering is more concerned with statistical models. Even though SCM was first used in the early 1980s, it has gained traction in the corporate world only in the last decade. Downstream and upstream engagement with the consumers and suppliers are effectively managed in SCM to increase ultimate market value while reducing overall supply chain costs. Some have concluded that greater coordination might redefine competitive advantage in new ways as a result of the generally established synergies between marketing and SCM. It is considered that Demand Chain Management (DCM), a relatively new technique, may capture the stated integration between marketing and SCM by focusing on particular consumer wants and then developing the supply chain to meet those needs. The goal of DCM is to optimize the interaction between suppliers and customers in order to provide clients with the highest possible value at the lowest possible cost. With the client in mind, DCM is comparable to SCM.

Demand-Chain Management (DCM) software fills the gap left by traditional methods of managing customer relationships and supply chains. The company's supply chain procedures are managed to meet the needs of its clients in the most efficient manner possible. As a result of its ability to adopt and combine marketing and Supply Chain Management (SCM) techniques that improve the firm's overall performance, DCM produces strategic assets for the company. DCM is seen as an augmentation of supply chain management by researchers at Wageningen University in the Netherlands because of the inclusion of a market-oriented approach in its idea. Today's consumers benefit greatly with the availability of real-time accessibility to accounts, applying changes to the product setups, as well as conveying certain service needs through a web-based application. Even though SCM and operations have contributed most to DCM, a few citations from marketing scholars have also been found. A model for stimulating new marketing research is proposed in this article, and it is hoped that this would help leverage marketing's contributions to value generation for both customers and the organization.

However, the bulk of DCM contributions have concentrated on best practices without providing any conceptual foundation. In order to get more practitioner input for establishing a DCM framework and identifying marketing duties inside it, focus group discussions and co-development workshops were undertaken. This paper provides a review of the benefits of both marketing and SCM. Secondly, it demonstrates how DCM may use marketing and SCM capabilities in order to face the difficulties of creating customer value in the present market; and thirdly it presents a conceptual framework for DCM with suggestion for more research into the objectives of marketing in the field of DCM. The result of our discovery-oriented validating focus groups as well as co-development workshop are compared and contrasted with those of our literature analysis. The remaining part of the article is divided as follows: Section II provides a discussion of the benefits of marketing and SCM in integration. Section III focusses on the demand chain management aspect, which involves a discussion of the relevant sources of literature. Section IV presents a discussion of the conceptual model for demand chain management. Section V draws final remarks to the research concerning the advantages of SCM and marketing.

II. MARKETING AND SUPPLY CHAIN MANAGEMENT

SCM's growing impact in areas formerly dominated by marketing and marketing channel management may be attributed to the classic "mantra" of marketing performance, i.e., accessibility to the required products at the required time and location. Nonetheless, it also indicates that connections between the two fields. Recent discussions in Supply Chain Management (SCM) have focused on whether the supply chain is "lean" or "agile". Supply chains that are designed for "more with less" concentrate on streamlining operations by minimizing waste and using lean manufacturing techniques and just-in-time inventory replenishment. It is said that a lean strategy is best suited for markets with stable demand, large volume, and minimal product diversity needs. However, agile supply networks are meant to be flexible, highlighting the supply chain's capacity to adjust quickly both in terms of volumes and diversity to changes in demand. Volatile demand and strong demands for variation characterize the market for organizations with flexible supply networks.

Lean and agile Supply Chain Management (SCM) have come to the fore as a result of the increasing commoditization of many sectors. Due to decreasing brand loyalty and buyers' perceptions of little product differentiation, timely delivery becomes a critical success factor. It's important to remember the limits of SCM, despite its alluring claims to "reduce the total number of resources needed to achieve the essential quality of customer service": When it comes to customer value propositions, SCM doesn't assist companies figure out what customers value and how to transform that value into customer value propositions. Instead, it concentrates on making supply and demand more efficient, but it doesn't give solutions to the consumer dilemma. Customer value and contentment will not be increased by supply chain efficiency on its own, though. The "raison d'être" of marketing has been universally acknowledged as "creating value via exchange processes" since the academic discussion started on the theoretical foundations. Values are more widespread than ever before in today's society. Customer value may be described as "a customer's perceived preference for and assessment of those product qualities, attribute performances, and repercussions deriving from usage that help attaining the customer's goals and objectives in use circumstances.". Customer involvement in value creation is emphasised in this definition since it contains a hierarchical structure with qualities, consequences, and objectives.

In addition, Aarikka-Stenroos, Welathanthri, and Ranta [2] highlights that customer value is dynamic in that it varies over time for both customers and consumers. As a consequence, companies must understand not just what their consumers value, but also the reasons that impact their altering perspectives on value through time. Customer segmentation, product and service creation, and customer value propositions are all aspects of marketing that may be used to any kind of product or service (pricing, branding, communication, promotion). The strategic purpose of marketing today includes an emphasis

on Customer Relationship Management (CRM). CRM alludes to a macro-level activity "engaged in developing and administering a profit-maximizing portfolio of client contacts" Marketing, on the other hand, is more related to the generation of revenue by concentrating of the firm's demand position, while supply chain management is more concerned with ensuring a low-cost supply. The company's profitability is a direct result of these elements. Many studies have pointed out the need of bringing together marketing and supply chain literature. A marketing strategy's distribution needs SCM for its successful implementation, as Astuty, Pasaribu, Rahayu, and Habibie [3] explains.

Customer-centric marketing, as Tuominen et. al. [4] argue, must also assume responsibility for supply management. They claim that in marketplaces where customers' demands and desires are becoming more diverse, "businesses will have to promptly transform their suppliers in order to fulfil demand, i.e., conduct demand-driven supply management. Besides delivering higher customer value propositions, Weerawardena and O'Cass [5] argue that market-driven firms will have a long-lasting competitive rivalry if they have a distinctive business structure to support it. "SCM" stands for supply chain management, which refers to how the business system is put together. New product development and CRM are defined as the three crucial operation that basically add value to the maintainability and assurance of customer value by Geiger et al. [6]. Even though marketing is supposed to link these processes, they confess that its involvement in SCM is limited to "explication and navigation," which is a far cry from its role in maintaining customer relationships. According to several researchers, the shift toward networks and network competitiveness in the early 1990s redefined and expanded marketing, but they didn't see the necessity for a deeper integration between SCM and marketing. Most definitions of SCM in the literature focus on the significance of incorporating marketing within the SCM idea. According to Bechler, Steinhardt, and Mackert [7], SCM is administration and integration of significant business operations according the supply chain. CRM, CSM, and Demand Management are the three marketing-related procedures they explain.

Firms must balance the requirements of their customers with their own capabilities, and crucial consumer data must be exploited to reduce uncertainty and maintain smooth supply chain flow. The SCM model of Shankar and Tripti [8]is built on the inter-functional synchronization of major business operations across market- and supply-related divisions. They recommend that researchers explore on ways to better coordinate these activities. When doing SCM research, Sodhi and Tang [9] recommend starting with the end user in mind i.e., "End-user demand" or "seamless demand pipeline", which dictates the distribution network, not supply. Setiawan, Harsono, Haryono, and Rahayu [10] connects the role of market mediation in a supply chain to the integration of marketing within the supply chain.

As such, the supply chain should ensure that "various things getting to the marketplace" matches what the buyer wants to purchase. Ayambire [11] underline the importance of relationship management and entrepreneurial orientation in the implementation of SCM. When it comes to the connection between SCM and marketing, the logistics industry has developed a strategy called as Efficient Consumer Response (ECR). The strategy is more open to integrating marketing with supply chain operations, rather than the other way around. Jasper, Leenders, and O'Shannassy [12] state that "the marketing concept, market orientation, relationship management, and SCM are not separate but closely linked." However, the concept of SCM purposes to unite transportation and marketing, which were initially closely-connected but have since become isolated.

SCM contributions to the marketing interface exceed those from marketing, according to our evaluation of published literature. According to Kirillov [13], "marketing scholars have been sluggish to rise to the occasion of incorporating logistical research into their analyses of distribution networks" even when it comes to the most evident interface. In spite of firm justifications for an integrated methodology, in different enterprises, the supply side seem to be significantly separated from the demand side, and the executives in the supply chain have a vague knowledge of the underlying causes and demands of consumers.

Table 1. Concepts Of Demand Management

Concept of demand management	**Description**
Demand Sensing:	Increasing the speed at which "real" market data may be sensed in order to better comprehend demand responsive market movements. In contrast, order-to-shipment data might have a delay of 1-3 weeks when converting "real" market (or channels) demand to actions.
Demand Shaping:	Improving the demand for a product or service. Price and revenue control, as well as selection, merchandising, positioning, and sales incentives and marketing programs are all included in this category. These demand-increasing strategies are seldom used in isolation. As a result, they're often launched into the marketplace jointly.
Demand Translation:	Integrating the market's demand for each function inside the business from the outside in. Distribution, production and procurement all have unique needs and demands that are taken into account in the system design. With "ship-to modeling," the projection is predicated on "the selling unit" entering the channel. As a result, a "ship-from" view is created for each unique job depending on the requirement.
Demand Orchestration:	Market-to-market pricing decisions based on the optimum mix of risk and opportunity. The ability to concurrently detect and influence demand using sophisticated analytics is essential for making these kinds of trade-off judgments.

It was determined that the distribution network community does not understand the idea of demand management shown in **Table 1** in a benchmarking analysis of more than 400 enterprises. A lack of demand knowledge has led many organizations to believe that supply chain synchronization is impossible. It was found that just 17 percent of all organizations had properly connected their distribution network and customer operations in a worldwide study conducted by Trobois, Brun, Tan, and Karsenti [14]. Although it is not unexpected, these integrated enterprises have surpassed their competitors according to performance metrics such as growth in sales, customer service, ROI and market share.

The outcome is a reduction in labor and material costs, as well as a faster turnover of assets. At organizations with a supply chain advantage, methods like strategic sourcing, inventory reduction, and CPFR are a commonplace (for example – just-in-time). Supply chain excellence has resulted in considerable cost savings for an Australian grocery chain, which can subsequently be reinvested in lower selling prices. As McLaren, Tyler, and Jones [15] points out, a firm's capacity to compete on price and availability is sometimes constrained when its supply chain strength is unlinked to the concept of marketing distinctiveness, as is the case with low-cost generics providers. Supply chain efficiency may be used to achieve a competitive edge. Benson and Chau [16] emphasize the challenges of SCM operating independently of marketing management. SCM must take into consideration the variable levels of demand for different products and services. Supply will regard demand as exogenous if the two sides are separated, and it will not recognize that the company's customer-facing activities have influenced demand. Customers and client groups' specialized needs can't be met if there is a lack of timely and consistent consumer and demand information. The consequences of this failure include poor product and service creation, a lack of individuality, and shoddy execution.

Marketers thrive in identifying and satisfying the unique needs of their customers, at maintaining great customer relationships, and at creating memorable brand identities. Many companies have been able to gather contact and purchase data, segment their consumers, tailor the value propositions, and integrate marketing channels by employing CRM systems to manage their customer interactions. Because they have a deep grasp of their clients, they can also employ marketing tactics more cost-effectively. However, a strong brand can only compensate for a deficiency of supply chain strength, which results in a a long delivery time and high-cost base. Corporations that fail to meet their obligations to individual customers because of a lack of support capabilities risk losing their reputation and their customers' happiness. If the organization does not capitalize on shifting consumer preferences and hence loses market share, frequent mistakes include under- and over-delivering and failing to meet customers' needs. Companies need to be able to distinguish not just their products and services but also their distribution techniques in order to get a competitive advantage. Customers may benefit from lower prices on high-value items because of their unique supply chain capabilities. Customer-by-customer pricing analysis helps supply chain managers prioritize orders and adjust service packages to match the needs of consumers and the company's bottom line. Product and service lifecycle management may be improved by integrating the supply chain with diverse client groups and reacting to new and changing customer expectations more proactively.

It is difficult to argue against the persuasiveness of combining supply chain management with marketing. One reason why so few companies have been able to effectively combine their supply and demand operations is because these tasks are inherently challenging to do. A smooth flow of data from the front-end client integration interface into the production interface is essential but insufficient. Instead, it's important to comprehend and plan how supply and demand are affected by marketing activities. Price, marketing, and product mix activities have an impact on supply chain costs and delivery times. Customers' value propositions must account for the volume-driven supply chain costs that significantly affect the profitability of the product. Thorough integrations come in a wide variety of forms, and each has pros and cons of its own. As a consequence of supply chain integration, customer-centric supply networks have emerged. All internal value-creating processes, as well as the operations of suppliers and distributors, are coordinated to satisfy consumer expectations in a customer-centric supply chain. The DCM strategy's main goal is to build a supply chain that is attentive to the demands of its clients. **Table 2** shows some of the objectives and benefits of DCM.

Table 2. Objectives and Benefits of DCM

Objective and Benefit	Descriptions
Reduces inventories	It encourages lower inventory levels by providing exact inventory availability data.
Reduces lead time	It encourages shorter lead times by improving visibility of product demands.
Increases sales	It encourages improved sales by being capable of verifying existence and delivery of conventional and upgraded items in real time.
Enhances responsiveness	It encourages enhanced responsiveness by collaborating across several sales channels while keeping manufacturing restrictions in mind.
Enhance customer service	It promotes greater customer satisfaction and persistence as a consequence of increased capacity to fulfill delivery deadlines. Members of the DCM collaborative system will attempt to minimize markdowns, improve sales, reduce business processing costs, and improve profitability.

III. DEMAND CHAIN MANAGEMENT

Due to a lack of communication and cooperation across departments, many functional managers see marketing and supply chain management as two entirely different fields. Supply chain managers often only have a hazy understanding of the factors that influence consumer demand, despite the compelling case for an integrated strategy. 3 Rather than being a cohesive one, the marketing and logistics departments often find themselves at odds with one another due to a breakdown in communication and misunderstandings. Any business will have difficulties when attempting to combine marketing and logistics due to the inherent competition between the two departments. Many businesses have become so preoccupied with perfecting their supply chains that they have lost sight of their customers and the markets in which they operate.

Companies must thus pay attention to both the supply chain and the demand chain. "The intricate network of corporate activities and processes that enable organizations identify, manage, and ultimately generate customer demand"4 is how the demand chain is described. Having a well-oiled supply chain is just half the issue; the other half is a well-oiled demand chain that promotes a strategic method of reacting to the market. When designing a supply chain to fulfill consumer demand, it's important to have a firm grasp of the market and the expertise to manage the supply chain in a manner that accommodates a wide range of preferences. Weak links in either the demand or supply side of the equation can lead to sub-optimal results. This is because a strong demand chain without a strong supply side can lead to a high-cost base and slow, inefficient product delivery. DCM is a relatively new business strategy that combines marketing and supply chain expertise to better compete in today's market.

Although DCM is considerably a novel ideology, it has previously been described in a variety of ways. Specifically, a contrast might be drawn between a wide and a restricted conception of DCM. "A set of processes aimed at regulating and coordinating the full demand chain, starting from the end consumer and working backward to raw material supplier" is how Jaipuria and Mahapatra [17] characterize DCM. Additionally, the authors underline that DCM begins with the client, then shifts to the supply chain via the distributors' supply chain back to the supplier's suppliers. Since everything should be done in response to a specific requirement of a certain customer, this approach is excellent in every way. Managing a supply chain vs. managing a demand chain are fundamentally different, according to the authors.

We can rethink the distribution network as a platform that starts with customers rather than recipients. The term "demand chain" could fundamentally replace supply chains, but Fattahi and Govindan [18] consider this an undesirable terminology change. Thus, they advocate for a more precise explanation of DCM.' The authors recommended confining the term "supply chain" to market mediation supply networks, but Crook and Esper [19] argued that supply chain functions differed between effective market mediation supply chain and physical supply chains. In order to meet the innovative demand for products, supply chain efficiency is compromised in responsive demand networks. The authors also maintain the separation of supply and demand chains. Both supply and demand chains are seen as different entities by the authors, who recommend the terminology value chain as an umbrella word for both.

If demand management is defined as "an awareness of present and future customer needs, market features and of the possible response possibilities to satisfy them via the deployment of operational processes," he blends the elements of supply chain and demand chain. However, the terminology "supply chain" might be supplanted with the phrase demand chain, which could lead to misunderstanding. Though Grover and Dresner [20] argue that supply chain effectiveness is the foundation of competitive advantage, we maintain that demand needs to always be linked to supply. We acknowledge that idea of the authors that supply and demand processes overall, but they might still be distinctive. Resultantly, we believe that DCM is the best approach to link up supply- and demand-oriented activities. Efforts to create value for customers and markets are collectively known as demand processes. In the past, these procedures have been associated with the field of marketing. Delivering on demand requires a series of activities known as supply chain management. DCM should be seen as a macro-level process that encompasses all operations firms perform in order to develop and deliver customer value propositions that are based on their requirements. An appropriate theoretical framework for demand chain management is provided by the firm's customer value-based philosophy.

In the company's customer value philosophy, higher performance is due to the provision of good customer value. Companies have to focus on their customers' demands and the procedures they use to give value to them. When it comes to marketing, SCM provides a relevant viewpoint on the organization in today's marketplaces. Participants, social structure, objectives, and technology are the four main components of an organization. There are many people involved in both supply and demand chains, and they all aspire to profit from their contributions to the chain and are drawn jointly in the pursuit of common objectives. As these people exchange data and organize their actions, a social structure is formed. Last but not least, technology is the method by which organizations carry out their duties. In order to facilitate customer value creation activities, the demand chain is a task-oriented structure.

Literature Review

It was discovered throughout our research that the DCM idea had received very little attention from a marketing viewpoint. As well as looking at what is already known in the literature, we also did our own field study to better understand both DCM as a concept and marketing's place within it. Data was gathered via a co-development session, a literature review, and 'discovery day' where we contrasted and analysed the available themes and patterns from the training sessions with the position defined in literature. That is, unlike many other conceptual frameworks, our postulated idea of DCM is based on

both previous research findings in the literature and on-the-ground observations. In both related sciences and in marketing, concepts and theories have been developed using this method.

Eight firms participated in the co-development workshop, which included representatives from both supply and demand domains (marketing, logistics sales, and SCM). Only by including people from both sides of a corporation can supply and demand integration challenges be fully understood. Initially, we planned to conduct matched interviews at chosen firms. There were limits to the approach that were discovered after doing a small number of interviews. A lack of information of DCM was cited as the main reason for integration failure by respondents, rather than the DCM parts themselves. As a result, we opted for a co-development workshop in which both sides may participate at the same time. The firms were selected based on their demonstrated experience and interest in DCM. A wide variety of businesses were represented, from pharmaceuticals to manufacturers of goods and photo-tech companies. Synectics, a consulting firm that specializes in delivering these types of seminars, conducted the one-day program.

Synectics used a creative problem-solving methodology that attracted the mindset of both functional representatives, but they sought conjunction. With the goal of using both current and future knowledge, the approach uses brainstorming methods. Participant thinking may be molded through the course's intensive projective tasks, which include tools and approaches. In our role as "problem owners," we were able to choose the most important themes, while leaving the actual implementation to the experts. Notes and a large number of flip charts were used to document the workshop's abundant information. Because the session was not taped, Zhang, Tan, Ding, and Li's [21] strict coding criteria could only be applied to the textual content when analyzing it.

Patterns of content topics were discovered and organized into a framework through coding. After the session, a report was provided to the participants and they consensus with the contents was gained to ensure that the results were accurate. There followed a comparison and contrast of the developing topics to literature. Few months after the co-development meeting, the resultant model was finally verified by other practitioners. A "discovery day" was held to introduce the framework to 14 representatives from various sectors and job functions. As a result, the group was divided into two smaller groups for further discussion of the framework. The researchers who attended the original session moderated both focus group talks. They were recorded on tape and transcribed so that the results could be studied. Two of our framework's basic parts have enough support from the focus groups to stand on their own. It was necessary to make significant changes to one piece.

As a whole, we understand the limits of our qualitative data gathering method. The findings were not provided too statistical evaluation and are subsequently not representative since we used tiny, non-representative convenience samples. Due to the fact that the study's primary goal was to provide a theoretical framework for DC We believed it was critical to draw on a broad variety of backgrounds and opinions while developing the marketing strategy. We don't want to generalize our results to any demographic, but rather to extract and analyze the notion and its underlying premises via field study. To ensure that our qualitative results were accurate, a great deal of effort was put into confirming the key themes that were presented from the co-development workshop. "Triangulation" of perspectives was attained through the co-development discussions as well as workshops in focus groups from the day of discovery.

Using triangulation to improve the reliability of qualitative research is recommended. As a result of the lack of knowledge in DCM and the complexity of the problems, substantial contact with responders was required. Qualitative approaches are appropriate in these circumstances since they enabled us to get into practitioners' "mental maps" and experiences. Because we are interested in DCM from a corporate viewpoint, we limit our study to this area alone. Suppliers and distribution partners are not necessarily excluded, but the perspective of the coordinating firm is taken into consideration. Cross-functional and inter-organizational data collecting is challenging, but it seems to be almost impossible. In order to better understand DCM in its infancy, we settled for cross-functional data collecting.

IV. A CONCEPTUAL MODEL FOR DEMAND CHAIN MANAGEMENT

Using the information gleaned from the co-development workshops, exploration day, and literature study, we were able to construct a DCM conceptual model based on three interrelated themes: Process management, configuration, and interpersonal relationships are all aspects of SCM and marketing's professional relationships that must be managed to ensure a smooth flow of goods and services to and from customers. The results of the fieldwork and the supporting information from the literature will now be detailed for each of the aspects, and the proposals for additional marketing research will be drawn from these findings. The co-development workshop defined the necessity of incorporating supply and demand processes in DCM.

However, rather than focusing on the integrated process as a whole, this debate centered on the factors that promote and obstruct its successful integration. delegates' varied experiences with process integration implementation in their organizations may have played a role here. delegates' diverse experiences Process-driven corporate culture was cited as a key motivator by attendees. Only until board members advocated for cross-functional processes commitment did functional heads accept the responsibility to reframe their functional roles. To some, marketing is a critical component of process coordination. Nonetheless, our results from the co-development workshop also indicate that different marketing teams do not seem to be performing or considering this critical component. In various workshop firms, revenue stimulation is typically more important to marketers than considering the ramifications for supply chain management.

As a result, each section operates on its own. Uncoordinated promotions were also discussed. Only in the context of venture ventures could demand and supply cohesion happen. The supply chain professionals particularly seemed disgruntled since they felt reliant on the readiness of marketing to stimulate process synchronization via the sharing of market and client information. Co-development workshop participants noted that IT played a supportive role in process integration. One corporation, for example, employed technology and process reengineering in order to align its procurement and branding efforts. According to both corporate representatives, robust IT-based consumers and integration of supply chains are beneficial for anticipating demands, planning orders and marketing with a focus on specific demographics. The other delegates disagreed about the inflexible and complex initiatives employed in their companies, which limited the demand-based data flow between departments.

It was noted that the number of frameworks being rationalized through IT architecture integration in the business approximated the number of components rationalized through supplier rationalization programs roughly 10 years ago. During the focus group talks, it was confirmed that IT plays an important role in supporting both interconnected demand and supply operations. The participating firms' present practices were vastly different from one other. However, one delegate from a multinational food manufacturing firm presented an IT-supported, fully integrated and aligned process that included an integrated supply-demand-inventory plan, a buying plan and a production-by-factory plan. The study also supports the integration of processes as the initial dimensions of DCM, and the case for supply and demand system integration was addressed in both marketing and SCM contexts. Puica [22] highlighted three key processes in marketing: Customer Relationship Management (CRM), New Product Development (NPD) and Supply Chain Management (SCM). Even though the writers stress the need of integrating the processes, the integration itself is not addressed.

Similarly, Soroor and Tarokh [23] recommend that SCM and CRM processes should be linked to "deliver high levels of product availability and diversity, but which are low cost and dependable...". The interlinkage is portrayed at a significantly abstract level, despite the fact that they give guidance for both processes individually. There are many contributions to this field that have emphasized the need of integrating important business operations across and within organizations. Various writers have recommended a broad variety of business processes, including supply- and demand-related processes. However, the recommended integrative models are aimed at stimulating new research rather than providing explicit guidance on how to integrate demand and supply. According to [24], future study should focus on how companies and supply chains might better coordinate their activities. A solid case is made for integrating fieldwork and literary processes, but no guidance is offered on how to do so. A process fusion framework for the demand and supply process application has just recently been proposed by Brahami, Zahra, Mohammed, Semaoune, and Matta [25]. From order input through delivery, he identifies eight supply and seven demand procedures. These integrate macro-market definitions and CRM. The Sturm, Hohenstein, Birkel, Kaiser, and Hartmann [26] argue that management, special organizational competencies, or technology may all be used to accomplish "fusion" or linking between various processes. We propose a three-layered process integration framework based on this research, which includes the consumer purchasing life cycle, as well as the supply and demand operations.

The model's three tiers emphasize, first and foremost, Woodruff's idea of including the consumer into the value generation process. Secondly, the purchasing cycle recognises the dynamic nature of customer interactions in accordance with the concepts of relationship marketing and CRM. As a final point, a connection between the activities of the demand and supply processes provides advice for establishing the process integration. In general, every process may be subdivided into smaller activities and processes, thus the abstraction amount utilized is completely up to the practitioners. In our framework, the activity tier was chosen to mirror the tiers of consumer purchasing cycle, including indicating those actions that are essential for DCM. When a client is aware of a need, it might set off a chain reaction that leads to the production of new value for the business. Demand and supply operations are focused on "housekeeping" and "preparation" at this point in the process. Customers' recurring purchases need a thorough understanding of the market as well as the definition of market segments, which may necessitate market approval measures. The current supply network must be compared to the market data generated by the demand process to ensure that it is up to date. Common tasks like supplier evaluations based on the company's market standing would be compromised by this. Predictions and demand scheduling become more precise if a consumer is contemplating making a purchase from the organization.

Customers are micro-segmented in the demand process according to their preferences, needs, and perspective level of profitability, as well as the quantitative prediction. The supply chain responds to customers' segment-based delivery requests. Supply chain functions e.g., capacity management and material planning will be addressed. Customer value is calculated for each industry based on an "ideal" customer value model that takes into account all of the relevant factors such as benefits, expenses, and other factors. Customer value models may be significantly affected by supply-side variables such as pipleline pricing and delivery options. The value profiling process becomes simpler to integrate into the demand process when the distributors' side presents service delivery package options as inputs. Using the purchasing and decision-making process, it is possible to test the integration process of demand and supply chain. If a product or service isn't accessible when a customer needs it, all of your marketing efforts will be for nothing. Xing and Grant [27] suggested a physical distribution service framework with three characteristics: availability, responsiveness, and delivery quality, all of which capture the most important supply tasks. The Youn and Dodoo [28] point out that the three-dimensional desires of each consumer may vary from one another.

As a result, according to the standpoint of demand chain, the principal aim is not to execute sales, but rather to sustain a lucrative client base. As a result, the objective is not to provide better or cheaper service to clients in general, but to sell and

deliver products based on an in-depth knowledge of customer wants, profit potential, and needed supply capacity. Having a well-integrated supply chain should allow the organization to economically satisfy a variety of consumer demands. During the time the consumer is using or consuming the service or product, marketing activities vary from offering information and advice to providing support services such as financing, installations, or warranty. In order to provide service experience, demand and supply operations overlap. Supply functions are often responsible for duties such as product returns, exchanges, and disposals. The post-sale phase also includes the goal of "building" a connection with the customer via cross- and upselling opportunities, in keeping with CRM principles. Customer knowledge and assessment of cross- and upselling offerings will bring the purchase cycle to an end.

Reports concerning over- or under-delivery, including data on profitability, permit supply functionality in order to produce developed service packages in order to financially expand customer relationships. Longer lead times or lower post-sale assistance may be shifted from customers who are less profitable to customers who are more profitable. The research also suggests that information management and technology are important enablers of process integration, which is in line with the results from the field investigation. Integrating demand and supply processes should influence the design of data systems, and systems should also be designed to enable the integration of these two processes. While theoretically it may seem simple, it is really a challenge in reality. According to the research and the conclusions of our workshop, information systems are typically the outcome of the growth and service of discrete demands of sectional lines as opposed to the main business operations. As a result, IT solutions often strengthen rather than break down the barriers between departments.

An order's source must be determined, for example, through catalog, phone, direct sales force or the online. Information systems must support these duties. Customer data such as sales history as well as profitability, as well as product availability for their unique needs, should also be provided. This entails the synchronization of data from several channels of client engagement with data from procurement, production, and logistics. The CRM programs on the demand side as well as the SCM instruments on the supply side are present instruments on the supply side are present, but they are seldom linked. With CRM technology, companies can gather and retain unprecedented quantities of consumer data and then integrate that data back into customized services, marketing activities and product upgrades, which has brought relationship marketing to the forefront. The importance of technology in facilitating the demand process has been questioned, but it remains unassailable. Information systems also play an important role in SCM integration, which is well-known.

SCM software often include a variety of purposes, including forecasting, analytics to determine operating costs, and collaboration tools to link supply chain stakeholders. Through the use of these tools, the pipeline's visibility may be improved (Christopher). Unless inventories can be "seen" in real time, the supply chain will be dependent on forecasts rather than actual demand. When it comes to the digital integration of DCM, managing the separate features of CRM and SCM technologies are not enough. The integration of the supply and demand processes reveals additional IT needs: Data technology should aid the firm’s capability to service varied customer segment needs by assuring the capacity to search for and establish alternative supply channels. We may conclude that process design is a key DCM aspect as per our preliminary empirical findings and literature study. It is also important to examine the impact of marketing actions from the combine process perspective and to enhance demand-based combination of data demands by sharing market data. As a result, we may assert the following hypotheses in **Table 3** below:

Table 3. Hypotheses 1, 2 and 3

Hypothesis 1:	It is the responsibility of marketing in the DCM system to disseminate customer and market data in order to facilitate integration easier.
Hypothesis 2:	Marketing in DCM is responsible for evaluating the impact of marketing initiatives from an integrated process viewpoint.
Hypothesis 3:	Marketers in DCM have a key role in promoting the demand for data rather than the supply side of the equation.

Fieldwork uncovered the necessity to control demand chain configuration as another feature of a DCM architecture. It is important to consider the amount of distinct client groups that the firm may service with diverse supply chains when setting up a customer segment-focused demand chain organization. The delegates drew a clear delineation between configuration and process and their separate roles, despite the fact that the two are closely intertwined. Open social system theory implies that procedures in a framework are classified according to the structures of the system. This difference is compatible with this view. Configuration in Supply Chain Management (SCM) is sometimes referred to as "supply chain design." A client segment centered demand chain organization was clearly needed, but the problems of adopting it were brought up at the co-development workshop. Only one organization has expertise in connecting customer demands with supply chain solutions that were tailored to their specific needs. Supply chain changes were required for the development of a new photoprinting technology product inside the firm.

Resultantly, a cross-functional venture group was established that integrated SCM and marketing. This coordination allowed the business to select target markets for its new product, as well as to establish a supply chain capable of competing in those areas. A capacity planning framework was utilized as a guide for mapping the interfaces between the two services.

When it came to marketing and supply plans, "the essence of the small firm might be captured," a delegate said at the venture team meeting. There were numerous more intriguing instances of customer segment and supply chain alignment difficulties discussed in the focus groups. A paper manufacturing firm, for example, catered to five distinct client segments, each with its own set of design, quality, delivery, and volume requirements. However, the corporation was looking for a solution to keep the diversity while reducing the complexity. Rather than trying to "manage the consumer" by pushing a standard product line and delivery conditions in the past, the corporation is now working to build standard supply chains for every one of company's several clientele groups. To meet the needs of their worldwide key clients, another delegate insisted on the need of establishing specialized supply chains. They had to use a "segment of one" strategy since their products had to feed into the client's perspective of sales and aid in enhancing marketing efforts.

The difficulty of dealing with many supply chains was compounded by the need to adapt to shifting client demands, according to all of the participants. For the first time in its long history, one of the company's long-standing clients was serving two major truck manufacturers. This necessitated the creation of a new supply chain, which necessitated a significant organizational transformation process. Several delegates also emphasized the role manufacturing plays as a hindrance in a customer-aligned organization. Product capabilities tend to be the primary emphasis of manufacturing facilities rather than client segment requirements. As a result, production strategies that focus on product efficiency might obstruct the timely delivery of goods to various consumer groups. The degree of complexity that can be managed was the last topic of discussion. They had outsourced the whole manufacturing of their "standard segment" since they couldn't serve both highly customized and standard client segments at the same time, one delegate said. Another argument for segmenting your supply chain by client groups comes from academic research. Logistics were first tailored to meet particular customers' or segments' specific requirements.

The claim that logistics has to be tailored to the demands of individual customers has been scientifically validated. For the first time in an SCM setting, Li, Wu, Sethi, and Zhang [29] advocated for market- and product-specific supply chains. A matrix of possible product-supply chain combinations was presented based on the differences between inventive or functional goods on one hand, and responsive and operative supply chains on the other hand. There have been more recent attempts to broaden this initial segmentation by proposing new taxonomies that include methods e.g., a product (standard/special), lead time, demand (volatile or steady), volumes, and the length of the delivery window (long or short) as a foundation for the development of market-specific supply chains. Case-based empirical research has been done by Gupta, Kumar, and Wasan [30] to examine the realignment of functional segments inside a cleaning product manufacturing organization, despite the fact that most submissions to date are conceptual in character. There were three ways the factory segmented customers: customer, production, and logistics; but none of these techniques were connected.

Many firms nowadays are using key account management and Customer Relationship Management (CRM) to segment their client base. In addition, the long tail of field sales is categorized by channel type. According to the Alkalha, Al-Zu'bi, and Jum'a [31], such a segmentation is not suited for developing a supply chain architecture based on consumer behavior. Internal organizational structures separate manufacturing from logistics, further demonstrating the independence of these two divisions. In production, promotional and standard items are differentiated, but in following supply chain phases, they are handled identically. As a result of this method, the logistics groupings between standard and swift response are developed. However, just three accounts made advantage of the rapid response service throughout the duration of the research. Finally, segmentation methods used in the external supply chain, such as sourcing, are completely different. They concluded that the challenges of integrating customer segmentations into the internalized supply chains are fundamental and that the alignment issues across the external supply chain might be large.

Changes in consumer value perception have been documented in the literature as well. When it comes to customer value change research, McKnight [32] have come up with a model that outlines three distinct causes: supplier location changes, consumer locations and the environment. A proactive approach is made possible by such a framework, although the authors acknowledge that certain occurrences are predicted while others are not. Another conclusion in the empirical research by Agrawal [33] discussed above was the connection between the structure of the demand chain and responsiveness to changes in the value that customers place on products. When the demand chain's structure is somewhat steady, efficiency seems to be a more important DCM target. Not only is it necessary to have a mature organization, but it is also necessary to have the capacity to adapt effectively to new end-customer value propositions, as he discovered.

A mature organization is more likely to have methods that can be institutionalized in order to disperse market sensing capabilities. There is a need to study how customer segments inside organizations might be connected to segment-supporting, responsive supply chains as a first step in the reconfiguration dimension of DCM. Traditional market segmentation relies on a one-size-fits-all strategy that does not take into account the needs of both the client and the company's supply chain. This granularity might be problematic from a demand chain viewpoint since it allows corporations to react to specific client wants or to micro-segment them in significantly smaller segments. Tentative knowledge shows that a deficiency of incorporation between customer-driven value specifications and production-driven distribution chain may result if products are too customized. Even in companies where customers' purchasing habits have led to "database" segmentation instead of market dynamics, reconciling customer pleasure with supply chain effectiveness is proving to be a substantial difficulty. Another area that requires more investigation is how organizations may transfer their market sensing capacities and their capabilities to establish novel customer propositions into structured adaptation requirements for supply chains.

The following hypotheses in **Table 4** about marketing's involvement in supply chains are centered on our preliminary empirical findings and literature reviews:

Table 4. Hypotheses 4 and 5

Hypothesis 4:	Marketers in DCM are responsible for bridging the gap between external and internal customer segmentation.
Hypothesis 5:	The marketing function in DCM is to gather data about the changing preferences of customers as a foundation for the supply chain's structural adaptations.

V. CONCLUSION

By being aware of the customer's needs and efficiently responding to various requests, Marketing and Supply Chain Management (SCM) may collaborate to provide more consumer value in today's markets. A concept known as customer-centered supply chain management (CCSCM) combines marketing with SCM and DCM. SCM, in contrast to marketing, which is often client-focused, focuses on maximizing the use of existing resources in order to successfully implement marketing decisions. Integration of the supply chain and marketing is important between those who determine demand and those who provide it. Although DCM has been investigated from an operational and supply chain standpoint, despite the concept's obvious applicability, it cannot be credited with any marketing impact. By defining the objectives of marketing within the demand chain, this contribution closes the gap in research and introduces a host of vital and novel topics for further research in marketing. We believe that more SMEs will adopt the DCM idea in the quest for an achievement of competitive advantage. By tightly integrating customer and supply-side processes, these businesses may boost profitability via advancements in delivery accuracy, product availability, flexibility, and responsiveness. In the entire DCM, SCM and marketing collaborate to establish the right customer relationships, make strategies for cooperative customer priority, and analyze accurate consumer data. Our conceptual model recommends novel obligations of marketing in DCM, which stimulate further research into new fields.

The DCM's marketing role also heralds a change in the role of marketing inside organizations. Marketing has always been a border discipline between an organization's clients and markets. But detractors claim that this often happens at the expense of internal initiatives made by the corporation. From the standpoint of DCM, marketing has to define its functionalities in the combined supply and demand process, including incorporate information from other departments into decision-making. In order to translate and understand marketing objectives into the drivers of supply chains, and better understand the operational constraints of the organization, SCM and marketing must collaborate to identify innovative ways to reach the market. The flexibility to ignore marketing decisions, which are not financially applicable for the organization is also necessary, as is early supply chain management engagement in the marketing planning process. This problem may be solved in two ways: marketing has to be far more cost-conscious and less receptive to poor offers.

Discussions from the workshop and focus groups indicate that marketing will be against change and may attribute integration failure on SCM's lack of market focus. We are both in agreement that SCM has to focus more on output, and will attest to the importance of market orientation in facilitating the adoption of SCM. However, we contend that the successes of DCM are not typically based on market-driven ideology but also effective SCM and market skills. The ideal way to connect customers, SC initiatives, and process culture is via an integrated DCM strategy for firms with diverse supply chain initiatives, customer services and culture. Its aim to utilize DCM to define competitive advantage signifies the closer connections between DCM and strategic corporate management. Both SCM and marketing address how marketing and strategic management are related to one another. Effective strategic management requires that organizational performance and consumer needs be in sync. Since their objectives are so similar, both disciplines have a lot to contribute in this area. Strategic management and Digital Content Management (DCM) should not vie for supremacy, in our opinion. Instead, they could benefit each other, and DCM's contribution is significant since it incorporates the skills of two vital disciplines in its quest to comprehend the mechanisms that lead to the creation and delivery of improved customer value.

Data Availability

No data was used to support this study.

Conflicts of Interests

The author(s) declare(s) that they have no conflicts of interest.

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