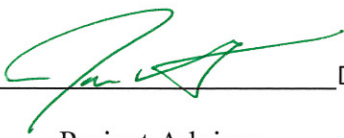


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The attached educational project, by Jeremy Williams, entitled, Customer Relationship Management Systems Role in Supply Chain Management Strategy, when completed, is to be submitted to the Graduate Faculty of the University of Wisconsin- Platteville in partial fulfillment of the requirements for the (MASTER OF SCIENCE IN INTEGRATED SUPPLY CHAIN MANAGEMENT) degree.

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CUSTOMER RELATIONSHIP MANAGEMENT SYSTEMS ROLE IN SUPPLY CHAIN
MANAGEMENT STRATEGY

A Paper

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Jeremy Williams

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I. Abstract

This paper examines the recent increased use of customer relationship management and its impact on firms today and more specifically, the role it plays in shaping the relationship between firms and their end consumers, through the examination of three key aspects. The first aspect is to evaluate whether the use of customer relationship management software provides the best platform for firms to exercise the strategic concept of customer relationship management. As a strategic concept, customer relationship management deals with the ability of firms to cultivate long-term profitable relationships with their end consumers and utilize these relationships to create additional value to these end consumers. Next this paper examines whether CRM software that is delivered on a Software-as-a-Service platform is the optimal platform for firms. The last portion of the paper examines how CRM software delivered on a SaaS platform can have an impact on supply chain management within a firm and further push the firm towards adoption of a Demand-supply Chain Management strategy.

II. Introduction

The role of Customer Relationship Management, also known as CRM, in shaping the relationship between firms and their customers has become a focal point for both industry professionals as well as researchers in recent years. While the traditional marketing mix still plays a role in firm's outreach strategies the changing economy in recent years has spawned a much more fragmented mass consumer market that is more knowledgeable and demand more than possible before (Nguyen & Mutum, 2012, p. 404). Firms are no longer able to rely on brand awareness or being the price leader as a strategy to cultivate a true lasting sustainable advantage in the market but rather one piece of a complex marketing and customer outreach strategy. One

method companies have used has been the investment in software categorized as CRM software. CRM functional software can be classified as a type of supply chain management software however it is cross-functional and must be leveraged across the different areas of the company to be truly effective (Nguyen & Mutum, 2012, p. 404). Firms need to integrate CRM within their SCM strategy on a cloud-based model to create relationships with their customers and fully leverage their information systems which is crucial in competing in today's business markets.

The purpose of this paper is threefold starting with evaluating the importance of CRM strategy in the development and creation of relationship with consumers. The term CRM was derived from the traditional Relationship Management concept and has numerous varying definition. The idea of mass customization was introduced by Pine in 1993 and has gained steam through the use of cloud-based CRM software systems which have made it a viable affordable marketing methodology (Nguyen & Mutum, 2012, p. 404). Differing from Relational Management which strategically dealt with relationships with all shareholders, CRM deals only with the creation of dual-value between the firm and its customers. Many companies have adopted this two-fold relational approach which is more interactive as a method to appease more demanding customer segments which exist in today's market.

The second purpose of this paper is to evaluate the CRM strategy of investing in information technology with an emphasis on cloud-based software delivery platforms such as SaaS model. CRM software is one method that firms can utilize as a way to create this dual value between themselves and their customers through customized methods depending on the customer segment or individual customer (Nguyen & Mutum, 2012, p. 404). The most widely adopted model by companies for SCM solutions is the Software as a Service (SaaS) model. Software as a Service (SaaS) is, as defined by the industry analyst firm Gartner, "Software that's owned,

delivered and managed remotely by one or more providers—consumed in a one-to-many model by all contracted customers on a pay-for-use basis or as a subscription based on use metrics—it is ‘massively scalable’” (Singh, 2009, p. 10). It is for this reason the evaluation of this type of cloud-based delivery is thoroughly examined and evaluated in this paper.

The last purpose of this paper is to evaluate how CRM software delivered on the SaaS platform can shape all aspects of SCM in an organization, the push toward demand-chain supply chain management as a business strategy and how customer relationship management continues to shape SCM strategies balancing SCM with demand-chain management for future sustainable competitive advantage in the market.

III. Literature Review

Origins of CRM Management

The first portion of this paper will explore the origins of customer relationship management (CRM) and its progression as a strategic business orientation that intertwines the company cultural shift toward customer centricity focus paired with information technology systems allowing cross-functional pieces of the organization to leverage data to develop relationships with profitable customer segments. Relationship Marketing (RM) is the predecessor to CRM---though they sometimes are incorrectly used interchangeably—and though it was not formally termed prior to Berry (1983) its premise has been used for centuries with examples dating as far back as ancient Chinese and Middle Eastern civilization. Relationship marketing has varying definitions but in essence is the strategic broad management of all shareholder relationships with the goal of cultivating long-term shareholder value for the firm (Frow & Payne, 2009, pp. 9-10). This paradigm posed by RM states that the ongoing

relationships a business has with its customers should define the business itself. As Tracy and Wiersema put it, “Whether a business focuses its efforts on product innovation, operational efficiency and low price or customer intimacy, that firm must have customers or the enterprise isn’t a business—it’s a hobby”, (Nguyen & Mutum, 2012, p. 400). The reemergence of this business ideology in the 1980’s along with new information technology system capabilities led the way to the development of CRM strategies and information technology.

The ideology behind CRM had already begun to come about as a result of RM management resurgence in the 1990’s, as indicated by academics as well as industry professionals who began examining it as a viable business practice, but has official person that has been accredited for conception of the term [(Frow & Payne, 2009, pp. 10, 12) (Mandic & Vransevic, 2012, p. 1207)]. Similar to its predecessor, RM, there is no official academic consensus on an official definition of CRM with some researchers sighting over forty-five definitions and some only sighting thirty definitions (Frow & Payne, 2009, p. 11). Though these definitions do vary somewhat they have commonalities that remain constant: It is a cross-functional strategic approach; aligns all levels of the organization toward focusing on becoming customer centric; utilizes the collection and dissemination of pertinent customer information to leverage this knowledge across an entire firm; is concerned with cultivating long-term win-win relationships with specific customer segments that have been identified as having the potential to be profitable to the firm by identifying these customer segment nuances and tailoring interactions with these customers to best create value for both the customer as well as the firm [(Wang &

Hui, 2012, p. 117) (Nguyen & Mutum, 2012, p. 402) (Frow & Payne, 2009, p. 11) (Mandic & Vransevic, 2012, p. 1207)]. Viewing CRM beyond the scope of a technology initiative and instead as a cross-functional strategic approach concerned with aligning company policies and decision making to align with customer value-creation has been cited as key to its successful development and implementation (Frow & Payne, 2009, p. 11).

CRM Information Systems: Infancy

Though academics and business executives may adopt any number of these varying definitions of the term it is undisputed the importance CRM has and continues to have in shaping modern business strategy since its emergence in the 1990's (Frow & Payne, 2009, p. 11). The key to the tremendous growth of CRM information technology solutions and adoption of the strategic underlining principles in company orientation can be attributed to a number of factors relevant to the business environment currently. Examining the fundamental relational premise that is foundation of CRM strategy, cultivating profitable relationships with key customer segments, has concrete fiduciary facts that reinforce its merit. According to Nguyen & Mutum (2012), "It is from two to 20 times as expensive to get a new customer as to retain an existing one" (p402). This has not been disputed, however, it was the widespread use of the Internet which redefined traditional consumer-to-business interactions as well as relationships, coupled with development of new innovative information technology business solution systems, that was the catalyst which has fueled CRM's rapid adoption in the past two decades (Mandic & Vransevic, 2012, p. 1207).

Even in the infancy phase of CRM information technology software it was apparent the possibilities and implications these new software systems could have in shaping the relationship

between business-to-consumer would be tremendous. These initial information technology solutions garnered widespread attention across a multitude of market segments which led to explosive growth in the early adoption phase of the software. According to a JPMorgan's analysts forecast published in 1998, they predicted CRM technology would experience double-digit year-over-year growth rates citing evolving customer demands which placed added importance on interactive relationships with firms, added customizability of products and an increased willingness to use substitutes (Mandic & Vransevic, 2012, p. 1207). This predicted annual growth was accurate in spite of the high risk of failure with a reported seventy percent of all CRM projects not achieving the expected results (Wang & Hui, 2012, p. 116). As of the year 2008 Gartner Research reported the size of the global CRM market had reached \$15.5 billion and projected that by 2011 global markets to reach \$19 billion. The figures as reported by Gartner for 2008 comprised two main sources of revenue; CRM software revenue which they reported was \$8.3 billion and consulting which was \$6.2 billion (Frow & Payne, 2009, p. 12). Analyzing these figures, it can be surmised, that in spite of the high failure rate as well as financial investment necessary the potential benefits outweigh the risk.

Utilizing CRM for Relational Customer Approach

Undoubtedly the widespread adoption of CRM technology as well as strategic orientation has become so prevalent in recent years due in part to the potential benefits it can garner but also can be attributed to new external market factors which have fueled its rapid expansion.

Advancements in technology has altered and continues to develop the markets in which firms operate toward a more global and increasingly fragmented landscape which has led to firms either evolving or dissolving. Increasingly firms must also keep in consideration the impact their decisions have on consumer perception ethically, socially and culturally if they are to remain

relative in the market. Firms operating today deal with a new breed of constantly evolving class of consumers which are more conscious than ever before with new nuances, demands and ideals. Namely this new consumer class demands more and different things from firms: Interactive with consumer's social media networks and online blogs; information, niche, and service-orientation; personable as well as customizable products or services; focus towards higher quality products and services (Nguyen & Mutum, 2012, p. 402). In dealing with this new class of consumer, integrated CRM information technology software has emerged a critical tool that, if implemented and leveraged properly, is the best method for cultivating relationships with consumers and maximizing customer profitability.

To establish and sustain a competitive advantage in business today, regardless of the firm's size or product offering, management must recognize that past techniques such as product branding or establishing the best price point is no longer sufficient to establish a financially prosperous business or effectively maximize a lucrative customer base (Nguyen & Mutum, 2012, pp. 403-404) . To develop customer loyalty in today's market requires establishing and maintaining learning relationships with customers which can lead to cross-sales, reduced costs, free advertising through word of mouth, added customer life-time value, and less price sensitivity. The foundation of this relational approach lies in three key elements: An open line of interaction between both the supplier as well the customer; willingness to effectively innovate and implement changes that affect both parties involved; both parties must be constantly learning from one another to establish trust that exists from this more customizable approach. Customer Relationship Management software systems are instrumental in gathering, analyzing, forming, integrating, and disseminating this information throughout the organization when needed which can facilitate more personable points of contact between a firm and its consumer (Nguyen &

Mutum, 2012). When CRM is successfully implemented empirical studies have shown firms have increased profits by 270 percent while simultaneously improving customer satisfaction, loyalty and an increase in stock price (Wang & Hui, 2012, p. 119). Firms are increasingly recognizing the value in adopting a relational approach in marketing and these CRM systems are the most effective tool available in facilitating, maintaining, and leveraging these relationships with consumers (Nguyen & Mutum, 2012, p. 404).

CRM Cloud Solutions

CRM software is one method that firms can utilize as a way to create this dual value between themselves and their customers through customized methods depending on the customer segment or individual customer. Through the development of web-based cloud software in conjunction with the new business markets predominant and the changing expectations among customers toward firms has evolved into the SaaS service model delivery for CRM software. In many competitive market segments the adoption of a CRM cloud solution is viewed as a necessity for companies especially in highly volatile fast paced markets. As noted by Andreas M. Radke (et al.), "Big data and cloud computing are perceived by a growing audience as the biggest opportunities to gain a lasting competitive edge since the advent of the Internet and in particular the ever-increasingly dynamic SCM expects support in addressing the challenges it faces" (Radke & Tseng, 2015, pp. 040906-1). Cloud computing as a model, allows companies to leverage technology without initial fixed costs associated with previous information technology systems while offering limitless scalability, inherent flexibility, rapid deployment and as much computing power as needed. In essence this model drastically diminishes the barriers to entry

required by preceding systems allowing small to medium size firms a chance to leverage systems which were not feasible in previous information technology models available (Cegielski, Jones-Farmer, Wu, & Hazen, 2012, p. 185). In the year 2011 cloud service providers, as a whole, had a combined database of which encompassed a total of eighty percent of the entire worldwide supplier base (Shacklett, Cloud Computing, 2011, p. 17). Though there are benefits to adopting cloud-based systems there are also concerns which have arisen including security vulnerabilities, system service availability issues network-wide as well as implications of outages, ability to move data or data migratability, and true scalability (Durowoju, Chan, & Wang, 2011, p. 244).

Evaluating CRM Cloud Solution Alternatives

Countless types of cloud-based CRM solution providers available, a growing emphasis is placed on objectivity in Supply Chain Managers critically evaluating the best alternative for their current system. A critical factor which is a determinant in the success of cloud-computing lies in the ability to provide security to companies without sacrificing flexibility as a system. The infrastructure as well as policies are tenants in this endeavor and have come to the forefront of recent CIO concerns in adaptation of cloud based alternatives. Security of the data is paramount to many companies, of both confidential information regarding company intellectual property as well as client information. Cloud-based companies must maintain availability of data for their customers while ensuring the integrity of its security protocols before cloud computing is to garner hesitant adopters (Rajni, 2015, p. 43). IBM conducted a recent survey among top CIO's, interviewing them on the topic of cloud technology as it pertains to their future organization information technology strategy, and found that fifty-five percent are planning to implement cloud technology within their business in some form. The remaining forty-five percent cited security concerns as their main concern with implementing cloud technology including breach of

data as well as less control over applications they currently utilize (Shacklett, Next-Generation Cloud Technology for The Supply Chain, 2012, p. 19).

Cloud computing allows for a user to access a sophisticated infrastructure, including applications and services, through an online web portal anywhere with an internet connection. This function is known as Software as a Service, which has numerous benefits including increased visibility across the value chain in real-time on the web portal which can include demand from the market, movement of the product in transit, sales numbers of the product in real time, and real-time inventory status across the value chain (Singha, 2013, p. 124). There are varying definitions of cloud-computing available however there are underlying principles that define the foundation of cloud-computing. Cloud-computing conventionally, as stated by Jason Lango, “Includes on-demand self-service, broad network access, resource pooling (aka multitenancy), rapid elasticity, and measured service” (Lango, 2014, p. 55). Similarly, according to Gartner, an industry analyst firm, cloud computing as, “A style of computing where massively scalable IT-enabled capabilities are delivered as a service to external customers using Internet technologies” (Singh, 2009, p. 10). In the year 2011, Gartner’s analysis of the worldwide SaaS market, reported \$12.1 billion in annual revenue which was an increase of 20.7 percent from the previous year and projected by the year 2015 this number to reach \$21.3 billion (Farb, 2011, p. 14). Though Software as a Service (SaaS) is the most popular model, there exists additional model offerings such as Platform as a Service (PaaS) and Infrastructure as a Service (IaaS) (Wu, Cegielski, Hazen, & Hall, 2013, p. 26). These services are hosted on either public or private clouds: Private clouds are perceived to be more secure and built off company data centers for internal company use only but lack in flexibility; public clouds are hosted through third party providers offering additional flexibility but less security; hybrid clouds are a combination of the

two wherein some data is accessible publically while other portions are only available to internal business users (Jones & Schramm, 2011, p. 13). Introduction of the public cloud, as a platform to deploy applications and services, enables on-demand resources through third-party cloud service providers with capacity large enough to satisfy demand while lowering barriers to entry diminishing required initial investment which is not feasible for smaller or medium-size businesses (Lango, 2014, p. 55).

Software-as-a-Service CRM Solutions: The Future of CRM

In terms of CRM software, there are numerous cloud-based system offerings available to companies. Cloud computing as a service is a virtualized IT resource that comes in numerous forms and has proven to offer some advantages over traditional systems. This type of CRM solution model has grown exponentially since initially offered with countless service providers available, specializing in CRM solutions across every conceivable market segment. According to Market Intelligence & Consulting Institute, Software-as-a-Service cloud-based computing as a global market is in excess of 1.47 billion US dollars in 2014 (Chen, Chen, & Hsu, 2014, p. 6146). The benefits of real-time data visibility and entire value chain transparency has potential benefits that extend far beyond one business market segment. According to Gary Hanifan, the North American lead for Accenture's Operations group, "We'll see unprecedented real-time visibility, so that every single point on that supply chain simultaneously has the same information" (Blanchard, 2014, p. 29). Recently there has been a growing trend among small to medium size businesses who are adopting the cloud in an effort to eliminate internal information technology altogether and focus more on their key business (Shacklett, Cloud Computing, 2011, p. 16). In the competitive environment businesses operate today, arguably the greatest benefit of companies adopting cloud based systems lies in its ability to respond quickly in rapidly changing

environments, enhancing supply chain agility. Integration of CRM data with other information technology systems allows for coordination amongst all firms in the value chain and is key to optimize the supply chain (Hilletofth, 2011, p. 188). From the scope of supply chain management, agility refers to a company's ability to sense as well as respond to any environmental changes in real-time while maintaining their competitive advantage in the market (Wu, Cegielski, Hazen, & Hall, 2013, p. 26).

Demand-supply Chain Management (DSCM) and CRM; Focusing Downstream

Demand-supply Chain Management (DSCM) is the cross-road where demand chain management meets supply chain management which have traditionally been seen as two unique perspectives of the value chain for an organization (Hilletofth, 2011, p. 185). Though the concept has been posed since the early 90's only recently has the capabilities of information technology systems been available and sufficient to handle the complex data integration required to effectively adopt DCSM. Many experts identify SCM, NPD, and CRM systems as the three main components along with the integration of CRM and SRM processes in allowing supply chain managers to effectively run a Demand-supply Chain Management system (Hilletofth, 2011, pp. 185-186). As a software sector, supply chain management and procurement reached a total of 9.9 billion USD in the year 2014, a 10.8 percent growth from the previous year. More recently numerous other market segments have begun to identify the need to increase supply chain agility and flexibility. According to shippers surveyed in 2014 Software User Study, twenty-four percent have adopted a cloud computing type solution, twenty-seven percent had stated within twenty-four months they will be adopting such technology (McCrea, State of Cloud Computing: Defining itself in SCM 2014, 2014, p. 34). As noted by James A. Tompkins, the CEO of Tompkins International, "The culture of the customer defines the requirements of the supply

chain. These requirements dictate how supply chains need to be designed and operated” (Tompkins, 2014, p. 26). Thus, it can be surmised that adoption of CRM solutions will likely continue each year as customer expectations continue to shift, and Supply Chain Managers must continue to improve supply chain agility and flexibility.

In 2010, according to ARC Advisory Group, as far back as 2005 a trend among companies toward a focus on supply chain management as a whole emerged growing seven percent in five years with cloud based SaaS growing at an annual compound growth rate in excess of twenty percent over the same period (Planning in the Cloud: JDA Software Reshapes Supply Chain Management for Manufacturers, 2010). With many manufacturing companies outsourcing manufacturing to other countries such as China or Korea, supply chains began to include not only suppliers or manufacturers but other entities such as freight forwarders or customs brokers, or additional parties within the value chain which may cause a disruption in the ability to offer a product ‘Just-in-Time’ while avoiding excessive overstock. Cloud-based supply chain solutions offer a way to mitigate this through an established infrastructure of suppliers and trading partner’s setup as well as available to their customers immediately, thus alleviating the strain typically befallen unto the company (Shacklett, Is Supply Chain Management Emerging from the Clouds?, 2010, p. 35).

Leveraging Big Data: Integrating SCM and CRM

The total sales in this software market software delivered on a cloud-based platform grew a total of seventeen percent from the year before with licenses for traditional on-site supply chain management solutions grew only by 9 percent (McCrea, 2015 state of cloud computing: Nothing but "full forward", 2015, p. 30). This trend of companies leaning more toward the utilization of

cloud-based technology as opposed to traditional SCM software solutions is not new but has gained momentum in recent years. Estimates from Gartner have forty-percent of all supply chain applications being delivered in the “combined cloud”; a mixture of public, private and multi-tenant SaaS delivery methods; as soon as 2016 (McCrea, State of cloud computing: Sky's the limit., 2013, p. 52).

Through leveraging analytics of big data, manufacturers are able to monitor different aspects of the supply chain including fulfillment, transportation, supply planning, and demand planning (Blanchard, 2014, p. 29). Companies such as CEVA Logistics, who offer clients supply chain management solutions, have already begun to leverage cloud-computing to increase efficiency in supply chains. CEVA Logistics reduces overall costs, increases quality of customer service, improves speed of material, and increases the flow of information across the entire supply chain by utilizing their technology in improving the visibility as well as quality of information across all participants in a supply chain. Visibility across the value chain also offer manufacturer's insight into ways to diminish CO2 emissions and improve corporate environmental sustainability or meet new regulatory standards, while simultaneously eliminating waste as well as holding those within the value chain at a greater level of accountability for their carbon footprint (Peng & Shiang, 2014, p. 201).

IV. Discussion

It is clear that with the current fragmented hyper-competitive business market there is an inherent need for firms to engage in new relational marketing to develop an interactive relationship with profitable customers. In stark contrast to the fragmented nature of the business market, the most successful firms must adopt a structure wherein cross-functional pieces operate

in unison. Perhaps the best weapon firms can adopt to streamline the required processes which facilitate a relational marketing approach with its customers is Customer Relationship Management technology integrated into current company technology software. Successfully adopting as well as utilization of this technology requires an entire cultural shift in a firm toward customer centricity. This important theme is reiterated across all of the authors referenced in this study and is perhaps the largest contributor to the high percentage of companies who have implemented these technology systems experiencing results that are below their expectations. However, those who are able to successfully implement these systems in a manner that allows cross-functional collaboration have experienced tremendous improvement in operational efficiency as well as bottom-line profit margins.

The purpose behind this paper was in demonstrating how supply chain managers can benefit by recognizing, understanding, and leveraging the tools available in modern day CRM delivered on a SaaS platform regardless of the size of their organization or industry within which operate. In researching this topic, it has become apparent that there exists a plethora of research and industry examples discussing both CRM as well as SCM technology in the last two decades increasing exponentially as time progresses. However, in researching these technologies it became apparent that they have been viewed, in both industry and academia, as two separate independent systems that are utilized to assist in the operation of two functions of a firm's operations. In stark contrast to this apparent paradigm of delineating these two technologies and functions of a firm's operations, this paper demonstrates the need to redefine the traditional scope of supply chain management to include CRM, or those processes involving downstream in addition to upstream operations, in Demand-supply Chain Management.

Redefining the responsibilities of Supply Chain Managers to include downstream operations requires a shift in perspective of the duties, roles, and goals a firm holds toward these managers. The traditional metrics with which these managers are held accountable to are concerned with primarily operational efficiency and cost reduction. As a result of these metrics, efficiency is mistaken for operational effectiveness and short-term cost reductions take precedent over long-term business goals (Madhani, Demand Chain Management: Enhancing Customer Lifetime Value Through Integration of Marketing and Supply Chain Management, 2015, p. 9). This paper finds these traditional metrics need to be reevaluated and finds them to be outdated, framed too narrow, and unaligned the broader context of the firms overarching operational objectives.

V. Managerial Implications

Reviewing the literature available it is in my opinion that Demand-Supply Chain Management model should be at least a consideration in all organizations. Through analysis of the literature available, the adoption of this model is not necessarily easy and requires changes on the part of management in providing the framework to allow for successful implementation. While in theory the adoption and integration of CRM technology within any firm would garner information which in-turn would better equip the firm to create added value for their end consumer, ultimately improving their bottom-line. Though this paper recognizes that certain scenarios do exist where this is not the case in practice and in actuality, the fiduciary investment necessary may not be feasible or justifiable versus the potential benefits expected. However, even if the adoption of CRM software is not a viable option at the moment, there are benefits to understanding the technology available and strategic customer orientation mindset even if a firm does not initially adopt the IT infrastructure behind it.

First there needs to be a shift in the mindset of management towards its definition and understanding of the role Supply Chain Managers can play in an organization. Supply Chain Management professionals should be utilized by organizations as an important position that is best utilized when integrated with functions within the organization that deal with processes that impact both up and down the value chain. Redefining the role supply chain management plays in an organization allows for balancing both demand and supply to improve the entire value chain's responsiveness while minimizing costs through implementation of new innovative technologies and ideologies (Hilletofth, 2011, pp. 185-187). Debrasi Dey offers a simplistic definition of the term, "SCM is the management of upstream and downstream relationships in order to deliver superior customer value at less cost to the supply chain as a whole" (Dey, 2014, p. 48). Phrasing the definition of SCM to include the value added to the end customer will further cement this customer orientation. The processes which have in the past differentiated these different functions must not be viewed by managers as independent of one another but as cooperative and codependent (Hilletofth, 2011, p. 184). This new mindset redefines the competitive advantage of SCM beyond the traditional idea that it adds value through cost reduction to also include revenue enhancement (Madhani, Value Creation Through Integration of Supply Chain Management and Marketing Strategy, 2012, p. 8). Understanding this added value in SCM among those in management is the first step in changing the culture and structure of an organization.

Once an understanding of the relationship between demand and supply is acknowledged by management then there are numerous actions that need to be considered. Though each firm has nuances which may need to be considered, this paper seeks to pose a list of elements which ensures that pitfalls that stymie the majority of firms seeking to shift toward a Demand-Supply Chain model are avoided. These elements should not be viewed as a chronological progression

and in many cases different pieces will require actions that can be done in unison. Managers should use discretion in determining the chronological order that should be used dependent upon the factors specific to the firm. Each of these elements were discussed and synthesized as a result of analytically reviewing the literature used in this paper. It is important to note that through extensive research it became apparent that the majority of literature available either poses DSCM from a theoretical perspective or evaluates the topics separately. As Ryals and Rogers (2006) poignantly stated, “Substantial developments within SCM such as strategic procurement and marketing logistics remained largely unnoticed by the market (Madhani, Value Creation Through Integration of Supply Chain Management and Marketing Strategy, 2012, p. 8)”, and thus not in academia either. The elements posed by this paper are: Structure cooperation; Incentivize appropriately; Determine technology; Engage the customer. These elements are from a managerial perspective in terms of actions which can be taken and chooses to exclude elements beyond the realm with which management can form a direct action leading to a subsequent effect such as employee opinion, buy-in, or cultural change.

Structure Cooperation

In many firms the role of supply chain management focuses solely on optimizing the supply portion of the value chain and the customer, or demand, portion of the supply chain is handled by either the marketing or sales department. Structuring the firm in this manner, the entities that handle the supply chain management and demand chain management portion both operate independent of one another and self-optimize their area of the value chain. The cooperative collaboration through integration between a firm’s SCM and marketing functions is essential to capitalize on any potential improvements to service (Madhani, Demand Chain Management: Enhancing Customer Lifetime Value Through Integration of Marketing and Supply Chain

Management, 2015, p. 9). The divergence of these functions is prevalent in many firms and leads to further fragmentation between these functions, causing each to optimize independently of one another in different, at times adversarial, directions (Madhani, Value Creation Through Integration of Supply Chain Management and Marketing Strategy, 2012, p. 7). Researchers, as well as industry professionals, cite various factors which have caused this fragmented structure to become prevalent, however they all reference a misunderstanding of the role of supply chain management within a firm as an underlying issue. Supply Chain Management is typically viewed as cost effectiveness in these instances, with a focus on cost reduction on a short-term basis, with no regard toward long-term business goals (Madhani, Value Creation Through Integration of Supply Chain Management and Marketing Strategy, 2012, p. 8). However, even in proper understanding of SCM, without integration and collaboration the value chain cannot optimize nor capitalize on potential service improvements.

Adoption of the proposed definition of SCM discussed previously, will not alone produce optimal results. Though adopting a proper definition of SCM is a step in the right direction, SCM in isolation will only provide balance between the supply and demand. Supply chains that operate efficiently but do not take into account changes in the structure of the market often become inefficient since high-speed low-inventory supply chains are unable to quickly adapt to unexpected disruptions in demand. Thus a crucial piece of the equation, the customer-value proposition or what the customer perceives as valuable, is not a factor when SCM is viewed in isolation. Only through cooperative collaboration, not compliance, can supply chains become both efficient and simultaneously create customer value and satisfaction (Madhani, Demand Chain Management: Enhancing Customer Lifetime Value Through Integration of Marketing and Supply Chain Management, 2015, p. 9). There is a direct correlation between the efficiency of

the supplier relationship and how frequent useful information is shared across different functional areas of the firm. Failure of adequately integrating these functions has several possible implications on the effectiveness of the entire value chain.

The importance of aligning, through cooperative collaboration, the marketing and SCM function of a firm is reiterated in numerous studies. The importance of integrating marketing with SCM was also noted by Lummus et al. (2003) who examined the impact SCM actions have on marketing actions and visa-versa (Madhani, Demand Chain Management: Enhancing Customer Lifetime Value Through Integration of Marketing and Supply Chain Management, 2015, p. 9). Despite this and other similar literary works, Mentzer and Moon (2004) concluded that many firms have failed to recognize that without adequate understanding of demand, supply chain coordination is not possible (Madhani, Demand Chain Management: Enhancing Customer Lifetime Value Through Integration of Marketing and Supply Chain Management, 2015, p. 10). Consequently, these companies experience many negative impacts as a result of a mismatch between actual demand trends and their supply chain operations. This mismatch manifests in scenarios of frequent inventory stock outs or conversely a stockpiling of inventory as a result of supply chain managers ill-informed of the particular drivers behind the customer demand (Madhani, Demand Chain Management: Enhancing Customer Lifetime Value Through Integration of Marketing and Supply Chain Management, 2015, p. 10).

Incentivize Appropriately

As discussed in depth in the previous section of structuring cooperation, a common disconnect that exists among firms today lies between different functional parts of a firm and the impact they have on the entire supply chain operation. Evaluation of performance in this manner

negates the fundamental purpose of the value chain which lies in its ability to serve a consumer base in an efficient and effective manner. (Madhani, Demand Chain Management: Enhancing Customer Lifetime Value Through Integration of Marketing and Supply Chain Management, 2015, p. 8). Management must evaluate the current metrics with which managers are held accountable and ensure these metrics encourage behavior that reflect the overall goals of the entire value chain. The switch from SCM to a DSCM system shifts power from the supplier to the consumer and thus firms need to align itself with value-proposition from the end-consumer perspective (Madhani, Demand Chain Management: Enhancing Customer Lifetime Value Through Integration of Marketing and Supply Chain Management, 2015, p. 12). Metrics that encourage isolation or fragmentation of functional processes only work to perpetuate an environment that encourages fragmentation and self-optimization of each portion of a firm. Performance metrics management is held accountable must be based on metrics that encourage and reward actions which pair functional performance closely with that of the entire value chain.

One of the most frequent examples within firms where management performance is evaluated inadequately on the basis of inappropriate metrics is in the marketing and SCM departments of a firm. Marketing management tends to be evaluated on the basis of the total revenue created, translated into sales, over a given period of time. As a result, management in this department favors a high level of inventory to guarantee product availability on hand to process customer orders and not lose potential revenue. Conversely, supply chain managers are evaluated based on cost reductions, waste elimination, and inventory management performance metrics. Thus these managers strive to keep stock levels at the absolute minimum level which satisfies the current customer demand, work to eliminate overstock, and procure only the required amount to suffice demand levels at the current time in an effort to minimize waste and improve cash flow

(Madhani, Demand Chain Management: Enhancing Customer Lifetime Value Through Integration of Marketing and Supply Chain Management, 2015, p. 10).

Solving this mismatch requires realignment of incentives for employees based on the entire value chain performing optimally. Adoption of new performance incentives across different functions within a firm helps facilitate and sustain the strategic shift from a SCM to DSCM model. It is important to note that there are various methods managers can successfully develop and implement new performance incentives that align with the DSCM model. The following is one such method that is, in my opinion, the best method managers can use to develop and implement new performance incentives in the firm. First, management should establish and a cooperative cross-functional committee who is entrusted with managing the project to develop as well as establish the new performance metrics. This committee should consist of at least one upper management executive to represent each business function, and should designate, either through vote or appointment, committee designated positions: project manager, co-manager, and secretary.

In multi-national or firms with multiple strategic business units, the number of committees and whether sub-committee groups should also be formed is up to the firm's discretion. For instance, if a US based firm consisting of four strategic business units that has operations based out of China, the UK, and Germany could handle the committee structure in a few varying ways. One method would be to establish a head committee that operates out of the US and that consists of anywhere from one to four representatives for each SBU, in relation to each international operation location for each SBU. Another alternative structure the firm could implement would be to establish a head committee structure in the US with each SBU designating one representative regardless of the SBU's international presence. However, in both

of these structures, sub-committee groups for each SBU should be established in addition to the head US committee. These sub-committees should follow the original representative structure wherein the committee consists of at least one upper management executive from each business function and also has the aforementioned committee designated positions.

The group should conduct an initial examination of the current incentive programs to delineate the logic behind the various metrics that are in-place. Once a list is compiled of the various incentive programs the group should evaluate individually each of these based on the established performance metrics for the entire firm and propose a revised list for each. Once the revised list for each function is developed then each representative should then conduct a similar meeting with the immediate subordinates within their particular function in the firm. These subordinates should then repeat the process until all various levels of employees have been represented, relaying the information up the management chain. A subsequent meeting of the original cross-functional group should evaluate any revisions posed for each function and establish a final draft of the final incentive programs. Additionally, the group should establish a timeline for implementing the new revised incentives programs and each representative should distribute the final draft, the logical reasoning behind any unimplemented revision proposals, and timeline for implementation, throughout their respective function in the same manner as before.

The original group should evaluate the new incentive programs implemented in comparison to changes in relevant performance data on a consistent basis. In the initial stages this should be done more frequently to ensure the data collected shows any change in the relevant metric data in the manner in which the respective incentive program intended. Once the intended relational trend remains constant toward the intended outcome consistently, the number of times this original group meets should be scaled back respectively. However, regardless of

this consistent trend, the original group should meet at the minimum twice annually and any topics or suggestions discussed should then be relayed by each representative to their respective functional group and distributed in the same manner as previously discussed. Utilizing this method of top-down to bottom-up approach has numerous advantages over a traditional strictly top-down implementation. The traditional top-down implementation may lead to compliance but not commitment, adherence but not adoption and thus this approach may lead to dissolution amongst certain employees who feel unappreciated or unheard. Instead, inclusion of the bottom-up approach helps to minimize resistance, enforces importance of each employee's ideas, encourages candid discussion within the firm and helps to foster interpersonal relationships between managers and their immediate subordinates at all levels within the firm. In a similar fashion to the shift from SCM to DSCM, this development and integration model ensures all participants within the system are considered and holds those up the chain accountable to those below, who tend to ultimately be more impacted as a result of these changes.

Determine Technology

As early as 1997, the International Centre for Competitive Excellence, which has since adopted the name Global Supply Chain Forum, recognized eight processes of the supply chain: customer service management, e-fulfillment, e-procurement, demand management, product development as well as commercialization, reverse logistics, and manufacturing flow management (Dey, 2014, p. 48). The IT aspect required in the transition from an SCM model to DSCM model is extensive and requires considerable thought to be effective. Many of the research done in DSCM deal with technology from a theoretical perspective likely due to its complexity or unique specificity to each individual firm. Delineating the processes which build the foundation of SCM as well as DCM, is crucial to better understand both the technology a

firm has in-place currently that may assist in each different process as well as where potential opportunities for additional technological improvements when a firm undergoes the shift toward adoption of a DSCM system.

One school of thought views DCM as a mainly IT led strategic concept which is based on utilizing technology to enable firms as well as their resellers to monitor and respond to changes that affect demand. Following this theory, DCM is further broken down into three separate elements and their processes. This triad, as defined by Deshmukh and Mohan (2016), keeps consumers at the top which is subsequently followed by competitors and channel partners, follows the philosophy of customer centrality in the focal firm (Deshmukh & Mohan, 2016, p. 25). The first linkage is CRM, which deals with gather insights into the consumers' mind. The second linkage is Marketing Intelligence (MI) which deals directly with generation of intelligence from competitors and ultimately the internal business practices of the firm. The last interlinkage lies among the firm and its channel partners in Supplier Relationship Management (SRM), which deals with the intermediation and interrelationships that exist between a firm and its network of suppliers. Though researchers have suggested different theories as to the best method to adopt in developing a customer-driven supply chain or demand driven supply network, they all stress the integration of these three pieces in some form or capacity (Deshmukh & Mohan, 2016, p. 25).

For my purposes, engagement with those downstream in the supply chain, is primarily facilitated through the use of the CRM system which is the first pillar of developing a DSCM approach (Deshmukh & Mohan, 2016, p. 25). Firms adopting CRM must set realistic expectations and deliverable objectives they hope to achieve which should be determined through cross-functional collaboration and cooperation prior to this stage. Understanding new

technological improvements is essential for any firm to capitalize on the technology currently available through software updates or add-ons and any future technology purchases. As noted in the work of Debrasi Dey (2014), the SCM philosophy is that, “Total performance of the entire supply chain is enhanced when we simultaneously optimize all the links in the chain as compared to the resulting total performance when each individual link is separately optimized” (Dey, 2014, p. 48). Adopting this perspective when evaluating future technology purchases is crucial to successfully leveraging a firm’s current technology assets and emphasis that integration of IT systems is paramount. Once this is determined there are certain items a firm must consider before implementing one of these systems in determining which software will best fulfill the needs of the firm: integrate; update; accommodate.

The first aspect, integrate, refers to the ability for the CRM system to integrate data across any other systems the firm may be currently using. Greg Friedman, the founder of Juxure, a well-known CRM system, “True integration, to me, is where an application works on the same data that another may be using” (Schulaka, 2013, p. 17). This can include whether the system is cross-compatible with the systems currently in use or the ease of importing data from other systems. Recent integration of the internet has proliferated previous IT business models which has resulted in an immense restructuring of previous IT infrastructures. As a result, the concept of E-SCM has arisen, which is also known as “Supply Chain Integration”, which refers to the interaction between the internet and supply chain management. This shift toward E-SCM has the potential to integrate key business processes through the suppliers to the ultimate end user to provide information, products, and services which add value for these end customers or other stakeholders (Dey, 2014, pp. 48-49). Utilization of the internet and true data integration unilaterally across all systems in the firm allows for CRM systems to act as a hub of sorts

wherein those within the firm can centralize data from multiple systems into one dashboard accessible by decision makers in every function of the firm (Schulaka, 2013, p. 17). This is only achievable through adopting systems that are able to be integrated or transfer data cross-compatibly with other systems that are used within the firm.

Firms who have legacy systems should pay particular attention to this process since many legacy systems were created specifically for the firm with little emphasis on integration. As a result, the process involved in either converting legacy system files to a sharable file format or hiring a software firm to add-in cross code which allows software to recognize legacy system file formats can quickly incur costs through added consulting fees or man-hours in a firm's IT department. As a result, management should consider the IT department staff required in daily operations to ensure capacity exists to handle the additional requirements necessary to facilitate the transition without disruption of daily operations. For firms who have multiple legacy systems, it is imperative adoption of new software be handled as a project between IT with cooperation from a cross-functional group due to the impact a transition has on different functions in the organization.

Update, which is the second aspect, deals directly with the deliverable method for updating the software system and how that may impact the operations of the firm. As with any software, updates are paramount to handle software coding issues, improve functionality of the software, and benefit from any additional functions not included in the initial installation package. This necessary aspect of software can have unintended consequences on a firm from an operational perspective and thus the method in which updates are developed as well as distributed network wide should be a consideration among management in a firm when deciding which software provider and platform to adopt. Whether the system goes down for maintenance system-wide

once a week to install new updates or if the IT department is responsible for delivering the update on an internal server or on each computer individually, this process is sometimes overlooked but can incur costs rapidly either in downtime or human capital.

Custom software that is hosted on a firm's internal server and developed for the firm requires the most fiduciary and human capital expenditure. Software developed this way can be built either through commissioning a third-party company to develop the software or created internally by a firm's IT department. Either of these commissioned methods require maintenance from a firm's employees or from the third-party developer which allows for more customization. However, this method requires updates to be either facilitated through the IT department specialists with familiarity in the software architecture which requires additional IT capacity, or through the third-party developer which puts the firm at the mercy of the developer's timeline and billing cost for each update. Custom software packages do allow for additional security since the software is hosted on the private servers of either the third-party developer, or most likely, on the internal servers owned and maintained on-site at a firm's facility. Though if they are hosted on servers maintained by the firm this does require an IT department well-versed in the maintenance of the necessary equipment as well as a considerable initial fiduciary expenditure to acquire the necessary hardware. As a result, these types of software adoptions require the most human and capital expenditure.

In recent years as cloud-integration has gained prevalence, the emergence of a new software model has garnered considerable attention, as a method to minimize the costs incurred in custom software adoption. SaaS model, as discussed previously in this paper, is the most popular cloud-based model for the delivery of CRM software. In the year 2011, a report released by Gartner concluded that SaaS accounted for 32 percent of the entire CRM market's total annual revenue

and forecasted the steady growth of this type of SaaS CRM software (Farb, 2011, p. 14). Though other software models do exist, the multitude of variations reach beyond the scope of this paper, thus for our purposes we will examine just these two models. This software model outsources both the hosting as well as the updates of software to a third-party software developer. There are however disadvantages associated with this model, such as less customization and adherence to the timeline as determined by the third-party developer in terms of updates or maintenance to the software package. Management should evaluate potential software developers as well as the deliverable product when considering this type of software, both in reputation and capacity, to ensure the developer is properly equipped to handle the requirements of the firm. In addition, management should also bear in mind the frequency of and update process adopted by the developer as key elements prior to a decision being made. Whether the system is rendered entirely inoperable during an update or if the developer stages functional updates so that while some functions may become inoperable the entire system remains functional to a degree is an important aspect to consider. Likewise, the frequency of updates, whether sporadic or on a specific time period schedule, can help management determine whether a developer would be able to accommodate the needs of the firm (Farb, 2011, p. 14). However, using a SaaS model effectively eliminates a large portion of the human and capital expenditures required in a custom software adoption model. Since the third party developer hosts the software on their internal server the initial capital expenditure required in a firm hosting the software internally and the added human capital cost for subsequent maintenance or development is eliminated. As a result, though SaaS model puts companies at the mercy of the software developer's timelines, it requires the least amount of human and capital expenditures.

Accommodate is the last aspect to consider and the broadest topic of the three. This deals with the ability of the system to accommodate current as well as additional data capacity as the business expands, the availability of support to handle IT issues as they arise, the data encryption provided is in-line with the requirements of the firm and whether the developer's hardware is able to effectively handle current and future capacity requirements (Farb, 2011, p. 14). Firms should consider all of these aspects, as well as any possible repercussions that may arise if the developer is unable to successfully satisfy each of these, before choosing a software developer. Management needs to do their due diligence and bear in mind the tremendous implications which arise from switching providers after implementation. The decision to switch after implementation or mid-way further complicates internal employee buy-in and can inadvertently cause customer dissatisfaction thus causing damage to the brand image which may be irreparable.

Hardware servers hosting the data should be able to handle current data capacity, as well as the projected growth rates for the foreseeable future, in a manner that allows expedient and efficient data accessibility by the current amount of users simultaneously. Management should evaluate the hardware capabilities of a developer based upon a firm's projected growth rates to ensure as the firm grows the host server will handle the excess capacity. This term is also referred to as scalability and if the current workload required by a firm is near the developer's hardware full workload capacity the firm can quickly experience service failures which render the software useless (Farb, 2011, p. 14). If a system is to become nonfunctional at any point in a global business the potential benefits can quickly become surmounted by negative ramifications. For example, if a firm were to process 200,000 transactions per day with 5% from new business and its CRM system were to be rendered inoperable for two days there exists a potential for nearly 190,000 transactions from current customers and 10,000 new customer's information

absent in the data utilized to determine market demand trends, customer profiles, marketing campaigns, shoppers club points accrued, etc.

Similarly, the infrastructure set-up by the developer for resolving IT solutions, is a crucial element which must be examined prior to management determining which developer to use. Depending on the nature of the firm's business, this can also include the hours of operation, the number of languages available, capacity available at any given time, communication method and delegation method depending on severity of the IT issue. For firm's who operate globally, more extensive IT support is a crucial requirement, to ensure that problems at any geographical location in which the company has operations can be resolved in a swift efficient manner, regardless of the time of day or language spoken in the region (Farb, 2011, p. 14). Though a firm's internal IT services may be able to assist in basic troubleshooting issues that may arise from user interface misunderstandings or errors, SaaS model effectively relinquishes an IT's ability to handle larger software architecture issues placing a firm at the mercy of the developers support protocols and established system.

The last element is a critical element in today's global marketplace and will only become more paramount in management decisions in the future. This element safeguards the brand image and integrity of a firm to its end-consumer. Arguably more important in the increasingly fragmented global marketplace firms are operating in, the integrity and brand image of a firm, if alienated in the eyes of its consumer base, has devastating ramifications which can quickly lead to financially stable firms to declare bankruptcy or become engulfed in civil litigations. Ensuring the developer adheres to specific security protocols as deemed appropriate by the firm should a catalyst in management's decision to use a particular developer. These security protocols include the encryption protocols of the data itself either in transmittal within the firm or stored within the

hardware in the developer's facility, the policy of the developer in the sale or sharing with third-parties, and the safety protocols in place by the developer should any information be inadvertently obtained by an unauthorized third-party through unethical or accidental means (Farb, 2011, p. 14). Today's increasingly global business environment has become increasingly saturated with customer's personal information and the firms entrusted with this must do their due diligence in safeguarding this information.

After considerable analysis, it is my opinion that if properly chosen based on the aforementioned criteria, the majority of firms will experience the greatest potential benefits from choosing to adopt a CRM software solution that is delivered using the SaaS model, and further that those who instead decide to adopt a custom software model should only do so after carefully considering all SaaS options available. As supply chains become increasingly customer oriented there exists an increasing need for technology to further assist in the collection, storage, and synthesis of data collected at points in the supply chain (Farb, 2011, p. 14). Recently the integration of internet-enabled technology has further solidified the inherent need as the amount of data collected continues to increase exponentially. In the absence of technology to collect, store, synthesize and provide accessibility to this synthesized information at appropriate functions within the organization this collected data is rendered utterly useless to the firm. The inherent value of the data lies in the synthesis of the data to assist in value creation to the end consumer, the driver of DSCM and the purpose in which Supply Chains are developed to serve.

Engage The Customer

A shift from SCM to DSCM model requires development of the firm's strategy so it is customer centric; based upon how value is created, delivered, and coordinated in a manner that is

cost-effective and optimizes the resources of a firm to develop a competitive advantage from the end-customer's perspective (Hilletofth, 2011, p. 185). One of the original advocates for this strategic orientation, Edith Penrose (1959) noted that tend to experience growth when their attention is focused toward the end-consumer and was quoted stating, "Resources gain economic value from their use by customers (Priem & Swink, 2012, p. 10)." Near half a century later, in 1997, the concept of 'demand chain efficiency' emerged and two years later Christopher (1999) argued that Supply Chain Management should be instead termed "Demand Chain Management" since it is driven not from suppliers but rather market demand (Deshmukh & Mohan, 2016, p. 23). The strategic approach, termed, 'Demand-side strategy', is developed through a firm focused downstream toward product markets and the end consumer to develop management decisions that increase value within a particular targeted value system (Frow & Payne, 2009, p. 8). Engagement with the targeted direct and indirect consumer is an essential required element and must be assimilated into the planning as well as the development process of the DSCM supply chain to succeed [(Frow & Payne, 2009, p. 10), (Deshmukh & Mohan, 2016, p. 23)].

Firms that have adopted this strategic model have enhanced competitiveness and improvement in their demand chain performance which leads to increased revenues with reduced costs (Hilletofth, 2011, pp. 188-189). This model requires a perspective that is counterintuitive to the traditional operation motus operandi in firms and as a result, if not properly vetted within the firm prior to implementation, is likely to be unsuccessfully assimilated within a firm. One fundamental challenge organizations will undoubtedly face is an internal resistance to this change and combatting direct as well as indirect resistance is a necessity in successful adoption of new ideals or culture within a firm (Cosgriff, 2016, p. 29).

Concluding Arguments

As stated previously, the first purpose behind this paper is to examine the importance of CRM strategically in engagement of end-consumers to develop long-term mutually beneficial relationships. CRM strategy is at its core a strategic approach to business wherein the focal point of a firm lies in creating value to its end consumer. CRM software is simply a tool to help assist a firm in achieving this strategy in an efficient and effective manner. If properly utilized within a firm, it is the best tool available in facilitating engagement with the end consumer, gaining an understanding of who they actually are, how they determine value in the firm's product, and determining which type of customer has the greatest potential long-term value to the firm. All of these elements are crucial in focusing limited resources in establishing long-term relationships with the most profitable segment of customers for a firm and can be used in understanding which products have the greatest potential returns. However, without the adoption of CRM strategy within a firm, implementation of CRM software will be of little value to a firm. Thus, it is in my opinion that successful CRM software implementation requires a view of CRM software as a means to an end, not the end itself.

The second purpose of this paper was to examine the potential benefits of investing in CRM software delivered on a SaaS service model as opposed to other software models. In an attempt to delineate both the pros and cons of two prevalent software models used in CRM today, SaaS and custom software, I posed three aspects that differentiate these models: integrate, update, accommodate. Based on these three aspects, it is apparent that the SaaS service model can offer the greatest potential for successful integration across multiple systems, the most efficient method in distributing updates system-wide, and offers the available capacity as well as security protocols necessary to accommodate the majority of firm's needs. Additionally, adoption of this service model requires minimal human and capital expenses, which minimizes

investment in depreciating capital while enabling a firm to benefit from the capital investment, IT support expertise, and service improvements developed by the other firm. As long as the developer chosen by a firm is carefully considered by a management based on the guidelines outlined in the aforementioned section, firms should utilize this service model instead of the custom software development model.

The last purpose of this paper was to explore how CRM software delivered utilizing the SaaS service model can shape all aspects of SCM as well as help in facilitating a shift from SCM to Demand-supply Chain Management within a firm. In the marketplace businesses operate within today there exists an inherent need for firms to alter the approach traditional in SCM, focusing upstream, to one whose focus lies downstream toward value creation with the end consumer and subsequent alignment of suppliers toward the end consumer. Back in 2006, an SAP insight report surmised, based on analyst comments, industry pooling, and existing customer studies, that implementation of DSCM can generate lucrative outcomes for firms (Deshmukh & Mohan, 2016, p. 27). Fast-forward a decade and the market environment which bequeathed this initial shift in examining this new ideology has only become more strenuous, competitive and further fragmented. Furthermore, technological advancements have resulted in a new type of consumer that is more knowledgeable, has substitute products easily accessible, more interactive, and thus requires more from firms than ever before.

Though an extensive amount of literary content exists on each of these topics individually, little research has been conducted that examine the necessary steps management should take to facilitate integration of these functions and their subsequent IT components. This paper filled this literary void in the development of the S.T.E.P. model which can assist management in facilitating the shift from a SCM model towards a DSCM model. This shift from

Supply Chain Management to Demand-supply Chain Management has and will continue to allow firms to differentiate in the increasingly fragmented and competitive global marketplace. Though research has pointed to shifting in customer demands and lucrative opportunities available to firms who adopt this model, many firms have simply overlooked these studies. This has been proven in a recent examination of the leading firms across multiple industries that currently are using a DSCM model. Firms using the DSCM model all have bottom-line improvements with 5-7% higher profit margins and 10% higher revenue than that of their competitors (Deshmukh & Mohan, 2016, p. 27). It is my belief that the key to establish and maintain a sustainable competitive advantage lies in the firm's ability to cultivate interactive long-term relationships with their most profitable customers. Firms who shift toward DSCM models, driven by CRM software delivered on SaaS platforms, provide themselves with the optimal conditions necessary in establishing these relationships and as a result, are better able to create a sustainable competitive advantage.

References

- Cosgriff, M. (2016). Next Generation Blueprints. *Journal of Financial Planning*, 29(9), 27-29.
Retrieved from
<http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,uid&db=bft&AN=118031053&site=ehost-live&scope=site>
- Deshmukh, K. A., & Mohan, A. (2016, March). Demand Chain Management: The Marketing and Supply Chain Interface Redefined. *IUP Journal of Supply Chain Management*, 13(1), 20-36. Retrieved from
<http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,uid&db=buh&AN=114194960&site=ehost-live&scope=site>
- Dey, D. (2014). e-Supply Chain Management-Future Focus. *International Journal of Business Insights & Transformation*, 8(1), 48-58.
- Farb, B. (2011). Cloud Expected to Keep Rising. *CRM Magazine*, 15(9), 14.
- Frow, P., & Payne, A. (2009). Customer Relationship Management: A Strategic Perspective. *Journal of Business Marketing Management*, 3(1), 7-27. doi:10.1007/s12087-008-0035-8
- Hilletoft, P. (2011). Demand-supply Chain Management: Industrial survival recipe for new Decade. *Industrial Management & Data Systems*, 111(2), 184-211.
doi:<http://dx.doi.org/10.1108/0263557111115137>
- Madhani, P. M. (2012, March). Value Creation Through Integration of Supply Chain Management and Marketing Strategy. *IUP Journal of Business Strategy*, 9(1), 7-26.
Retrieved from

<http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,uid&db=buh&AN=78120150&site=ehost-live&scope=site>

Madhani, P. M. (2015). Demand Chain Management: Enhancing Customer Lifetime Value Through Integration of Marketing and Supply Chain Management. *IUP Journal of Business Strategy*, 12(3), 7-26. Retrieved from

<http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,uid&db=buh&AN=11831296&site=ehost-live&scope=site>

Mandic, M., & Vransevic, T. (2012, June 13-16). Successful Customer Relationship Management Implementation. *An Enterprise Odyssey. International Conference Proceedings* (pp. 1206-1215). Zagreb: University of Zagreb, Faculty of Economics and Business. Retrieved October 6, 2016, from

<http://search.proquest.com/docview/1350307906?accountid=9253>

Nguyen, B., & Mutum, D. S. (2012). A Review of Customer Relationship Management: Successes, Advances, Pitfalls and Futures. *Business Process Management Journal*, 18(3), 400-419. doi:<http://dx.doi.org/10.1108/14637151211232614>

Priem, R. L., & Swink, M. (2012, Apr). A Demand-side Perspective on Supply Chain Management. *Journal of Supply Chain Management*, 48(2), 7-13. doi:10.1111/j.1745-493X.2012.03264.x

Schulaka, C. (2013). Greg Friedman on Successful Mergers, Data Nirvana, and the Future of CRM. *Journal of Financial Planning*, 26(7), 16-19. Retrieved from

<http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,uid&db=bft&AN=88935220&site=ehost-live&scope=site>

Wang, Y., & Hui, F. (2012). Customer Relationship Management Capabilities. *Management Decision*, 50(1), 115-129. doi:<http://dx.doi.org/10.1108/00251741211194903>