

Demand chain management flashcard



**ASSIGN
BUSTER**

1. Introduction

Demand chain management can be seen as a further development to the existing supply chain management theory. Demand chain is essentially a concept that focuses more on the market need than on the efficiency of supplying the product.

This concept is becoming more relevant as manufacturers strive to be more competitive by adopting mass customization approach. To do this, manufacturers require information about what the customers want. This information will be transmitted to the production floor to produce according to customer needs. Due to the fact that customers may not be willing to reveal sensitive information or able to describe their wants in full details for the manufacturers to make timely and effective decision, demand chain management concept remains a challenge to implement. How can a manufacturer make full use of information, be it partial or full information to determine its operations management is the key factor to successful adoption.

As this is a relatively new research that is being conducted, the research papers are relatively few compared to the rest of the well established concepts in operation management. Nevertheless, the decision to be made in this topic is about who should adopt demand chain management, what are the important factors that will make or break the implementation.

2. Literature Review

2. 1 Demand Chain Management (DCM) in manufacturing and services: web-based integration, drivers and performance

This paper researched the relationship between demand and supply chain integration and the benefits that it contributed to a manufacturer and a service provider.

Demand chain management is essentially linking up customers and suppliers of a firm with the firm's operations. However, this concept did not take off until the internet technology was in place. DCM requires both upstream and downstream integrations among different partners of the firm. In order for this to make economic benefits, the information that is being transmitted has to be cheap, complete information and real time for use in supply chain forecasting, planning, scheduling and execution. Hence one of the key drivers in DCM is web-based technology.

The economic benefits from successful DCM implementation are plenty. As a result of efficient sharing of information right from the customers to the suppliers, this could provide tremendous savings in the supply chain in terms of reduction in inventories, improved logistic communications, the ability to serve the customers better by meeting their demand on time through better forecasting and reduction of non-value added activities.

Despite the benefits, DCM has its flaws as well. One important factor to note when implementing this concept is that distorted information in any path along the supply chain can lead to disastrous consequences such as loss of revenue, poor production planning.

In the author's work, a strategy matrix (Model A to D) was developed to divide the degree of internet based of integration for demand and supply. For Model A, there was little or no web based integration, model D was at the other end, while Model B integration was with suppliers and Model C with customers. The first set of hypothesis tested showed results that integration has direct relationship with performance of the company for both manufacturer and service provider. Only difference was that service business performance will not be affected by full demand integration (Model D).

The second set of hypothesis obtained results suggesting that the key drivers to demand chain integration were anticipated rational efficiency in supply chain and new markets access. The factors such as external pressure and bandwagon effect played little role.

Based on the results of both hypotheses, the results showed that DCM played an important role to manufacturers although this did not apply to service provider. Possible explanation is the diverse category of service businesses available; some needed more inventories than the other. However the most important insight provided was that when upstream pressure to integrate was present, the companies will adopt the integration. Conversely, companies will only integrate downstream if the benefits outweighed the cost. Hence, a manufacturer is likely to implement upstream integration prior to downstream integration.

2. 2 Robust Planning: A new paradigm for demand chain planning

This paper agreed with other research papers that supply chain management (SCM) and demand chain management (DCM) will be able to deliver better

<https://assignbuster.com/demand-chain-management-flashcard/>

performance in the supply chains efficiency as well as meeting customers demand. However it argued that the sources of uncertainty in the process of the chain were not properly taken care of. In practice, uncertainty is usually avoided by asking the user to state the inventory level point or asking for every single customer detail to allow detailed planning.

This is termed pure deterministic planning methods. However, any deviation from the expected data will result in disruption to the supply chain and longer lead time. The cause of this problem stated is the bullwhip effect which is due to poor forecasting methods. Any variation in the demand at the consumer level will result in variation in stock level and lead time which are not planned for. This resulted in variation on overall performance as well. The commonly used approaches of scheduling of orders in great details, at fast pace and complex supply chain have reached its bottleneck in today's environment.

According to the author, sources of uncertainty are found at different level namely strategic, tactical and operational. The proposed paradigm called robust planning falls into the tactical level where sufficient time is allowed for the manufacturer to take steps to satisfy the demand through planning that will obtain more predictable and stable results. This is done through assessment of the supply and demand chain at tactical level using a simulation known as Monte Carlo. The objective of the whole simulation is to find an optimal level where there is minimal re-planning to the schedule or to find the decision that yields the lowest variability on the performance measures by taking into account variability of uncertain factors eg customer service level as well as expected value. In short, it allows the manager to

find the optimal trade off level between satisfying demand and keeping sufficient buffer stock.

To show the actual effects of robust planning, the author conducted a case study on a chemical manufacturer that has global operations. The manufacturer has reduced its supply chain inventory by more than half and more inventories stored in the upstream. This allows inventories to be converted to other products easily and less costly yet it does not reduce customer service level. Another major effect was contingency planning. The manufacturer took into account alternative plans available if there were unexpected events occurring, thus it can change its plan faster. Lastly, the planning efforts of the firm have decreased substantially by 50%, mainly in re-planning stages. By predicting unexpected and expected events using probabilistic planning algorithms, it allows more accurate, despite more cumbersome initial planning, information for decision making to reduce re-planning.

2. 3 Analysis and design of focused demand chains

Global competition has taken place in every industry. To remain competitive, a manufacturer has to tailor its demand chain strategy to service its customers. Hence the paper described how a UK lighting company adopted focused demand chain in 2 phases to gain competitive advantage in a commodity product.

The key is to segment the types of demand chain into 5 parameters known as the DMV3 (duration of product life cycle, lead time for delivery, volume, variety and variability) Categorization allows the company to identify

<https://assignbuster.com/demand-chain-management-flashcard/>

production strategy of each product to maximize its efficiency in the demand chain.

Prior to the changes to the operations, the company adopted traditional function approach where all products were treated equally using the push principle driven by MRP and did not take account into the DMV3. Suppliers were chosen based on price and quality and there were no loyalty to a particular supplier.

Subsequent to the improvements in Phase one, suppliers' base consolidated to 100. The focus on demand chain has turned to cost competitiveness for high volume products using Kanban pull strategy and high service level for low volume products using MRP push strategy.

The benefits were numerous. Supplier base reduction allowed the company to achieve savings through economies of scale in purchasing and build up supplier relationship for efficient communications. This resulted in less unnecessary inventory, unnecessary transportation and processing. More importantly, the improvements allowed the company to introduce new products with shorter lead time by involving the suppliers at the designing stage which resulted in more responsiveness to customer's orders.

In phase 2, the focused was on customizing demand chain strategy for each product based on each of the DMV3 variable. Customization allowed the company to focus on the key competencies developed in phase 1 to achieve the desired goals in efficiency.

The implementation success is highly dependent on the categorization of the variable for each product line. A wrong categorization may lead to failure in the demand chain strategy chosen. However, the paper provided empirical studies on classification and these are highly transferable to another industry on a generic context.

2. 4 Demand Chain Management Theory: constraints and development from global aerospace supply web

This paper develops an empirical approach to determine where the strategic capabilities should be in the supply chains of a global aerospace firm.

Original equipment manufacturers (OEM) were the dominant players in supply chain management. But the internet has transformed them to a new way of operation. As efficiency is highly regarded, OEM outsourced non core activities of the firm to sub contractors. This resulted in a new form of operation management.

The author studied the aerospace industry and found that up to 70% of final value is outsourced. As such, strategic capabilities of the firm has been questioned and how to ensure proper coordination of capabilities between the organization and sub contractors.

To identify strategic capabilities where should be owned on the supply chain, the author introduced the importance of Transaction cost Economics (TCE) and resource based view (RBV) of the firm. TCE essentially enables the firm to identify where the constraints of the demand chains are while Resourced based view helped the firm identify the capabilities. With these, the

manufacturer is able to make strategic planning on where their capabilities lie, given a set of industry drivers for change.

2. 5 From Supply to demand chain management: Efficiency and customer satisfaction

The author researched into companies on how to satisfy both supply chain efficiency and customer satisfaction by studying Nokia which is in a fast paced industry. The research found that good relationship with customers translated into better quality information, higher efficiency and generate higher customer satisfactions which in turn generate better relationship with customers. It is a cycle. The implication of this research was that a successful DCM required tailoring according to needs, situations and developed the process backwards with customers at the beginning of the process in DCM.

2. 6 From Supply Chain to demand Chain: the role of lead time reduction in improving demand chain performance

The paper identified the need to reduce on the lead time prior to any demand chain strategy using a case study company. The author found that firms will not be able to meet customer request even though they focus on customers first if their supply chains are not efficient in the first place. The empirical testing showed that DCM is not for every firm. Firms without demand variability should focus on supply chain efficiency while those facing marketing variability should aim for full customer information transfer. Firms with short lead time should obtain demand information quickly to improve on

their competitive edge with those with long lead time should integrate their planning and forecast with customers.

2. 7 DCM: An integrative approach in automotive retailing

Most companies look for a solution that can solve all the supply chain problems. Also there were many papers written to develop a solution for a real case company. However there were limited few that tailored the research solution to a specific company. This paper used an integrative approach to study the various aspects of an organization strategy such as strategic cost management, marketing, policy and process-based lean thinking. An automotive retailer was tested. The author found that company was able to adopt a holistic approach by integrating all the 4 management areas can contribute towards a competitive advantage. However the results were not conclusive and requires more testing on other companies outside of UK.

3. Discussion

The research papers presented ideas of various factors that would make a demand chain management strategy successful and will result in substantial improvements and cost savings. The key idea is that customers demand should be taken care of. In the case studies done, the manufacturer ranged from complex operations such as aerospace to less complex operations such as lightings. These provided a broad overview of how DCM can be applied across different industries. However, the research papers outlined that service providers do not benefit from such concept due to minimal inventory.

There were few research conducted on services using the DCM system. Hence one area to further research into will be the service area.

The second area of research worth further pondering is the pitfalls of implementing such system into a company. All the research cases were mainly success factors. There could be some companies that failed to implement it successfully that could provide valuable lessons.

Thirdly, a good system such as DCM requires the involvement of every stakeholder in the company. This is likely to be costly. There should be research that goes into analysing quantitative cost and benefit data of implementing such as system could trigger thoughts if every company can afford to implement such a system.

Lastly, there are numerous concepts available from various journals. They ranged from traditional Total Quality Management, JIT to supply chain and now demand chain management. Some companies may have already adopted a system that is currently in use. A research that goes into how companies transformed or improved on existing system to DCM could provide some insights to companies on how to do it.

Conclusion

Research papers from journals provided new ideas on the new changes in the industry. This could be an important source of knowledge and management should keep in touch with the new developments using such sources as it concerns their competitiveness.

Another lesson learnt was that to understand a concept, one must not look at just one point of view. From these research papers, every paper will touch on different aspects of view although some duplicate one another. As a result, one will understand the benefits and the flaws of the concept so as to plan for contingencies.

In terms of learning about operations management, this topic is always evolving. New ideas are always coming out due to changes in the industry and the global trade. However, the foundation concepts remain efficient supply chain and serving the customers demand with the best quality and shortest lead time. New ideas are an extension to the foundation concepts; hence one has to understand the foundation concepts well before any new concepts can be extended and applied.

This paper on demand chain management provided me insight into how manufacturers decide on the system that they choose. Reading research papers trigger thoughts on the complexity of operations in the real environment. In fact operation management is a well thought process that involves every single level of management and it has the ability to build company competitiveness or destroy it with inefficiency. Good example is Toyota. With an efficient operation, it has become a key area of competitiveness that others could not imitate. Based on this fact, I would certainly engage in more thorough thoughts in operation management if I work in manufacturing companies or if I were to own one in future.

The biggest problem in doing this research is the limited amount of information on demand chain management as the research topic is quite

new compared to more established concepts such as JIT or supply chain management. However, limited research meant that there are more areas for development for future research.

Another problem encountered will be the difficulty to understand the problems and benefits of the research topic thoroughly due to inexperience in industry practices. A concept may appear so good that one will feel very manufacturers should adopt the same practices. However, the difficulty to implement the concept, when an existing system is already in place, may result in company to lose valuable customers and time. These problems will only be understood by an industry practitioner or someone who knows the industry well. It is certainly a challenge to understand the jargon used in the research papers and the ideas that are being presented.