Review Article

Pharmaceutical Supply Chain Management

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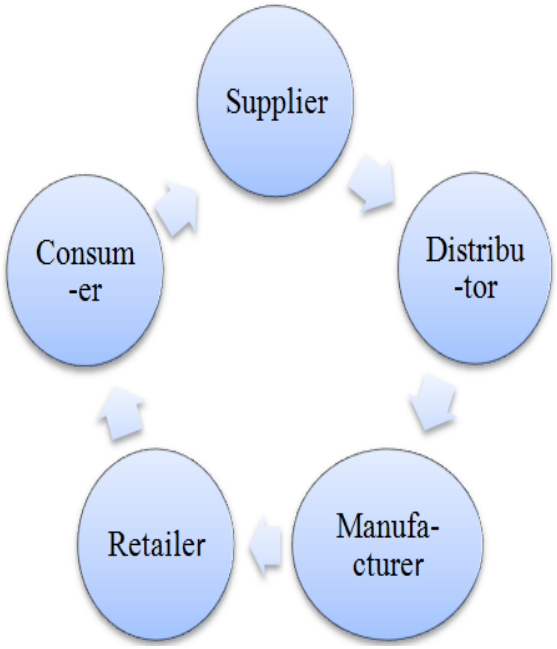
ABSTRACT

Supply of medicines in any health system is a top priority. Supply chain management is nothing but managing the flow of goods, facilities and data from their suppliers to customers. The seven principles of supply chain management has been laid out for success in supply chain management. Pharmaceutical companies are the major drug suppliers which are associated with many risks which will disrupt the supply of medicine in many ways. Therefore risk identification and managing the risks is highly recommended.

Keywords: Pharmaceutical supply chain, Supply chain Management and Supply Chain Risks.

INTRODUCTION

The word supply chain management is defined as the combination of key business processes among a network of mutually dependent suppliers, makers, distribution plant, and vendors in order to get better the flow of goods, facilities, and data from new suppliers to consumer, with the aim of decreasing system-wide price, while supporting necessary public organization level



Aims of Supply Chain Management[2]

Supply Chain Management implementation help to achieve business deliberate aims:

- ✓ decreasing working money
- ✓ taking assets off the balance sheet
- ✓ rise speed of cash-to-cash cycles
- ✓ Increasing list turns, and so on.

Supply-Chain Principles[2]

Divide clients based on facility requirements

Companies normally have assembled clients by business, manufactured goods or line of work and then delivering the same level of facility to everyone within a sector.

Good supply-chain business managers groups clients by different facility needs irrespective of business and then provides facilities to those individual segments.

Customize the Supply Chain Management network

In designing their Supply Chain Management network, companies need to focus intensely on the service requirements and profitability of the customer segments identified.

The conventional approach of creating a "monolithic" Supply Chain Management network runs counter to successful supply-chain management.

Listen to signals of market demand and plan accordingly

Sales and operations planning must span the entire chain to detect early warning signals of changing demand in ordering patterns, customer promotions, and so forth. This demand-intensive approach leads to more consistent forecasts and optimal resource allocation.

Differentiate product closer to the customer

Companies today no longer can afford to stockpile inventory to compensate for possible forecasting errors. Instead, they need to postpone product differentiation in the manufacturing process closer to actual consumer demand.

Strategically manage the sources of supply

By working closely with their key suppliers to reduce the overall costs of owning materials and services, supply-chain management leaders enhance margins both for themselves and their suppliers. Beating multiple suppliers over the head for the lowest price is out.

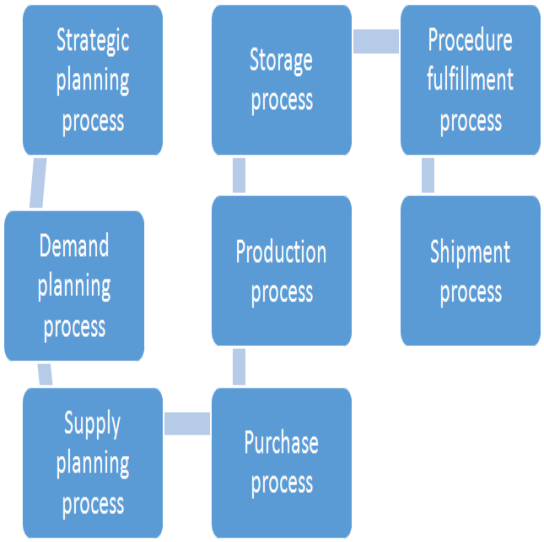
Develop a supply-chain-wide technology strategy

As one of the cornerstones of successful supply-chain management, information technology must support multiple levels of decision making. It also should afford a clear view of the flow of products, services, and information.

Adopt channel-spanning performance measures

Excellent supply-chain measurement systems do more than just monitor internal functions. They adopt measures that apply to every link in the supply chain. Importantly, these measurement systems embrace both service and financial metrics, such as each account's true profitability.

Supply Chain Management Process[3]



Strategic Planning Process

Strategic planning processes have to do with the overall view of supply chain design and overall view sourcing.

Strategic supply chain design process

Strategic supply chain design is the design, assessment and development of the supply chain design to be used in the design applications. Every part of the supply chain such as places, having transport narrow streets, resources and products are designed to accomplish arrangement based on this network. This helps to give a reaction immediately and accurately to the new developments by tracing the signs ready situations in the supply network.

Strategic sourcing process

Overall view sourcing process helps to making out an unimportant group of core suppliers with whom to make certain overall view relationships and also to make statement of the specifications. Person offering goods (for money) observations and getting something for money statistics are used to assess possible & unused quality suppliers. Achievement organization through making payments and written agreement can also be done to access the overall view sourcing process.

Demand Planning Process

Demand planning process has to do with making statement of prediction, promotion system and general agreement request map.

Prediction

Prediction forecast future request based on true history and decisions facts. Prediction can come into existence by using different methods such as statistical ways of doing, casual observations, man-like opinion or mix of all the over. Statement of outlook having no error can be got better using statistics.

Promotion system

Promotion system allows to map advertisements or other special events separately from the rest of your statement of prediction. Prediction effect is worked out using by chance techniques to measure past promotional contact and sent out into pointed out times in the future. Promotion map can also be used to map one off events such as the millennium, redone events such as quarterly giving advertisement attempts to make public opinion, trade open markets, competitions and so on.

General agreement request map

General agreement request map process generate a general agreement request map by getting mixed together all accessible information.

This is an outcome of putting together different facts such as statement of outlook, promotion budget, sale plans and so on.

Supply Planning Process

Supply map process has to do with safety amount of goods map, supply network map, outsourcing, distribution design, and consumer corporation and supplier partnership.

Safety amount of goods map

Safety amount of goods map process get to the right level of safety amount of goods list of things for all coming-in-betweens and finished products at their separate places to meet objective support level.

Supply network map

Supply network map process measure amounts to be handed over to the places to match person getting goods from store request and, support desired public organization level.

Outsourcing

Outsourcing process give outsourcing of making facilities to a third party.

Distribution design

Distribution design decide the best short word secret design to put on one side ready (to be used) supply to meet request and to restock stocking places.

Consumer Corporation

Consumer corporation process lets dealer to decide responsibility to map the levels of list of things at the consumer place.

Supplier partnership

Supplier partnership process enables supplier to get request and amount of goods information and acts by making full map tasks for making of goods of great scale by machines.

Purchase process

Purchase process have to do with buying order processing, receipt affirmation, request for payment verification.

Buying order processing

Buying order processing does the straight to procurement requirements through the sourcing, issuance and conformance of buying orders.

Receipt affirmation

Receipt affirmation processing gives details to other departments about the received and likely amount of ordered goods.

Request for payment verification

Request for payment verification process accept, moves in and check consumer request for payment for rightness.

Production process

Production process involves formulation design and production accomplishment.

Formulation design

Formulation design supports the process of giving producing orders to resources in a special order and time frame.

Production accomplishment

Production accomplishment process supports the process of taking current producing information from the store floor to support producing control and pricing processes.

Storage process

Storage process has to do with incoming processing, withdrawing process, storage and physical supply.

Incoming processing

Incoming processing include all the steps of an outside attainment process that come to mind when the goods are obtained.

Withdrawing process

Withdrawing process plan and ships goods to their target place.

Storage

Storage process store inside transit and storing of materials.

Physical supply

Physical supply supports all activities for doing the physical list of things.

Procedure fulfillment process

Procedure fulfillment process has to do with the sales order processing and making a request for payment business process.

Sales order processing

Sales order processing lets the order to access and go through, pricing and listing details order for putting into effect.

Making a request for payment process

Making a request for payment process gives thought to all activities from giving out the request for payment to the incoming payment.

Shipment process

Shipment process has to do with shipping arrangement, shipment accomplishment and shipping pricing processes.

Shipping arrangement

Shipping arrangement process makes an optimized, transportation proposal for the undertaking.

Shipment accomplishment

Shipment accomplishment process covers the complete and combined result process to produce, implement and guide shipping.

Shipping pricing process

Shipping pricing process estimate and establish shipping pricing processes[3].

Risk Factors in Pharmaceutical Supply Chain Management[4]

External supply chain risks

External risks can be determined by events either upstream or downstream in the supply chain. There are 5 main types of external risks:

Demand risks

caused by random or misinterpreted customer or end-customer demand.

Stock risks

caused by any disturbances to the flow of manufactured goods, whether raw material or portions, within your supply chain.

Environmental risks

from external supply chain; usually related to financial, public, organizational, and weather factors, including the risk of violence.

Corporate risks

caused by problems such as a dealer's economic or organization strength, or buying and trade of dealer firms.

Physical plant risks

caused by the state of a dealer's physical facility and regulatory agreement.

Inside supply chain risks

Inside risks offer improved chances for mitigation because they are within your industry's control. There are 5 main types of internal risks:

Manufacturing risks

caused by disturbances of inside procedures or processes

Corporate risks

caused by variations in main employees, administration, reporting organizations or business processes, such as the way customer link to sellers and customers

Planning and control risks

caused by insufficient assessment and planning, which amount to unsuccessful administration.

Mitigation and contingency risks

caused by not placing contingencies (or alternative solutions) in place in instance something goes wrong

Cultural risks

caused by an industry's cultural trend to hide or delay adverse data. Such industries are usually slower to react when impacted by unexpected events.

Managing Pharmaceutical Supply Chain Risks[5]

Pharmaceutical manufacturers supply chains have become increasingly complex in a globalized interests, money, goods. There may have been a simpler time when insurance was viewed as a thing commonly needed, but today policies should be complex tailored to a company's special operations. While no producing or distribution order is exactly the same as another at this point, here are some possible & unused quality risks at each stage of a simple supply chain, with an overview of how insurance can play an undertakings in making feeble, poor possible & unused quality losses.

Material supply

One of the first issues to get clearly seen at the material supply stage seems like one of the most clearly and readily seen making out when the material becomes yours to give insurance. This will have need of carefully going into with care contractual agreements, and making safe that this is important in the make of your insurance agreement. Once that's clear, it begins the process of valuing the products value at each stage of the process, from its initial stage through making, putting in, finishing, making a parcel and storing. It's important to get clearly the value of the product as its value changes throughout the process, in order to get clearly how a loss blows a company. This sort of observations should take place on a product-by-product and even ingredient-by-ingredient base.

Manufacturing/Processing

The clearly and readily seen questions about risks facing the making and processing of a product have to do with where your building is placed, such as whether it's a water over land band or earth shock part. But beyond where your building is placed, a middleman will need to get clearly what's going on inside your building. How much time does it take to start a process? What's the value of the product before and after processing? Once made and ready to move on, what's the stores of product at that building? A pharmaceutical maker of goods of great scale by machines should question themselves these types of questions to get a better grip of their own risks.

Quality Assessment and Stability testing

This is an often overlooked point of view of the supply chain from an insurance view because it's often a smaller part of a much larger picture. But it's through details because it's so prone to being not taken into account that it deserves special attention. While it looks a smaller risk, because of the value of the product you have there made a comparison to the rest of your supply chain that does not mean it's completely not important if you experience a loss. In fact, this stage of testing has more importance to your overall program than its natural value, which many firms get wrong. Because this testing has an effect on other processes and put you into regulatory issues.

Final Packaging and Storage

Packing and storing is another mislead complex part of the supply chain. What's the surrounding range of temperature from a controlling authority records view, that the product can be positioned before it's officially damaged? How long does it take to resupply and restock? What's the making wheeled machine, and can you meet request in the time period? In addition, if there is a loss, should you value your product at the store price?

Delivery to Customer

At the last stage, there are several risk factors associated with transportation which are having similarities with earlier stages. How will product get ready for going across (from place to place)? What are the unclean, diseased things risks? If there is a loss, how does that affect the overall process to meet person getting goods from store request? These issues shouldn't sound overcoming. No field of interest how complex the supply chain, using a

system with care process can make out, value and manage those risks. It is important to consider these risks, and make safe that your business is took care of by an insurance agreement tailored to your risk.

CONCLUSION

Supply chain management is nothing but managing the flow of goods, facilities and data from their suppliers to customers. Supply chain management involves the combination of these activities and targets to improve relationship between various parties while achieving a sustainable competitive advantage through high quality and lower product costs. Future supply chains are likely to be more forceful in nature and comprises of collaborative value networks in which productivity and efficiency are constantly increased. Purchasing firms need to ensure that cost and risk are equally shared across the supply chain. Pharmaceutical companies are the major drug suppliers which are associated with many risks which will disrupt the supply of medicine in many ways. Risks include natural disasters, market risks, commodity risks, transportation risks etc. Therefore risk identification and managing the risks is highly recommended.

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