

Supply chain management in contemporary pharmaceutical industry



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Supply chain management is the management of a relationship and flows between the string of operations and processes; it is the topic that integrates all the issues concerning the delivery of product and services (Slack et al., pg. 212).

Main objectives of supply chain management are proper management between demand and supply, synchronisation between manufacturing and marketing, maintaining equilibrium between raw material demand and supply, inventory management, keeping balance between inflow and outflow between of finished goods and finally maintaining a proper network between distributors, retailers and A proper supply chain management acts as the backbone of a company which if disturbed the whole organization will get negatively affected .

Indian Pharmaceutical industry – Brief: Pharmaceutical industry provides a huge contribution to GDP of any nation and plays an extremely important role in well being of every nation. When compared to other industries pharmaceutical industry falls behind other progressive industries in terms of implementing modern supply chain practises and principles. This is due to the fact that Indian pharmaceutical industry is somewhat resistant to accept hard and fast rules due to cut throat competition and unnecessary squeezing tactics from market forces. Pharmaceutical industry includes Allopathy, Homoeopathy, and Ayurveda which is the ancient Indian pathy. Hence pharmaceutical industry is as old as mankind. For a long time pharmaceutical industry enjoys the status of most profitable industry. As per the studies held at various centres one fact about medicines has been proved that every additional USD invested on new drug design saves USD 4.

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44 on hospitalization and generation of new medicines increase 40% of life expectancy(Source : [www. phrma. org](http://www.phrma.org)).

Executive summary:

This assignment set out to evaluation of supply chain management process in Medicare Private Limited, India where I worked for around nine years.

During the whole assignment my findings were totally based on supply chain management. I started assignment with an introduction of Indian pharmaceutical industry scenario and latter provided a brief introduction of Medicare Private Limited, India, where i worked for. Further i described manufacturing process of the company and discussed supply chain fundamentals in that along with possibilities to explore removal of extra man power from manufacturing process.

After discussing preclinical and clinical trials, i discussed the objectives, trends and complexities of supply chain management. I tried to implement lean synchronization to marketing flow of supply chain management where i found that there is lot of scope to reduce some marketing channels and by doing so company can reduce some unnecessary expenditure and cost. After lean synchronization, i have gone through the inventory topics, discussed advantages and disadvantages of low and high inventory management. During SWOT analysis, i found that company should focus upon its weaknesses like less product range, fatty distribution channel network, threats like cut throat competition and provided my recommendation to the company to expand in overseas market.

Medicare private Limited: Company profile

Medicare private limited a 0. 28 billion group was mainly in manufacturing, marketing and export of bulk drugs. Main revenue generating products were Paracetamol and Tricholine citrate. Besides manufacturing and marketing of Products Company was into contract manufacturing and R&D work. Company was based in Northern Province of India.

Manufacturing process: Medicare pharma was in manufacturing of various products out of which main were Syrups, micronized powders, capsules etc.

Flow chart of manufacturing process is as follows –

Brief description of manufacturing process was first of all the vessels were washed properly in bottle washing section. Afterwards product was tested in the laboratory after intensive testing product was filled in the bottles

Some unique features of pharmaceutical supply chain: Supply chain function comes under the production division. The detailed production strategy and supply chain areas are as follows –

Strategy

Logistics

Global supply chain

Operational procedures

During new product development the probability of success is very less and the entire process of new drug development drains a very high capital.

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Entry barriers in various aspects are very high so that industry faces a lot of regulatory procedures.

After reviewing above mentioned points the fact is very well established that development of newer drug is not an easy task as it consists of a lot of business risks. In spite of these professional hazards pharmaceutical industries invest a lot of capital in R&D activities.

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After analysing above figure we can very well see that new drug development is a very lengthy procedure and involves a lot of efforts, manpower planning and capital investment.

Despite all odds pharmaceutical industry enjoys a global growth of around 11% per annum and is unaffected by any kind of market hazards like recession etc.

Share of global market sales for pharmaceutical industry

The global market share for pharmaceutical countries where we can see very clearly that North America tops among all with a global sales share of 45%. Europe stands on the second place with a total share of 20% .

Supply chain structure of Medicare Private Limited India – Medicare Private Limited a leading manufacturer and exporter of medicines and pharmaceutical bulk drugs was operating on two way supply chain structures at a time. One was developing new drug delivery system and other was marketing of existing drugs. The basic aim of both of both supply chain were

different as one chain was aimed to complete all the necessary regulatory affairs from approval of new formula to completion of their clinical trials and second one was mainly concerned with achieving sales targets.

Complexities of clinical trial supply chain: This stage of supply chain was very complex natured as it was very difficult go through a very lengthy and highly regulated procedure. Total time period in a clinical trial process used to be around 2-3 years and whole process was much regulated. Another problem with this chain was that it was difficult to ascertain the number of patients as during the clinical trials the batch size of medicine was very small and most of the times during high number of volunteer patient input this was very difficult to do trials on them.

Complexities of pharma supply chain: After the completion of clinical trials the whole focus shifts towards the other priorities of the business. One of the major priorities was to launch the drug into the market after analysing market feasibility. Major reason behind not following supply chain management technique by Medicare private limited was due to the fact that every procedure of pharma supply chain was linked with previous clinical trial supply chain and most of the times things were not so sure and accurate during the periods.

Supply chain objectives and their complexities:

Objectives and Trends

Complexities

Outcome

High cost involve in new drug delivery system

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High regulatory requirements

Less choices of products

High sales pressure on marketing staff to achieve high targets.

Prescription drugs

More and more pressure from prescriber from the company

More pressure on the company to lower the retail prices of product.

Rapid growth and decreased monopoly of drugs on expiry of patents

Less sale of OTC drugs as a result of high market competition

Fewer sales lead to hampering growth of organization and employees.

More self medication habits of patients

Less sale of medicines

Hampering of growth of both employees and organisation

Issue of counterfeit drugs

Medicine sales decline

No developmental activities on part of organisation.

Flow of supply chain

Above flow is representing the distribution network of Medicines at Medicare private limited. As per the flow there were two ways of supply of medicines.

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One was direct supply of medicines in the form of institutional sales to big corporate hospitals to minimise expenses which were distributed between intermediate bodies and the other channel was typically traditional. The typical traditional channel starts from carrying and forwarding agent to distributor – stockiest – retailer -finally consumer. Major drawback with this kind of supply chain network was over involvement of maximum intermediate agents due to which cost of the product increases and that leads to minimum benefit to consumer.

Pharmaceutical manufacturers play a very important role in proper supply of medicines to the patients and other intermediaries also play a vital role in adequate supply but sometimes due to some factors supply of medicines get affected causing inconvenience to patient.

Lean Synchronisation: Lean synchronisation aims to meet the demand instantaneously, with perfect quality and no waste. This involves supplying products and services in perfect synchronisation with the demand for them , using lean or just in time (JIT) principle (Slack et al.) . This principle is mainly based upon cutting the unnecessary cost, burden to the organisation and ultimately resulting into more benefits to the organisation.

Here case of Medicare private limited applying lean synchronisation will give rise to cut in the extra marketing cost of the company and finally resulting into more profits to the organisation. Here we can see that there is distributor as an extra link which is taking around 4% of the margin, so if we remove him from the chain company can save 4% of his margin, utilise that

margin in any other cause and moreover by doing so company can reduce the unnecessary expectation of a channel.

As company is doing with the institutional sales, once again company can think over removing of one other channel which is C&F agent who is responsible for another 10% of share can be removed from the chain and hence once again company can save another 10% of profit which can be utilised in any other work.

Factors responsible for product shortage (Tyler and Mark-2002)

http://t2.gstatic.com/images?q=tbn:ANd9GcS5-knFQZzpzhg_M-xQdEjkEw9Y8IFjzHNq4X3BD26Z1D-8r0WLSSource: www.google.co.uk

Inventory priorities – the ABC system: As per the ABC system of inventory control all the inventory material is divided into 3 groups viz A, B and C .

In class A we should maintain 20% of the total inventory of 80% high usage items.

In class B we should maintain 30% of the goods of around 10% of total usage value.

In class C we should maintain 50% of goods whose value is around 10% of the total usage.

Inventory control: Inventory control is a must kind of thing in order to check unnecessary overheads to the company. High inventory costs to high drain

of working capital so the best thing is to keep control over —- Inventory can involve a very high administrative and insurance cost.

Inventory may take up excessive storage space compared its value.

Inventory can become obsolete as alternatives become available.

Inventory can be damaged or deteriorate.

Inventory can be totally lost or be very expensive to retrieve.

(Source – Slack et al.)

Benefits of maintaining high inventory:

Maintaining relatively high inventory can sometimes be beneficial during the times of high fluctuating demand of products.

High purchase of inventory can be beneficial when a good deal is offered by supplier.

Sometimes during high demand inventory can provide lucrative benefits.

Raw material quality has a remarkable effect on efficacy of the product. As far as raw material inventory is concerned company policies were very clear about high stock maintenance of raw material. High raw material inventory was maintained in the organisation because most of the times demand of the product was very fluctuating and as a result of which less inventory storage cost to irregularity between demand and supply of orders

Reverse Logistics: Management of product return in pharmaceutical industry is a herculean task. This practise is very common in pharma industry.

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Common cause for this menace can be anything as vested interests, inability to pay, date barring of the product etc may be the probable reasons behind reverse logistics.

Major problems related to reverse logistics are financial loss to the company and account discrepancies.

Hierarchy in supply chain organisations:

Basic hierarchy of supply chain is like the head of the supply chain is vice president under whom comes the Senior Manger. After senior manager hierarchy includes manager then executive and finally the last link is supervisor.

Lean Synchronisation: As discussed earlier also with the help of Lean synchronisation we can check if there is any extra link which has a low or nil productivity company can think of removing that link , utilising that link to anywhere else and subsequently reducing the cost.

In production line company can think of removing senior manager and manager from the chain , utilising them anywhere else and reducing the recurring cost of the procedure.

Long term strategy: Long term strategy of Medicare Private limited was to focus more on R&D activities, exploration of new overseas markets, launch of new product range etc.. In order to get the desired goals company has to continue operating with determination with more focus on improving quality approach and a good supply chain management.

Key performance indicators:

[http://t1.gstatic.com/images?q=tbn:](http://t1.gstatic.com/images?q=tbn:ANd9GcQXmMBZLqQfFg4iHF3RR8NoqIUWsffojB0Z3g4stUGV7p4VC-NpKw)

[ANd9GcQXmMBZLqQfFg4iHF3RR8NoqIUWsffojB0Z3g4stUGV7p4VC-](http://t1.gstatic.com/images?q=tbn:ANd9GcQXmMBZLqQfFg4iHF3RR8NoqIUWsffojB0Z3g4stUGV7p4VC-NpKw)

[NpKw](http://t1.gstatic.com/images?q=tbn:ANd9GcQXmMBZLqQfFg4iHF3RR8NoqIUWsffojB0Z3g4stUGV7p4VC-NpKw)Source: www.google.co.uk

Organisations in which supply chain management is practised use many performance indicators to confirm the smooth functioning of procedures.

There are five types of indicators viz. Quality, speed, dependability, flexibility and cost. These performance indicators are further made up of many smaller elements, e. g. Operation cost is measured by purchasing efficiency, staff productivity, direct and indirect worker ratio etc. These measures provide a partial view of functioning of supply chain management.

SWOT Analysis:

Strength

Weakness

Products having a good growth rate in less time

Less product range resulting into less market share

Fatty distribution network causing siphoning off profit margins

Opportunity

Threats

Expansion in overseas market

Diversification

Cut throat competition.

Recommendation:

Company should develop clear vision and core competency.

Company should work on balancing supply chain management system.

Implementing lean synchronization unnecessary expenditure should be cut short so that there should be more benefit to the organization and once the organization gets benefit that will link the whole chain from growth and development of organization and employees as well. Final output of growth and development of organization will result into high morale of the employees.

Keeping in mind the SWOT analysis, company should think about the opportunities of expanding its operations in overseas market and product diversification so that business makes more benefits.

Company should seriously think over main threats which are cut throat competition. Company can overcome this problem by launching some very good products in the market so that a kind of monopoly should be established.

About weakness – less product range leads to less market share of revenue so company should increase the range of products so as to get more market share and finally growth.

Company should focus on research and development activities so that new products may come into the market.

Another thing which requires immediate actions of the company is reducing manpower from production cycle and cut short its marketing distribution channel network.

Reverse logistics is a major factor which requires a serious attention because reverse logistics gives rise to unnecessary financial overheads.

Company should think over E-procurement techniques just to make the procedure fast and more accurate.

Conclusion: In the concluding part we can see that the main benefits of keeping a good flow of supply chain management leads to – More generation of revenue

Design and operate new strategies

: Long term goal achievement

: Maintaining quality of product

: Earning good market credibility.

Apart from this any company want to progress, compete with others in this competition edge should think about other things also like the company should have a clear vision, core competence and goal selection capabilities. Without these qualities no company can go far and achieve great goals. As per the CEO of Pfizer, Henry Mckinnell, " the golden age of pharma clearly lies ahead of us." But, if pharmaceutical supply chain infrastructure will not

change itself towards positivity the whole industry will not be able to get anything from the changing atmosphere.

Referencing:

Slack, N., Chambers, S., Johnston, J., and Betts, A., (2009), Operations and Process Management, Second Edition, Harlow: FT-Prentice Hall.

2) www.phrma.com accessed on 12/01/2011