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Supply Chain Management in Indian Food Industries

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ABSTRACT

Basis of my experience in the Indian food Industry. A resonating void is observed in the Indian food Industry. A value chain is another name for the supply chain. The real competition is not company against the company but rather supply chain against supply chain, supply chain management recognizes internal integration by itself isn't enough as Product attributes are no longer order winning criteria and ever-shortening lead time with continued downward pressure on prices as majority of costs lie beyond company walls. The Objective of a Supply Chain is to facilitate following Sources of supply chain revenue: the customer, Sources of supply chain cost: flows of information, products, or funds between stages of the supply chain. Supply chain management is the management of flows between and among supply chain stages to maximize total supply chain profitability.

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INTRODUCTION

This research topic "**Supply Chain Management in Indian Food Industries**" nictitated basis my learning's, having noticed Industries, have failed and perished by not understanding that only product attributes are not sufficient to win Indian Food Industry. Maximization of overall value created by Supply chain value, the difference between what the final product is worth to the customer, and the effort the supply chain expends in filling the customer's request. Value is correlated to supply chain profitability (the difference between the revenue generated from the customer and the overall cost across the supply chain). The following article also throws light on challenges in the Supply Chain Management system which according to me are system-wide costs are minimized, and system-wide service levels are system-wide costs are minimized, and system-wide service levels are maintained hard to meet these objectives within a single facility increases exponentially with more companies. The solution that gives the best systemwide strategy is called global optimization with a formidable analysis to launch a devised product and ensuring qualitative supply chain management will surely pave way for winning ways into the Indian Food Market.

Supply Chain Management forms an integral part of the food industry. Be it for an organization form ideation phase i.e New Product Development (NPD) to actualization phase (launch phase). The highly competitive food production environment/ market is primarily driven by time-based competition, where a farmer and producer's ability/capability to provide responsive and flexible supply to a customer defines its competitive edge. These firms recognize that innovative supply and exceptional service are imperative to retain the customer base and to gain new revenue opportunities. To attain this it is important to structure the supply chains, especially the procurement process to respond to upside demand and to absorb downsize risks without creating excessive inventory or capacity. The food supply chain is a series of links and inter-dependencies, from farm to food consumers plates, embracing a wide range of disciplines. The figure below amplifies the traditional components which act as the key players in the SCM [18] Concept and how they can be separated to understand the SCM in the food Industry.

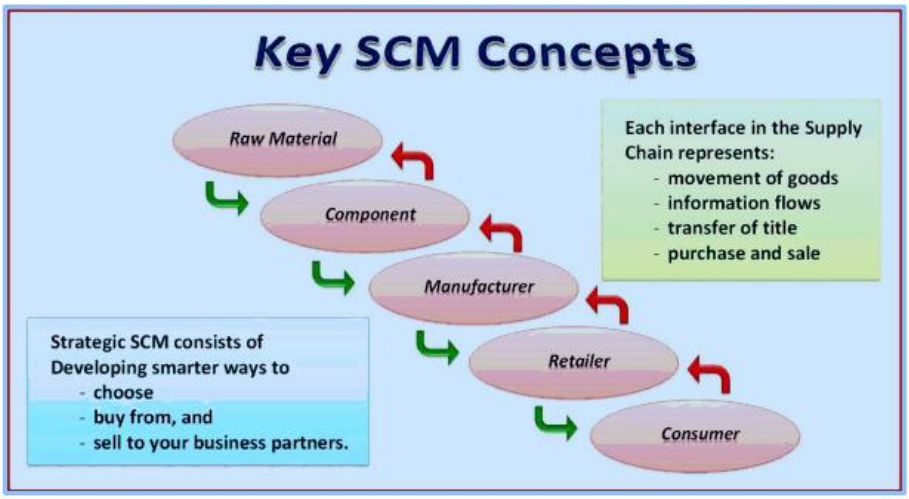

Figure No. 1: Illustration of the interdependency of various functions in the food industry.

SCM Functions in the Food Industry. SCM in Food Industry brings together a large number of important disciplines and aims to provide an understanding of the chain, to support those who manage parts of the chain, and to enhance the development of research activities in the discipline. The overall logistics supply chain can be divided into three segments: Inbound Logistics, Intra Facility Logistics, and Outbound Logistics. Relationship between various functions within the logistics supply chain.

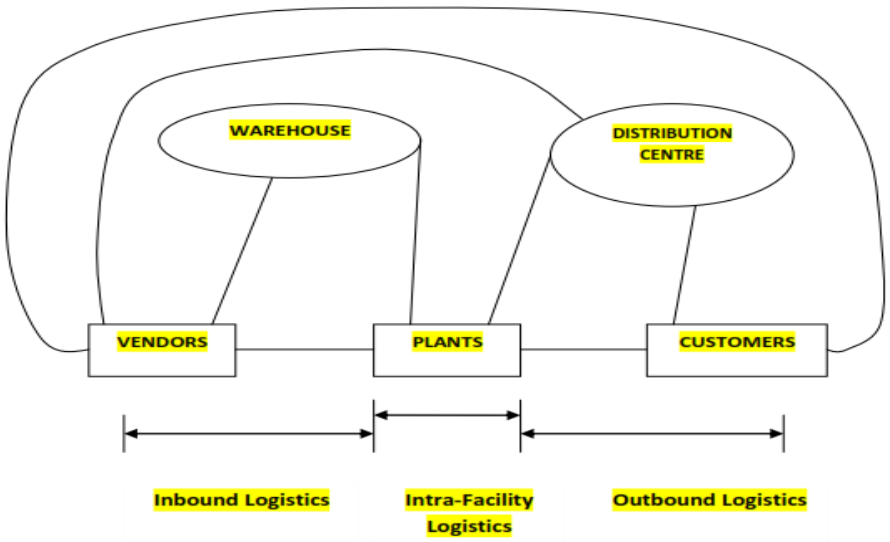

Figure No. 2: Illustration of various disciplines in the food industry.

To ensure the qualitative approach above mentioned flow chart illustrates the measure.

Disciplines in Food Industry. A study of the SCM[4-5] in Food Supply Industry is a detailed analysis of the broad aspects involving the process of planning, organizing, and controlling the flow of materials and services from suppliers to end-users or consumers. Integrated Logistics incorporates suppliers, supply management, integrated logistics, and operations. It is important to deliberately analyze every aspect in detail.

Disciplines of food SCM areas depicted in the figure given below:

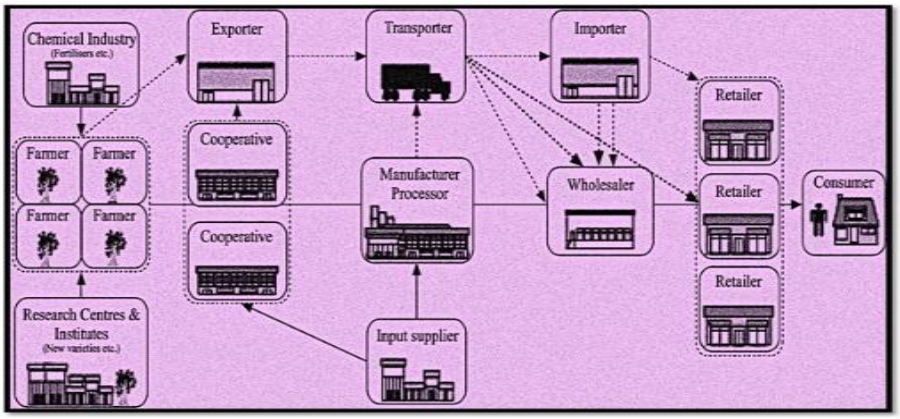

Figure No. 3: Disciplines of Food Supply Chain (Illustration)

The technological changes in the **SCM** driven by improved communication can bring significant changes in the relationship between the partners in the supply chain; enhance the productivity and the profits of the business in the food industry. The study essentially needs to follow a **'farm to fork'** structure, involving a variety of aspects such as consumers, perceived risks, product safety, procurement, livestock systems, crop production, food manufacture, retailing, wholesaling, and catering. Special consideration is also given to supermarket supply networks, third party logistics, temperature-controlled supply chains, organic foods, and the food supply chain. A final look will also need to be given in the future for food supply chain management. **SCM** solution map given in Fig.3 reflects all issues that are encompassed by **SCM** in the Food Industry. These aspects will have to be kept in mind during model formulation.

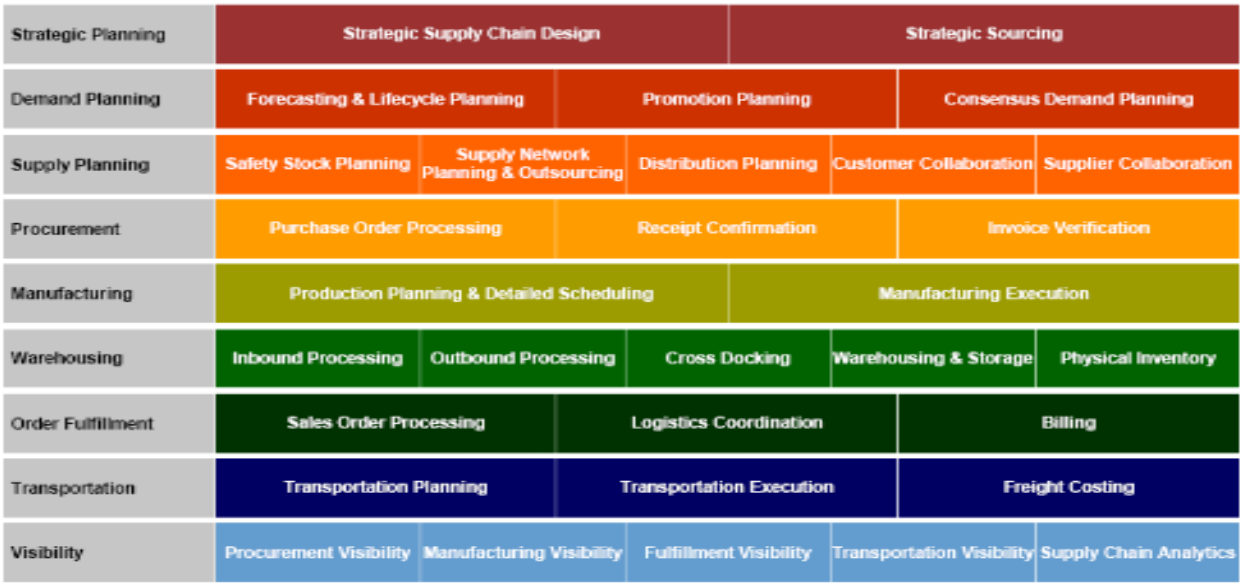

Figure No. 4: Strategic supply chain design

- Supply chain management to ensure qualitative strategy to align with region-specific plans to remain profitable and ensure affectivity. With consumers, be a manufacturing level during product ideation phase to the last-mile end customer, every gate stage is imperative. The supply chain needs to maintain a conscious effort to maintain and implement qualitative sourcing to know the source of ingredients.

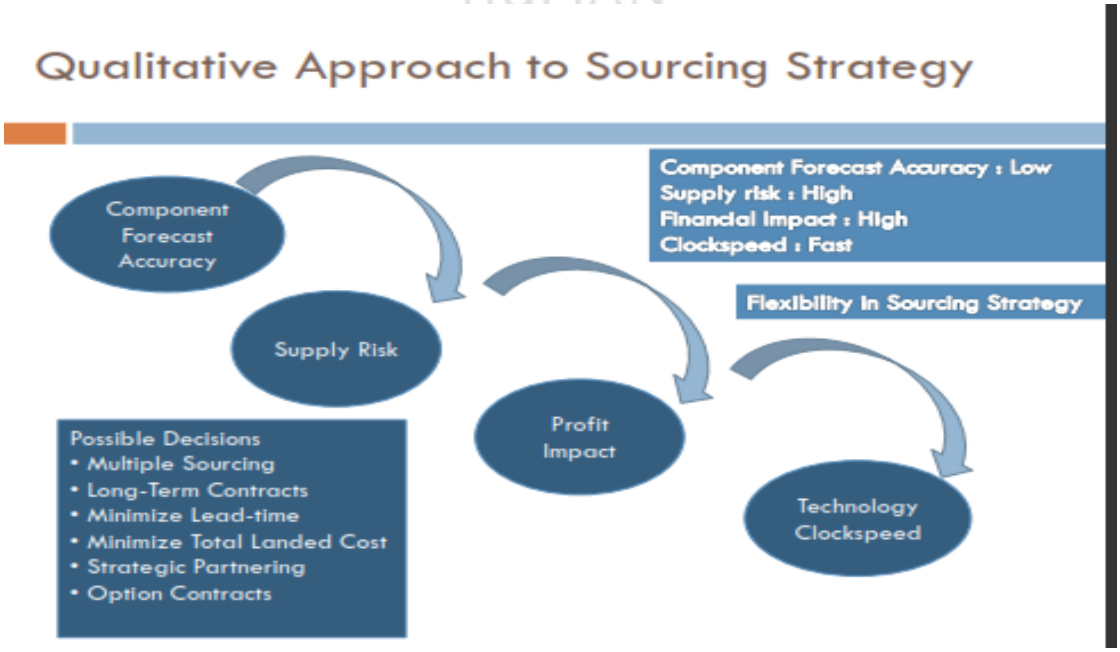

Figure No. 5: Stages for ensuring qualitative strategy in SCM [17]

Supply chain management: text and cases by Janet shain

- Let us take an instance of the Energy drink segment currently led by Red Bull GMBH, based out of Austria. When they entered India they had a very clear Supply Chain Strategy. Their plan was one can one taste across the world. They knew from day one they cannot source key ingredients be it natural spring water, sweeteners, caffeine. Supply chain ensured with proper integration at all gate stage levels set up warehouses at key locations thus ensuring cost-effective availability. Red Bull with strong market analysis executed a seamless product launch which itself is a case study today. Brands like Coke and Pepsi though had entered much before Red Bull and were pretty successful with carbonated beverages failed to understand the Energy drink segment and aspired to emulate the success of Red Bull and to date have failed to capitalize energy drink segment.

- If we take an instance of Foodservice industry say, Paradise Biryani which initially saw success in Hyderabad and gradually branched out to the rest of cities like Banglore, Chennai, NCR has failed to taste success. Target groups have their own acquired tastes and might not appreciate similar offerings.

Following are some 18 Modules to ascertain winning ways in Indian Food Industry are:

1. Decision Phases of a Supply Chain

-Supply chain strategy or design

-Supply chain planning

- Supply chain operation

2. Supply Chain Strategy or Design

- Decisions about the structure of the supply chain and what processes each stage will perform must take into account market uncertainty.

Figure No. 6: Risks in Supply Chain Management

-Strategic supply chain decisions

-Locations and capacities of facilities

-Products to be made or stored at various locations

-Modes of transportation

-Information systems

-Supply chain design must support strategic objectives.

- Supply chain design decisions are long-term and expensive to reverse.

Example: Intangible Losses

	Product 1	Product 2	Product 3	Total
The unit cost of acquisition (Rs.)	80	75	70	
Unit full sale price (Rs.)	100	95	90	
Unit clearance sale price (Rs.)	50	50	50	
Demand forecast (units)	60	70	80	210
Actual demand (units)	50	70	90	210
Potential profit (Rs.)	1000	1400	1800	4200
Inventory (based on forecast)	60	70	80	210
Actual sales (units)	50	70	80	200
Clearance sales (units)	10	-	-	10
Actual profit (Rs.)	700	1400	1600	3700
Intangible loss (Rs.)	300	-	200	500

Achieving Strategic Fit

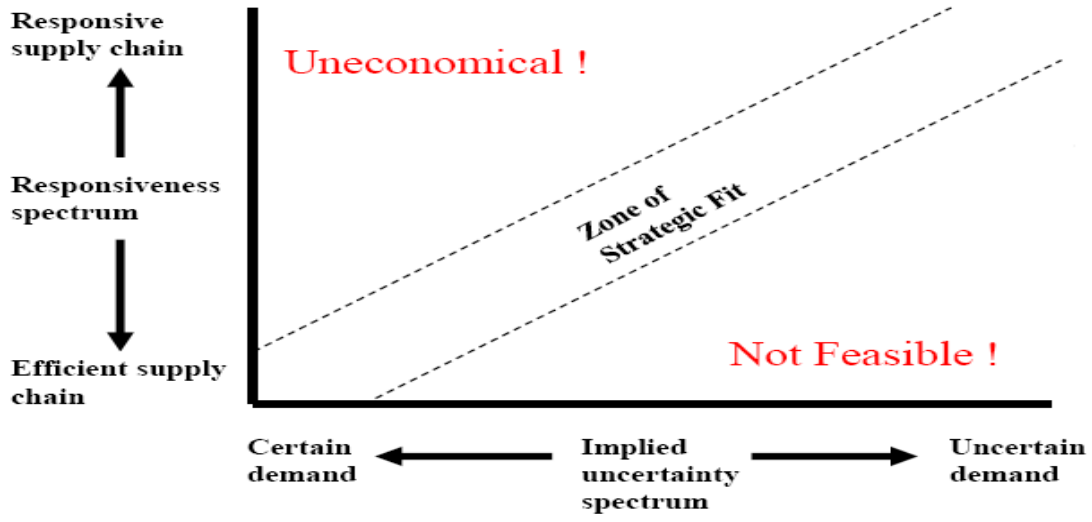

Figure No. 7: Depiction of Strategic Fit

Strategic fit means the meeting of the organization's external environment (requirements or demands to the organization by buyers or customers) with their resources and capabilities.

3. Supply Chain Planning

Definition of a set of policies that govern short-term operations.

- Fixed by the supply configuration from the previous phase

- Starts with a forecast of demand in the coming year

4. Planning decisions:

- Which markets will be supplied from which locations?

- Planned buildup of inventories

- Subcontracting, backup locations

- Inventory policies

- Timing and size of market promotions

- Must consider in planning decisions demand uncertainty, exchange rates, competition over the time horizon

5. Supply Chain Operation

-Time horizon is weekly or daily.

-Decisions regarding individual customer orders.

-Supply chain configuration is fixed and operating policies are determined.

-The goal is to implement the operating policies as effectively as possible.

-Allocate orders to inventory or production, set order due dates, generate pick lists at a warehouse, allocate an order to a particular shipment, set delivery schedules, place replenishment orders.

- Much less uncertainty (short time horizon)

6. Process View of a Supply Chain

- Cycle view: Processes in a supply chain are divided into a series of cycles, each performed at the interfaces between two successive supply chain stages.

- Push/pull view: Processes in a supply chain are divided into two categories depending on whether they are executed in response to a customer order (pull) or anticipation of a customer order (push).

Cycle View of Supply Chains:

Customer Order Cycle

Retailer Replenishment Cycle

Distributor Manufacturing Cycle

Manufacturer Procurement Cycle

Supplier

Push/Pull View of Supply Chain Processes

- Supply chain processes fall into one of two categories depending on the timing of their execution relative to customer demand.

- Pull: execution is initiated in response to a customer order (reactive).

- Push: execution is initiated in anticipation of customer orders (speculative).

- Push/pull boundary separates push processes from pull processes.

7. Framework and key decisions of operations strategy

Competitive strategies

- Competencies

- Operations Strategy (Resources - asset portfolio, Processes (Activity Network)

- Size, type, timing, location, supply, technology, innovation

8. Developing a Sourcing Strategy

Determine the components, products or services to be outsourced.

- Identify which products or services should be sourced overseas.

- Determine the number of suppliers.

- Determine organizational relationships.

- Determine levels of engagement and risk management methods.

- Establish contracts and incentives.

- Establish the appropriate procurement management structure.

9. What is Strategic Sourcing?

Deciding on appropriate supply relationships for each activity.

Three-step approach:

1. Identify the activity and its requirements;

2. Make-or-buy decision: which activities are internal or not?

3. SRM: define, contract and manage the supplier relationship

Distinguish:

- Strategic buyers: lead cross-functional sourcing teams that develop a sourcing strategy

- CPO, global commodity managers, commodity business plan

- Tactical buyers: execute transactional purchase order processes

10. Strategic Sourcing - Why it is important

Purchasing, sourcing, procurement is the biggest single cost for most firms.

Accounts for 60% of the average company's total cost

- Great potential for bottom-line improvement

- Sourcing must be strategic:

1. Cost containment is fundamental.

- Control prices and prevent wasteful spending

2. If well practiced, it can also drive innovation, quality, flexibility or responsiveness.

- Need talent and mindset beyond transactional purchasing

- Need to integrate with overall operations strategy

11. Strategic Sourcing - A strategic framework:

1. Is outsourcing feasible?

- Is a stable supply base with the necessary capabilities available?

- Is outsourcing politically viable?

2. Is outsourcing necessary?

- Our internal financial and operational capabilities insufficient?

3. Is outsourcing in line with strategic priorities and risks?

- Is this activity "non-core"?

- Is the risk of outsourcing it tolerable?

4. Is outsourcing desirable given our value proposition?

- Can external suppliers do it better? (TCO & NPV)

5. Do we have the ability to manage suppliers and ongoing risk?

- Can we contract on detailed requirements?

- Can we coordinate incentives and operational flows?

6. Easy Difficult Impossible

Market Buy Long Term Relationships Vertical Integration

1. Is outsourcing feasible?

- YES....Goto 2

- NO.....Goto 6

2. Is outsourcing necessary?

- NO....Goto 3

- YES....Goto 6

3. Is outsourcing in line with strategic priorities and risks?

- YES...Goto 4

- NO...Goto 6

4. Is outsourcing desirable given our value proposition?

- YES....Goto 5

- No....Goto 6

5. Do we have the ability to manage suppliers and ongoing risk?

6. Easy Difficult Impossible

Market Buy Long Term Relationships Vertical Integration

12. Strategic Sourcing Tools: TCO Total Cost of Ownership

TCO evaluates the total cost of sourcing or of using any activity provided by a given supplier

- TCO includes more than TLC and captures a lifetime

- TCO is calculated following 3-steps:

- Determine all activities impacted by the particular sourcing

- Identify and quantify cost drivers (a la activity-based costing)

- Calculate the TCO of each supplier

TCO uses:

- Support make-or-buy decision and supplier selection

- Communicate TCO via scorecard to manage suppliers over time

- Communicate TCO to customers

- Improve coordination and performance across the supply chain

13. Strategic Sourcing Tools: (2) Multi-Sourcing

Benefits and challenges

- Make-and-buy

Possible dimensions along which sourcing can be tailored.

1. Volume and responsiveness-based sourcing

2. Product or customization-based sourcing

- Source depends on each product's reward, risk, and customization req's

- Standard v. custom products, small-batch vs. large volume

3. Quality-based sourcing

- Different sources for different quality requirements

4. Innovation-based sourcing

- Different sources for new products v. older stabilized

14**. A General Framework**

Two distinct chains in organizations:

- The supply chain which focuses on the flow of physical products from suppliers through manufacturing and distribution to retail outlets and customers, and The development chain which focuses on new product introduction and involves product architecture, make/buy decisions, earlier supplier involvement, strategic partnering, supplier footprint, and supply contracts.

15. **Key Characteristics of Development Chain**

Technology clock speed

- Make/Buy decisions

- Product structure

16. Framework for Matching Product Design and Supply Chain Strategies (Illustration)

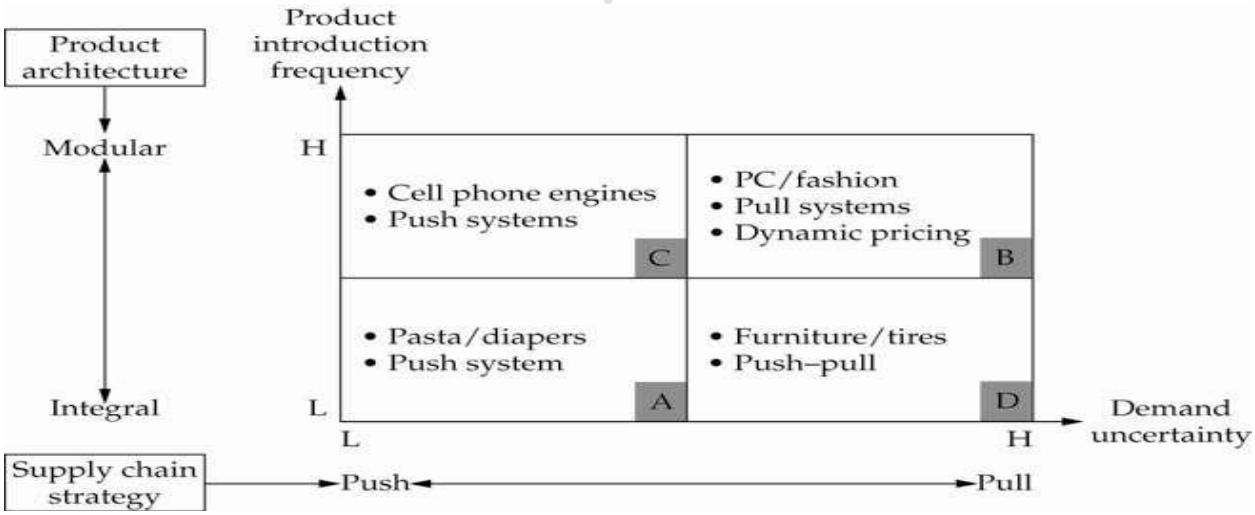

Figure No. 8: Framework for Matching Product Design and Supply Chain Strategies (Illustration)

17. **Modularity in Product and Process**

Modular Product:

- Can be made by appropriately combining the different modules.

- It entails providing customers several options for each module.

Modular Process:

- Each product undergo a discrete set of operations making it possible to store inventory in semi-finished form.

- Products differ from each other in terms of the subset of operations that are performed on them.

Examples:

Oil refining is not modular since it is continuous and inventory storage of semi-finished product is difficult.

- Modular products are not always made from modular processes.

- Agri-tech and neutracticles industries make modular products but use non-modular processes; many products are made by varying the mix of a small number of ingredients.

18. **Inventory Systems – Comparison**

Single-period inventory model, Designed for use with highly perishable products. The objective is to balance the gross profit generated by the sale of a unit with the cost incurred for each unit that is not sold until after the primary selling period has elapsed.[21]

SUMMARY

Indian food industry market segment can be classified to sub-categories of the industry which can be: Agriculture Produce (Rice, Pulses, grains, flours, Dried Foods, Sugar, Spices, Fruits & Vegetables, Cereals, Organically derived Produce), Additives & Supplements (wellbeing, Diet & Health, animal feed, Fishery), Bakery Ingredients (Yeast, Glutens, improvers, Natural flavors & extracts, Colours, Oleoresins), Canned Foods (vegetable broths, cut fruits, corns, minced meat, purees, pastes), Frozen & Chilled Foods (Meat, seafood, seasonal agriculture products), Condiments & Sauces (emulsified sauces, cooked up sauces), Confectionary (sweet and savory), Processed Foods (Ready to Eat, Ready to cook, soups, snacks, fruity syrups, fruit juices, seasonings, Baby and Infant foods), Dairy, Edible Oils and Fats, Sea Foods, Meat & Poultry. For organizations to be strike winning ways to encapsulate market and emerge as market leaders they need to have strong acumen of specific approach which will pave ways for winning ways.

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