SUMMER INTERNSHIP PROGRAMME REPORT 2021

SUMMER INTERNSHIP PROJECT

On the topics

"Leveraging Amul's Strong Reverse Supply Chain To Eliminate Plastic From Its Supply Chain"

And

"Helping Amul to Optimize Ordering Channel By Shifting To Online Mode

And

Lead Conversion Of APO Requests"

At

Submitted in Partial Fulfilment of

MBA FT 2020-22

INSTITUTE OF MANAGEMENT NIRMA UNIVERSITY

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ACKNOWLEDGEMENT

The internship at AMUL (GCMMF) was a privilege for me and is a turning point as far as my career is concerned. It provided me the opportunity to interact with some greatest of minds. This internship has sharpen my research skills and allowed me to delve deep into the Supply Chain when it comes to Redesigning the Supply Chain in order to achieve greater good.

I would like to express gratitude towards Mr. Ishaan Gupta, Key Account Manager of E-Commerce, Modern Trade & HoReCa, my mentor at Amul, Ahmedabad for guiding me throughout the internship. I would also like to extend my gratitude to my Faculty Mentor, Prof. Tirthank Shah for his constant support.

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Amul is an Indian dairy cooperative association with headquarters in Anand, Gujarat. It is a cooperative brand administered by the Gujarat Co-operative Milk Marketing Federation Ltd. GCMMF (Gujarat Cooperative Milk Marketing Federation) is India's largest food product marketing organisation, with an annual turnover of US$ 5.1 billion (2019-20). It procures over 23 million litres of milk per day from 18600 village milk cooperative organisations, 18 member unions encompassing 33 districts, and 3.6 million milk producer members.

Tribhuvandas Patel's efforts resulted in the establishment of Kaira District Milk Union Limited (later renamed Amul) in 1946. The Amul Foundation made a big contribution to India's white revolution.

Under the supervision of Sardar Vallabhbhai Patel, Tribhuvandas Patel became the organization's founding chairman and led it until his retirement in the 1970s. In 1949, he employed Dr. Verghese Kurien. Dr. Kurien agreed to stay and assist with the mission once he persuaded him to do so. Dr. Kurien served as the general manager of Amul under the leadership of Tribhuvandas and assisted in the technological and marketing activities of the company. After Tribhuvandas Patel died in 1994, Dr. Kurien served as chairman of Amul for a short time.

OBJECTIVE OF AMUL

The Primary objectives of Amul are

- To provide maximum and remunerative returns to the farmers who provide milk to the company each morning. Improving their life standards and to liberate the farmers from economic oppression and lead them to prosperity.
- To provide customers with the best quality products made from the best quality of raw materials to provide best value for the money customers pay.

Amul gives back almost 80% of the total profits to the farmers to ensure their well-being and higher standard of living. All the expenses and salaries of the employees are extracted from the remaining 20% of the profit. Also the amount payable to the farmers is credited into their respective bank accounts according to the quality of the milk which is tested before accepting the milk. The quality of milk and the amount payable depends on a number of criteria like thickness, fat, quantity, etc. The right amount is credited even before the farmer reaches home, all thanks to the automated and computerized system.

Mission:

Amul endeavour to satisfy the taste and nutrition requirements of the customers, of the world through excellence in marketing by their committed team. Through co-operative networking, they are committed to offer quality products that provide best value for money.

History:

1946	Amul registered.
1970	Spearheaded white revolution in India
1973	Setup of Gujarat Co-operative Milk Marketing Federation.
2007	Crossed One billion USD in its sales turnover
2018	Prime Minister Narendra Modi inaugurated chocolate plant in Mogar.

Products and Services offered by the company:

A list of products of Amul is as below:

- Amul Bread Spreads Range
  - Amul Butter
  - Amul Lite
  - Delicious Table Margarine
- Amul Beverage Range / Milk Drinks
  - Amul Kool Milkshake
  - Amul Kool
  - Amul Kool KoKo
  - Amul Kool Café
  - Nutramul Energy Drink
  - Amul Kool Chocolate Milk
  - Amul Kool flavoured Milk
  - Amul Masti Buttermilk
  - Amul Lassi
  - Amul Kool Thandai

- Amul Satmina can
- Amul Probiotic Lassi
- Amul Prolife Buttermilk

- Amul Powder Milk Range
  - Amul Spray Infant Milk Food
  - Amul Instant Full Cream Milk Powder
  - Amul Sagar Skimmed Milk Powder
  - Sagar Tea Coffee Whitener
  - Amulya Diary Whitener
- Amul Fresh Milk Range
  - Amul Fresh Milk
  - Amul Gold Milk
  - Amul Taaza Double Toned Milk
  - Amul Lite Slim and Trim Milk
  - Amul Fresh Cream
  - Amul Shakti Toned Milk
  - Amul Calci+
- Amul Cheese Range
  - Amul Cheese Spreads
  - Amul Emmental Cheese
  - Amul Pizza Mozzarella Cheese
  - Gouda Cheese
- Amul Cooking Range
  - Amul /Sagar Pure Ghee
  - Amul Ghee
  - Amul Yellow Cow Ghee
  - Amul Cooking Butter
- Amul Dahi Range
  - Amul Flaavyo Frozen Yoghurt
  - Amul Masti Dahi
  - Pro-biotic Dahi
- Amul Mithai / Desserts Range
  - Amul Shrikhand

- Amul Mithaee Gulab Jamoon
- Amul Basundi
- Amul Avsar Ladoo
- Amul Mithai Mate
- Amul Mithaee Kulfi Mix

- Amul Chocolates
  - Amul Fruit ‘n' Nut Chocolate Congrats Pack
  - Amul Fundoo Milk Chocolate
  - Amul Chocozoo
  - Amul Cooking Chocolate – Dark Choco Slab and Milk Choco Slab
  - Amul Rejoice Assorted Chocolate
  - Amul Wafer Chocolate –Bindaaz
  - Amul Chocolate Syrup
- Amul Icecreams
  - Simply Delicious Range
  - Nature's Treat
  - Sundae Range
  - Cassatta
- Amul's New Products
  - Amul Avasar Kaju Katri
  - Amul Bhaji Pav
  - Amul Bun
  - Amul Butter Cookies
  - Amul chocolate Cookies
  - Amul Fruity Bread
  - Amul Jeera Toast
  - Amul Milk Bread
  - Amul Milk Toast
  - Amul Multi Grain Bread
  - Amul Pizza Base
  - Amul Whole Wheat Brea d
  - Amul Avasar Kesar Peda

ABOUT THE FOOD PROCESSING SECTOR

Introduction:

The Indian food sector is on the verge of a massive expansion, with its contribution to global food commerce expanding year after year. Because of its enormous potential for value addition, the food sector in India has emerged as a high-growth and high-profit sector, particularly in the food processing business.

The Government of India, which controls around 32% of the country's overall food market, has played a key role in the growth and development of the food processing industry. The government, through the Ministry of Food Processing Industries (MoFPI), is actively encouraging investment in the industry.

Market Size:

The Indian food and grocery market is the sixth largest in the world, with retail accounting for 70% of total sales. The Indian food processing sector, which accounts for 32 percent of the country's overall food market and is rated fifth in terms of production, consumption, export, and predicted growth, is one of the country's largest sectors. It accounts for 8.80 and 8.39 percent of GVA in manufacturing and agriculture, respectively, as well as 13 percent of India's exports and 6% of overall industrial investment. The Indian gourmet food business is currently worth US$ 1.3 billion and is expected to develop at a 20 percent compound annual growth rate (CAGR). The organic food market in India is predicted to grow by threefold by 2020.

In India, the online meal ordering industry is still in its infancy, but it is rapidly expanding. With online meal delivery companies such as FoodPanda, Zomato, TinyOwl, and Swiggy gaining traction through partnerships, the organised food industry has a bright future. In 2016, the internet meal delivery market rose by 150 percent year over year, with a Gross Merchandise Value (GMV) of US$ 300 million.

Government Initiatives:

The following are some of the significant steps taken by the Indian government to strengthen the food processing sector:

- The Indian government wants to accelerate growth in the food processing sector by leveraging reforms including 100% foreign direct investment (FDI) in food marketing and other incentives at the federal and state levels, as well as a significant focus on supply chain infrastructure.

- The Government of India established a dairy processing infrastructure fund worth Rs 8,000 crore in the Union Budget 2017-18.
- The Indian government has eased the sector's foreign direct investment (FDI) rules, allowing up to 100% FDI in food goods e-commerce via an automated approach.
- By updating 59 current food testing laboratories and establishing 62 new mobile testing labs across the country, the Food Safety and Standards Authority of India (FSSAI) proposes to invest roughly Rs 482 crore to boost India's food testing infrastructure.

Future:

The food processing industry will benefit from the adoption of food safety and quality assurance mechanisms such as Total Quality Management (TQM) including ISO 9000, ISO 22000, Hazard Analysis and Critical Control Points (HACCP), Good Manufacturing Practices (GMP), and Good Hygienic Practices (GHP) in the future. It would allow for strict adherence to quality and hygiene standards, protecting consumer health, preparing the business for global competitiveness, increasing product acceptance by overseas customers, and keeping the business technologically up to date with international best practises.

ABSTRACT

Amul has a huge turnover of milk everyday. All this milk is transported and supplied in plastic pouches which are not re-usable and contributes to the ever increasing amount of plastic on earth. This project focuses on how the usage of plastic pouches can be replaced by re-usable glass bottles.

Under this implementation, the glass bottles will be collected from the customers the next day and will be sent back to the main unit where the milk will be filled again in the bottle after the required and essential cleaning process.

This project will include the entire plan of action required to make the relevant upgradation in the supply chain to efficiently accommodate the change due to the replacement.

Chapter-1: The project will start from the manufacturing of glass bottles under which the raw materials required will be discussed along with the procurement of raw material. The manufacturing process to be implemented will also be briefed for optimum usage of all the resources.

Chapter-2: This part will include the planning and changes required to be made in logistics processes so that the bottles are well handled during the transit as glass bottles are fragile and needs more attention and care than plastic pouches.

Chapter-3: The entire Supply Chain will be looked upon and various schemes and Plan of Action shall be discussed in this section to promote the idea of replacing plastic pouches with glass bottles to the customers.

Chapter-4 This part will include redesigning of the entire reverse supply chain in which the plan of collecting glass bottles from the customers and to make it reach the relevant manufacturing plant will be discussed.

Chapter-5: The last part will include how this project will benefit the company as well as the entire globe to reduce plastic waste and to make the world a better place

Later part of the project discussed about the task of Helping Amul to optimize ordering channel by shifting to online mode and lead conversion of APO requests.

Leveraging Amul's Strong Reverse Supply Chain To Eliminate Plastic From Its Supply Chain

CHAPTER 1

INTRODUCTION

PART A

1. INTRODUCTION

1.1 Nature of Problem

Cows, goats, sheep, camels, and buffalos are among the animals utilised to provide milk for human consumption in various regions of the world. Milk is a liquid that necessitates the use of containers at every stage of its journey: manufacture, storage, transportation, distribution, and marketing. During the packaging process, the most appropriate containers and components are utilised to ensure that the milk and milk-derived products are delivered safely from the manufacturer to the consumer. Innovative packaging technologies for milk and milk-derived products are critical in the distribution process, the development of product longevity, storage, and the addition of value to food and food products. Packaging is defined as a tool that protects and contains items while also limiting the product's environmental impact during consumption. The need for milk and milk-derived products, environmental consciousness, the consumer market, and new technology development all influence the design of packaging for milk and milk-derived products. During the design process, it is critical to choose the best materials to meet the design criteria (prevent food products from interacting with the external environment from the time they are packaged until they are consumed) while also reducing energy use and environmental impacts over the product's lifetime. Packaging Paper and paper-based products (coated or lined), glass, tin plate, aluminium foil, timber (wood), plastics, and laminates are among the materials used in milk and dairy products. Natural resources are used to provide the materials and energy required to create and shape the food packaging systems. There is a link between population expansion and resource depletion as well. The first point of concern is resource utilisation. Globally, we consume around 10 billion tonnes of engineering materials each year. rs polyethylene (PE), polyvinyl chloride (PVC), polypropylene (PP), and polyethylene-terephthalate (PET) start to resemble steel. The second point of concern is the amount of energy and carbon released into the environment as a result of the manufacture of these products. The embodied energy of some materials, such as metals, polymers, composites, and foams, is more than 100 MJ/Kg, and the CO_2 footprint exceeds 10 Kg of CO_2 per Kg of materials during primary manufacturing.

1.2 Objectives of the study

The objective of the project is:

- To suggest best manufacturing process for the manufacturing of glass bottles in the factory premises.
- To determine from where the raw materials should be procured in order to obtain least manufacturing cost.
- To suggest required changes in the supply chain in order to facilitate the replacement of plastic pouches with glass bottles.
- To suggest changes in the reverse supply chain in order to return the glass bottles to the manufacturing plant for cleaning and refilling.
- To learn how to make changes in the supply chain to optimise the outcome which benefits all the stakeholders the most.
- To enlist the benefits and loss due to the change in the supply chain and reverse supply chain not only from the perspective of a manager, but also from the perspective of a woke environmental enthusiast

1.3 Exploration of Alternatives:

Some of the alternatives of plastic in packaging of milk are tetra packs, glass bottles, metal cans

1.4 Methodology:

The main source of information was the actual life scenario people have created by exploiting the benefits of the cheapest form of packaging which is plastic. The usage of plastic is seen more than ever, most of which is observed in the packaging purposes. Alternatives of plastic is either glass, paper or cardboard in most of the scenarios, out of which, plastic is the most durable, feasible, and flexible alternative, not forgetting to mention the cost aspect, on which most of the manufacturing firms depend. Manufacturing firms can increase the margin of profit by merely saving on the packaging costs which encourages the usage of plastic.

Other important source of information was online surfing. Online surfing can help exploring a broad view of how people are exploiting the usage of plastic for personal gains. By online surfing, an exact picture can be observed and analysed which a key factor of choosing to work

on this project. It helps to understand the depth of the seriousness over-usage of plastic has raised.

The disadvantages of usage of plastic such as non-biodegradable nature, producing harmful and toxic gases like carbon dioxide and carbon monoxide on burning, stopping water to penetrate through the ground which decreases the underground water bank, and may more, played a crucial role in analyzing and understanding the problem. Plastic has also been a major reason of global warming directly or indirectly which is a serious matter in itself.

Also the volume at which Amul milk functions everyday is a major motivation in identifying the problem and finding an alternative through which the damage caused can be reduced. If implemented the project, Amul can contribute heavily in reducing the use of plastic for packaging. Given the reputation and scale of operation, other minor and competitive companies or brands can imitate the step taken by Amul, which will add on the prevention and elimination of plastic use in dairy industry and if focused on the bigger picture, from the entire packaging purpose of the manufacturing firms.

CHAPTER 2

MANUFACTURING OF GLASS BOTTLES

PART B

2. MANUFACTURING OF GLASS BOTTLES

In the production of glass bottles for storage and transportation of milk, there are three key steps. They are as follows:

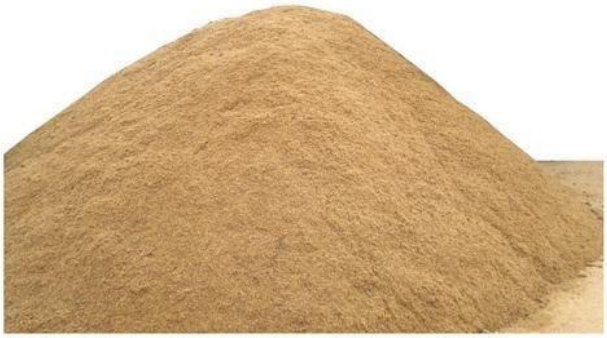
- Raw materials
- Hot end processes
- Cold end processes

2.1 Raw Materials

The primary raw materials which are used in manufacturing glass bottles are Sand, Soda ash, Limestone And Cullet.

Glass bottles are made by melting sand, blowing the molten viscous material into the desired shape with a mould, and then cooling it. All of our suppliers should be fully aware of our demands for high stability, remarkable quality, and remarkable technical qualities in the raw materials we buy. We anticipate that all raw material categories will be fully approved, with a list of exact technical standards. We shall choose a certain sort of raw material for each type of packaging, taking into account the attributes of the product that will finally be wrapped. During the production process, it is critical to continually examine the technical properties of the raw materials.

A. Sand



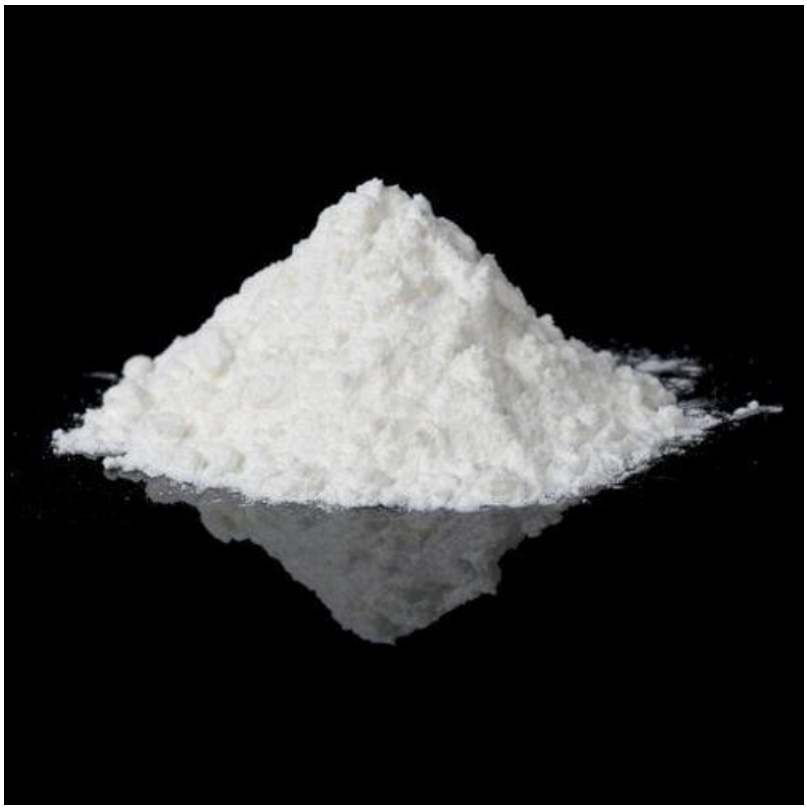
Sand is a granular material made up of small rock and mineral particles that have been coarsely split. Sand comes in a variety of components, but its grain size is what defines it. The grains of sand are smaller than those of gravel and coarser than those of silt. Sand can also refer to a type of soil or a textural class of soil, such as one with more than 85 percent sand-sized particles by mass. Sand composition varies depending on local rock sources and circumstances, although silica (silicon dioxide, or SiO2), usually in the form of quartz, is the most prevalent ingredient of sand in inland continental settings and non-tropical coastal settings.

The most significant element in glass manufacture is silica, sometimes known as industrial sand. Silica sand is the principal component in all varieties of ordinary and custom glass because it offers the vital Silicon Dioxide required for glass formulation. Despite the fact that glass is made from a range of materials, silica accounts for more than 70% of the final weight. The colour, clarity, and strength of the glass formed are all determined by its chemical purity.

The need and requirement for chemically pure (made of over 98 percent SiO2), proper diameter (grain size of between 0.075 mm and 1.18 mm), and colourless silica in the production of glass exist (must contain between 0.025 percent and 0.04 percent Fe2O3). Because the silica must be strong, able to withstand high temperatures, and keep a consistent appearance as a completed product, these requirements are exceedingly demanding and technical.

Sand in India can be procured from different states of India or can be imported from countries like Combodia and Malaysia. The price of sand for a truck depends on many factors including the quality of the sand, the source of procurement and the purpose or usage of the commodity. India is a sand deficit country which means the total supply of sand is lower than the demand of sand. Hence, there comes a need to import sand from countries like Combodia and Malaysia which are sand surplus countries. So, to remove the possibility of extra charges for monopoly or charges handled by the demand-supply graph, it would be feasible for us to import sand from either Combodia or Malaysia in order to ensure uniform quality and price of the raw material.

B. Soda Ash



Soda ash, Na2CO3.10H2O, is an inorganic chemical with the formula Na2CO3 and its numerous hydrates (also known as washing soda, sodium carbonate, and soda crystals). All of the forms are water-soluble, colourless, odourless salts that produce moderately alkaline solutions in water. It was traditionally made from the ashes of plants that grew in sodium-rich soils. Because the ashes of these sodium-rich plants differed markedly from those of wood (which were originally used to make potash), sodium carbonate was dubbed "soda ash." The Solvay technique produces it in vast quantities from sodium chloride and limestone.

Sodium carbonate acts as a silica flux, decreasing the melting point of the mixture to a level that may be achieved without the need of specific ingredients. Because this "soda glass" is water-soluble, calcium carbonate is added to the melt mixture to make it insoluble. Glass for bottles and windows (soda-lime glass) is manufactured by melting sodium carbonate, calcium carbonate, and silica sand mixes. The carbonates in these materials release carbon dioxide when heated. Sodium carbonate is a source of sodium oxide in this way. For millennia, soda-lime glass has been the most popular type of glass.

To procure soda ash for the manufacturing of glass, we can forge a contract with any of the major industries in India, which can provide us the said raw material anytime needed and anywhere required at a uniform and reasonable price. We need to build a relation with not only one or two industries providing the said raw material but multiple industries as there may occur an instance when certain industries could not provide soda ash due to unavoidable circumstances and then, other suppliers can increase the supply to not stop the bottle manufacturing at Amul.

C. Limestone

Limestone is a form of carbonate sedimentary rock that is quite common. The minerals calcite and aragonite, which are distinct crystal forms of calcium carbonate (CaCO3), make up the majority of it. Limestone is formed when these minerals precipitate out of dissolved calcium-rich water. The minerals calcite and aragonite, which are distinct crystal forms of calcium carbonate (CaCO3), make up the majority of limestone. In limestone, dolomite (CaMg(CO3)2) is a rare mineral, and siderite and other carbonate minerals are much rarer. Calcite in limestone, on the other hand, frequently contains a little amount of magnesium. The calcite mineral structure, which is unique from dolomite, is preserved in high-magnesium calcite. Aragonite normally doesn't have a lot of magnesium in it. Clastic sediments (primarily fine-grained quartz and clay minerals) make up less than 5% to 10% of the composition of most limestone. Organic matter takes up about 0.2 percent of a limestone's composition, and rarely exceeds 1%

When lime, silica sand (SiO2), and sodium carbonate (Na2CO3) are heated together, a solution is generated that does not crystallise when cooled. Instead, it hardens into glass, an amorphous, transparent, and virtually colourless material. Glass does not have a definite melting point because it is a mixture rather than a pure compound; it softens gradually when it is heated. As a result, it may be shaped and blown into a wide variety of useful shapes. Another historic application of our substance is the manufacturing of container glass from lime.

For the procurement of limestone for glass bottle manufacturing, we can either contact the major industries producing limestones as a commodity or can participate in the government tenders whichever feels feasible. The team of Amul has to decide and analyse the pros and cons of both the ways and can also consider the possibility of importing limestone from countries producing limestone in bulk.

D. Cullet

Cullet is crushed glass that has a similar composition to the mineral mixture and is derived from regrind from earlier production runs and recycling sources. A glass batch may consist of 25 to 60 percent cullet by volume. It is included because its ability to melt in the furnace before the other minerals aids in the batch's transformation into molten glass. It's an essential energy-saving component that helps minimise greenhouse gas emissions by lowering the amount of

energy required for the melting process. Typically, the cullet brought in consists of glass fragments of the same colour that is to be manufactured. It does not create a problem as such if the cullet is of different colour than what is to be manufactured. In summary, cullet is recycled glass that serves to reduce the quantity of raw materials and energy used in the production of new glass.

Cullet is usually present in the factory itself in the form of broken and waste bottles which are not good enough to be used again. These unusable bottles and broken and abandoned bottles are collected and broken into smaller pieces, as shown in the above picture, which in turn is called cullet which is used in the manufacturing of future batches. To start the manufacturing, it might not be required to induce cullet into the manufacturing stream, but using it can be a lot helpful.

Hence, cullet can be procured from many sources like factories, warehouses and small dealers. Amul can use its industry relations to procure cullet easily without heavy investment as cullet is anyhow a waste for the industry, Amul by collecting cullet is only helping that industry by reducing its wastage.

2.1.1 Glass Making Oxides

Network Formers:
Glass is capable of producing network formers. These are oxides of such elements that have atomic diameters large enough to be encircled by four oxygen atoms in a tetrahedron. They build chains and networks that can exist in an entirely random order. All of them, when melted, may produce glass without the use of any other oxides.

Network modifiers:
This group has a considerable number of elements with large atom diameters, allowing them to have more than four oxygen atoms as nearest neighbours; in other words, the coordination numbers are larger. When these oxides are melted alone, they do not create glass since they produce regular crystals, but when they are melted together, the network formers become network modifiers.

Intermediate formers:

These cannot form glass on their own, but when used in conjunction with network formers, they can act as network formers, taking up the coordination number when the conditions are right. They can form in the presence of non-glass forming oxides.

Glasses can be made from a variety of oxide combinations to achieve the necessary hardness, thermal expansion, thermal endurance, thermal conductivity, density, viscosity, chemical durability, and other qualities in the final product.

2.1.2 Working With Raw Materials

Storage of Raw Materials:

After receiving and inspecting the raw materials, they are transported to the batch house, where they are stored under optimum ambient and dry conditions until they are used. After being treated, the cullet is stored in the cullet bay, and the sand is stored in the treated sand plant.

Treating Cullet and Sand:

With the use of a forklift, the cullet is loaded onto a conveyor belt. The cullet is transported by conveyor belt to a rotary silo, where it is washed with water and some contaminants, such as stones and bottle caps, are filtered out. The cullet is then transported to the cullet bay via a conveyor belt after it has been completely cleansed.

The remaining contaminants are plucked from the conveyor belt when it is transported to the cullet bay. The sand is loaded into an overhead silo and washed, following which it is passed through a filter to remove impurities such as dirt, stones, and other debris. After that, the treated sand is stored in a treated sand facility. The lower the iron percentage of silica sand, the more control you have over the final colour.

Analysis of raw Materials (in-use):

Raw materials that are currently in use in the production process are referred to as in-use. After that, samples of the in-use are transferred to a chemical lab for analysis. Moisture content, particle size distribution, alumina, silica, iron, magnesium oxide, and calcium oxide content, as well as batch analysis, are some of the tests performed on the in-use. These tests assist identify the physical and chemical composition of the in-use material that will be utilised to make glass bottles.

2.1.3 Batching Operation

A glass batch is just the combination of the necessary quantity of raw components. The batch house is where this process takes place. The batch house uses a variety of chutes, conveyors, and scales to measure, assemble, mix, and transfer the glass raw material recipe (batch) to the furnace. The actual batching process begins when the raw ingredients are transferred, weighed, and mixed before being sent to the melting furnace's charging end via a conveyor belt.

The batch house is where the glass-making process begins. The raw materials are brought to a weighing scale, where they are weighed, measured, and then loaded onto a conveyor that transports them to their designated silos.

To ensure optimum mixing with raw materials, the treated cullet is crushed to a finer grain particle size. After it's been crushed, it's mixed with the treated sand, and this mixture is known as Batch 1. It's then weighed, measured, and transported to its designated silo.

The moisture content of each raw material is taken into account at this stage in order to alter the furnace temperature at the furnace house as needed.

The raw materials are subsequently fed into an EME Batch and Cullet system via their appropriate silo chutes. After that, the machine mixes the measured in-use and sends it to a drier to eliminate any extra moisture. Cohort 2 is the name given to this second batch. It normally has a moisture content of 0.1-0.4 percent. The second batch is then transported to the furnace building to be melted.

The majority (about 90%) of glass goods are made using soda-lime glass stock, which is primarily made up of silica with about 10% calcium oxide and lime. About 5% of soda-lime glass also contains small amounts of aluminium oxide, ferric oxide, barium oxide, sulphur trioxide, and magnesia. Between 15 and 50 percent of the final glass composition is made up of cullet (recycled glass).

2.2 Hot End Processes

Hot End Processes is a series of processes which involves application of heat. Heat is the main characteristic in these category of operations and hence the name. These processes are generally carried out on the production floor. The operations are individually discussed below:

2.2.1 Melting Operation:

The furnace house is where this process takes place. The glass raw ingredients are melted in the furnace, which is a refractory structure. The furnace resembles a brick bread oven, although it is much larger. To survive the high temperatures reached during melting, it is coated with layers of refractory bricks.

After the glass batch is mixed in blenders, it is transported to the doghouse, a sort of hopper positioned at the back of a glass-melting furnace's melting chamber, where it is fed into the melting chamber through crew conveyors and the melting process begins. Sand, which is a primary component of glass, does not melt until it reaches roughly 3,000 degrees Fahrenheit. Sand, on the other hand, melts at temperatures considerably below 3,000 degrees Fahrenheit when mixed with other raw materials and cullet. To achieve a temperature of roughly 1565°C, a combustible mixture of natural gas and pre-heated air is pushed into the furnace chamber. This mixture creates torch-like flames that splatter across the batch, causing it to react and melt in seconds. Depending on the percentage moisture content of the glass batch and the percentage amount of cullet contained in the glass batch, this temperature can vary significantly. The quality assurance department normally conducts a test to determine the percentage moisture content of the glass batch and reports the results to the furnace house, which enters the information into the furnace control system to regulate the temperature.

Temperatures in the melting chamber reach a maximum of 1565°C. The degradation of raw ingredients in the batch produces a substantial amount of gas at these temperatures. Bubbles form in the glass melt when these gases combine with trapped air. Large bubbles float to the surface, but little bubbles are stuck in the melt in such large numbers, especially as the glass gets more viscous. Fining, a procedure that takes place largely in another portion of the furnace known as the conditioning chamber, is used to remove them.

The molten glass is permitted to move through a bridge wall from the melting chamber into the conditioning room, where temperatures are maintained at around 1500°C. The fine bubbles are dissolved back into the glass in this step. Diffusive mixing is also used to homogenise the glass. After the batch has been melted in the furnace house, it is transported from the conditioning chamber to the shaping machinery via a series of thin channels known as the forehearth.

2.2.2 Forming Operation

When making glass bottles, the blow and blow process is frequently used. Individual Section (IS) machines are commonly used to produce glass bottles with narrow necks. A rotating bowl pushes molten glass at its plastic temperature (1,050–1,200 °C [1,920–2,190 °F]) out of an aperture at the end of the forehearth, which is then sliced with a shearing blade to make a solid cylinder of elongated glass known as a gob. Each gob is a fixed weight and contains exactly the right amount of glass to construct a single glass container. The gobs are funnelled down chutes to a mould, where the glass is blown to an intermediate parison shape using compressed air at a pressure of 635 mmHg. The parisons are next gripped by a mechanical arm and swung across to the finishing mould, where they are finished by a second blowing operation at a pressure of 635 mmHg. From gob delivery to final formation, the entire process takes roughly 11 seconds. After that, a random sample of the glass bottle made from the glass gob is weighed to check that the gob fulfils the specified specifications. After cooling, the heated containers are placed on a conveyor belt and transferred to the lehr.

The elements that make up the container are held and moved by the shaping machinery. The machine is made up of 19 main mechanisms that work together to make a bottle and are powered by compressed air (high pressure 3.2 bar and low pressure 2.8 bar). The mechanisms are electronically timed to ensure that all movements are coordinated.

2.2.3 Internal Treatment

Following the forming process, some containers, notably those meant for alcoholic spirits (including aromatic schnapps), are given an inside treatment, also known as dealkalization, to strengthen the chemical resistance of the inside. This is commonly performed by injecting a high-temperature gas combination containing sulphur or fluorine into bottles. After forming, the gas is often fed to the container by a nozzle that directs a stream of gas into the mouth of the bottle. The treatment makes the container more resistant to alkali extraction, which can lead to product pH increases and, in some situations, container damage.

2.2.4 Annealing Treatment

Because different parts of the material travel through the glass transition range at different cooling rates and at different times throughout the glass-forming process, glasses frequently develop persistent strains. These stresses must be lowered by the annealing process in order to ensure dimensional stability and avoid the development of excessive tension in crucial locations. As a glassy solid cools through the transition region, its atomic structure relaxes.

When the glass is held at its annealing point, the time necessary for relaxation to be sufficient to eliminate internal tensions can range from a few minutes to a few hours when held at the lower temperatures of its strain point.

The glass bottle is then taken to the annealing oven after it has been correctly shaped and cooled (also known as a Lehr). “Hot-end” sprays of tin chloride solution are sprayed at the lehr entrance to impart a hard, abrasion-resistant tin oxide coating to the glass surface, and “cold-end” sprays of water-based polyethylene emulsions are applied at the lehr exit to make the surface more lubricious. The bottles are heated to around 580 °C (1,076 °F) in the lehr, then chilled for 20–6000 minutes, depending on the glass thickness.

2.3 Cold End Processes

The cold end's job is to spray a polyethylene coating on the containers for abrasion resistance and enhanced lubricity, examine them for flaws, package them for shipment, and label them.

2.3.1 Cold End Spray

This is a fully automated procedure. A layer of polyethylene wax is normally applied via a water-based emulsion at the cold end. This makes the glass slick, which protects it from scratches and prevents containers from adhering together on a conveyor. The resulting undetectable combination coating offers the glass an almost scratch-free surface. Coatings are frequently referred to as strengtheners because they reduce in-service surface damage, although a more accurate term could be strength-retaining coatings.

2.3.2 Visual Inspection

The purpose of a cold end inspection machine is to inspect containers for flaws, package them for transportation, and mark them. Glass containers are thoroughly tested by automatic machinery as well as by visual inspection to ensure that they are free of flaws. Checks such as finish, neck, shoulder, body, heel area, and base, dip inspection, wall thickness, dimensional inspection, side wall inspection, stress detection, and sealing surface and base inspection are examples of common flaws.

Inspection equipment collects statistical data and communicates it to the forming machine operators in the hot end, in addition to rejecting bad containers. Computer systems collect information on the container's mould faults. Operators manually perform a variety of tests on container samples, most commonly visual and dimensional assessments.

CHAPTER 3

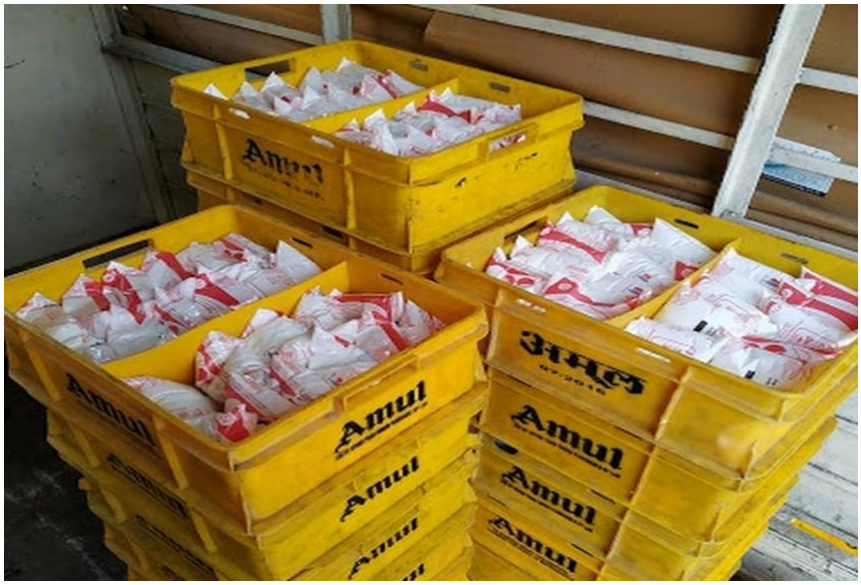
ALTERATION IN FORWARD SUPPLY CHAIN AND PROMOTION SCHEMES

3. ALTERATION IN FORWARD SUPPLY CHAIN AND PROMOTION SCHEMES

3.1 Supply Chain of Milk

The shelf life of milk and dairy products is extremely short. They are very perishable food items that rely on a fail-safe supply chain. The engagement of thousands of people in a country that is not only large but also diverse adds to the complexity. The company has been working to produce quality milk and dairy products since it sparked India's white revolution.

Amul collects milk from over 18,500 villages in Gujarat. A total of more than 160 million litres of milk is collected from local farmers from Gujarat's 17 district level member unions. The milk is tested for quality and accordingly the farmers are paid their amount. The milk is then collected in a big tanker which travels a huge distance to reach the processing plants of Amul. These tankers are temperature controlled which is also known as cold chain, in which a temperature between 4 to 6 degree centigrade is maintained. During the entire journey of the tanker, the milk in the container does not witness temperature change of more than a couple of degrees. This ensures the quality of milk as milk is a highly perishable commodity. Amul receives around 2000 milk tankers per day, with capacities ranging from 20 to 25 kilolitres. The fleet is equipped with Vehicle Tracking System (VTS) and GPS technology. SAP is used to optimise the routes of each vehicle, allowing for lower transportation costs and shorter turnaround times, while also enhancing overall efficiency.



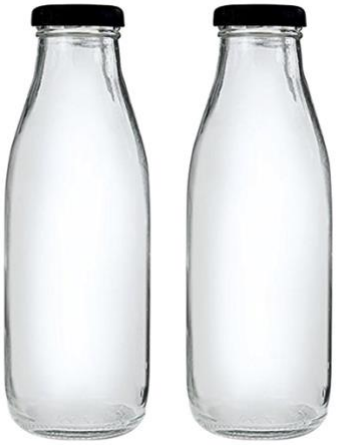
Once the milk tankers are transported to the plant, the milk is processed and several quality checks are performed. This processed milk is packed in the plastic pouches. These pouches are then to be transported to the retail outlets. GCMMF uses specifically built milk crates to ensure that milk pouches are not destroyed during transit. The milk pouches are arranged in a particular manner in a plastic crate, which is one of the automated processes in the plant itself. These make stacking the crates in cold storage and in a refrigerated truck container easy. The crates are to loaded physically on the trucks.

Rather than owning trucks directly, GCMMF is putting pressure on outsourced vehicles to maintain a rigorous framework for ensuring timely delivery. Each vehicle is overseen by GCMMF authorities and must adhere to strict guidelines. These terms and conditions correspond to those established by the relevant government authorities for the transportation of milk and dairy products in India. Amul have the advantage of being able to control their logistics directly. According to GCMMF sources, their logistics organisation is divided into four traffic distribution highways. Fresh products, ambient products, refrigerated products, and frozen products are all listed separately.

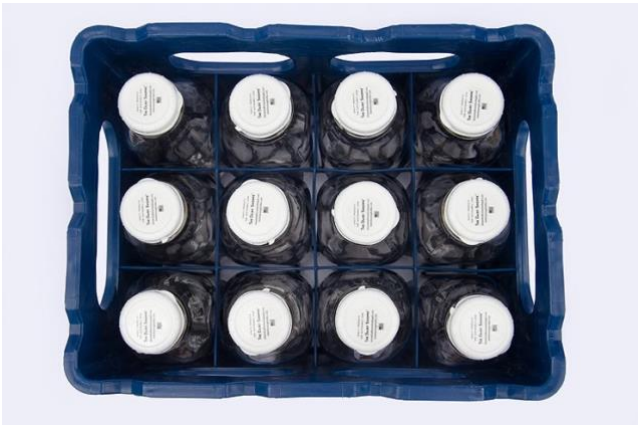
Insulated vehicles are used to distribute fresh items such as pouch milk, buttermilk, and dahi. In less than six hours, these trucks convey the items from the dairy plant to the final retail shop. Amul has production facilities near its major markets to accommodate this highly time-sensitive distribution. This helps to cover the distribution of items within a 250-300 km radius of where the products are made.

The supply chain is not yet complete. The milk pouches that are now at the retailers stores are supplied to the homes by various means. These means might be either the customer himself visits the nearest store to collect the milk pouches or the store person hires a person to deliver the pouches to individual households in the early morning. The milk is however available the whole day at most of the outlets, which solely depends on the nature of the customers visiting any particular stores. For example, at some stores, the customers visit throughout the day to purchase milk pouches and at some of the stores, the only means of milk supply is the hired person delivering pouches at individual households.

3.1.1 Change in Supply chain



All the procedure till arranging the milk pouches in the crate remains the same in case of the glass bottles SKU of milk. Further, the crate that is used in storing milk pouches is the same, but is a little different. The crate is made with different sections for bottles so that the bottles do not collide with each other while the transit. Moreover, the crate is padded with special foam like material which does not block extra space, but will provide proper cushioning and grip to the crate. This padding will hold the glass bottles at its place even when the vehicle is going through pits and cracks on the roads.



Along with the padding of crates, the floor of the part of the vehicle where the crates are going to be stored will also be padded with the same padding material as the crates. This will provide with extra padding and safety to the glass bottles during the rough transit of milk filled glass bottles.

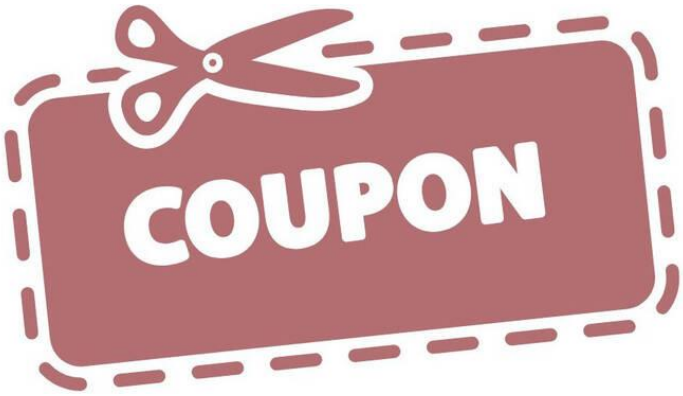
The people loading and unloading the crates will also have to be briefly trained to take care of the bottles made of glass. The crates filled with plastic pouches did not have to be taken care of and the handling hence was rough and fast. Moreover, extensive training is not needed as the crates are already padded which will absorb a lot of shock experienced by the bottles.

Another major change required is that now the bottles does not need to be sent to the retailers only, rather these bottles filled with milk has to be supplied to the homes of customers safely. For this, certain subscription models can be implemented to encourage customers to subscribe monthly for milk bottles and be a part of the essential reverse Supply Chain of Amul. We can also think of one other provision for the customers who does not want to subscribe for monthly schemes. The customers who does not subscribe for monthly scheme can be benefitted with schemes related to the returning of empty glass bottles. Both the schemes are discussed below in detail.

3.2 Promotion Schemes

3.2.1 Monthly Subscription Scheme:

In monthly subscription, first and foremost benefit for the customers is that the bottles filled with milk will be delivered to their doorstep every morning. This Scheme can be activated from the nearest Amul parlour by purchasing prepaid coupons which can last for an entire month. Even if the coupons required for the entire month were initially underestimated, the coupons can be purchased anytime within the month hassle-free. The customer will have to give this prepaid coupon to the delivery man at the time of accepting the delivery. The number of bottles delivered will depend upon the number of coupons returned by the customer. This is the extra facility or comfort provided to the customers who have subscribed for the monthly subscription plan. It is advisable that the customers call the respective Amul parlour beforehand, for example the night before the morning of delivery, about the extra need of bottles so that the delivery executive will take extra bottles with him along with the daily routine bottles. Anyhow, if due to any emergency, the customer could not inform the delivery executive, problem might not be faced because the delivery executive will already leave from the parlour with some extra bottles just in case.



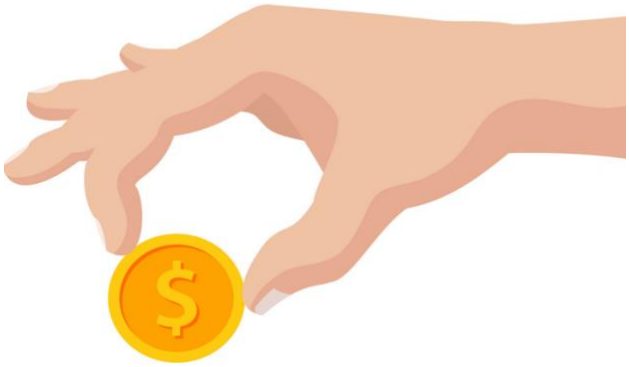
This delivery and monthly subscription plan will cost minimalist charges, which could be in the range of INR 1.00 to INR 1.50 per bottle. A part of this cost can be utilised by the company to cover the cost incurred in manufacturing of the glass bottles and a part of the same can be awarded to the delivery executive for the doorstep delivery. This will be a win-win scenario for all, the customer, the company and the delivery executive. Another benefit of subscribing for a month with the delivery plan will be that the customer would get a free coupon when he purchases more than 30 coupons at a time and a tub of ice-cream if he purchases 100 coupons

at a time. This will help Amul to encourage customers in adopting this plan which could in turn help company with the management of Reverse Supply Chain.

Initially the customers, who subscribe monthly for the first time, would be gifted with a glass bottle as a compliment from the company's side. Along with this, the customer would be given 1 or 2 spare bottles in case of breakage of the fragile glass bottle, or in case the customer might need an extra bottle of milk the next day. The customers can also put bottles outside their door of the house if the delivery man comes too early. This way, the delivery executive will collect the empty bottle from the door and put the filled bottle in its place. This way, if the customer requires 2 bottles instead of 1, he will put the extra bottle along with the regular bottle for replacement and the executive will understand that the customer requires an extra bottle. As the coupon also needs to be given to the delivery executive, the customer can put the same below the glass bottle as it will not get blown away because of the weight of glass bottle.

3.2.2 Non Subscription Scheme

It is totally logical if someone does not require a bottle of milk daily. Moreover, with the change of SKU from plastic pouches to glass bottles, the longevity and duration of the milk to get expired will be increased. This will help these type of customers to store the milk bottle in their refrigerators for more than a couple of days. Most of the customers who come under this type might be bachelors or students who live alone or share a home with other bachelors or students. Also a small house consisting of a couple can come under this type.



To encourage them to buy milk in the glass bottles and also return it back to the parlour, we can implement an attractive scheme. This scheme can be the types of awarding Amul credits

to the customers who return their used empty milk bottle. For example, for every empty bottle returned, the customer will be credited with 1 Amul coin in his account. This 1 Amul coin equals INR 0.50. So the customer can purchase whatever he likes with the adequate number of coins in his account. This account can be created in a very simple application developed by the Amul IT team. The account will have enough information to differentiate him from other customers and very easy for the parlour person to credit this coin in the account of customer.

CHAPTER 4

ALTERATION IN REVERSE SUPPLY CHAIN

4. ALTERATION IN REVERSE SUPPLY CHAIN\

4.1 Reverse Supply Chain

The Forward Supply Chain terminates when the milk filled glass bottles have reached the customers safely and healthily. The milk is then consumed by the customers in various day to day purposes like drinking milk, making of tea, curd, cream, ghee, etc. The purpose of the designing and implementation of forward supply chain has been fulfilled. Now for the reverse Supply Chain, these glass bottles that have been reached to the customers through various channels needs to be collected and sent back to the Amul plant for cleaning and reusing.

For the Reverse Supply Chain, the above discussed two channels will be required to be reversed. Also major part of the reverse supply chain is already discussed in the previous section along with the two schemes, the same will be discussed in this section with a little more depth.

The bottles collected from the customers by the delivery executive will be placed in the empty padded crate of milk bottles. These all crates will then be brought together at the respective Amul parlour. These crates will then be collected by the distributor's vehicle from all the different parlours. And finally these crates will be collected in the truck of the company and will be sent to the manufacturing plant for cleaning and refilling.

This Reverse Supply Chain of Amul is already very well developed that no changes is required to be made in the existing Supply Chain. Empty crates were anyways sent to the Manufacturing facilities for refilling with the plastic pouches. And in the newer reverse supply chain, the only difference is that the crates are different and the crates that will be going back to the manufacturing facility would not be empty, but will be filled with empty glass bottles. Other than the crates not being empty, no major changes in the logistics department is needed. All then goes to the important step which is cleaning and refilling.

Cleaning will be done in a special section near the manufacturing machine. The glass bottle will be cleaned with soap water, brush and finally will be rinsed with water before entering the blow dry section. The bottle will be blown dry completely with no amount of water present in the bottle and only then it will be entered into the refilling section of the plant.

The cleaned bottles will be now sent to the refilling section, where different types of milk will be filled in their respectively branded bottles. To make the sorting task easy, the crates will not be containing different branded bottles together. Rather the bottles of a single brand will be arranged in one single labelled crate. This will not only make the task of the shop floor workers easy, but also the process itself will be optimised and the productivity will be significantly increased.

CHAPTER 5

MERITS AND DEMERITS OF THE IMPLEMENTATION OF PROJECT

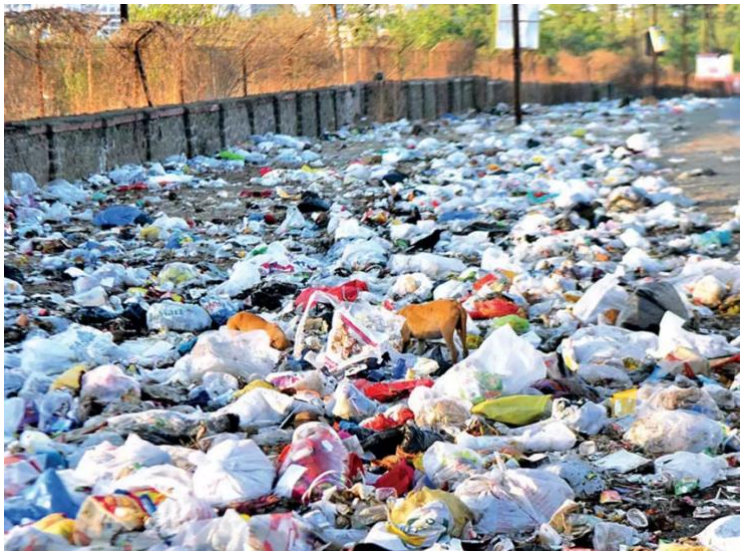
5. MERITS AND DEMERITS OF IMPLEMENTATION OF PROJECT

5.1 Benefits of Replacing Plastic pouches with Glass Bottle

It's crucial to know what materials to avoid when detoxing your house, but it's nearly as important to know what materials to choose! For two major reasons, glass is continuously favoured over plastic: it is better for people and for the environment.

5.1.1 Why not Plastic?

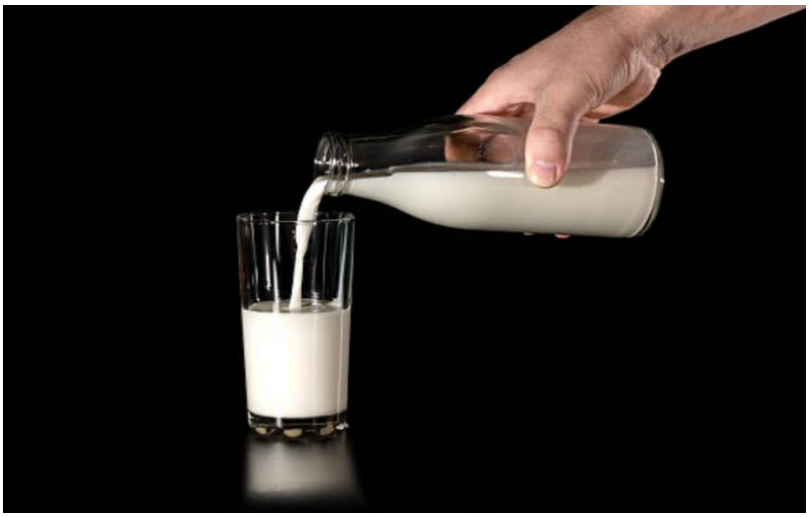
Endocrine disrupting compounds such as bisphenol-A (BPA) and phthalates are used in the manufacture of plastics. Some of these chemicals, such as BPA and phthalates, have been shown to have negative effects on the brain, hormone system, and reproductive system, as well as contributing to the development of cancer. The health impacts of the majority of chemicals have not been properly investigated. We also know that some of these chemicals can pollute air, dust, and hands, as well as leach into food and beverages.



5.1.2 Benefits of Glass for People

Plastics can frequently be replaced with glass. Here are four reasons why glass is a better choice for human health.

- Chemicals do not contaminate food or beverages. Because glass is free of hormone-disrupting chemicals such as BPA, these chemicals will not leach from the container into your food or drink. Using more glass food and beverage containers helps to keep your diet pure.
- Microwaving glass is safer than heating plastics. When plastic is heated, it is more likely to absorb chemicals, but glass does not.
- Over time, glass becomes safer. Even routine wear and tear, such as cleaning and use, causes plastics to leach toxins. Common practises with plastic containers, such as dishwashing and microwaving, enhance chemical leaching.
- Glass-protected food tastes better. Plastic is a porous material that can retain the flavours of food or products previously stored in the container. Glass is a non-porous material that does not retain flavours from previously kept things, potentially enhancing the “good taste” of nutritious foods.



5.1.3 Benefits of Glass for Environment:

Glass can also be beneficial to the environment. Here are three ways that selecting glass versus plastic helps the environment.

- Glass buyers purchase less things. People who buy glass containers have traditionally purchased fewer new pieces of glass than those who buy plastic containers. Beverages were sold in glass refillable containers before to 1935. Bottles were washed and refilled up to 20-50 times before being recycled when they got too scuffed to use. Refillable glass bottles are still popular around the world.
- Consumers are recycling more. Plastic is recycled less frequently than glass. Plastic bottles were recycled at a rate of 29 percent on average, while glass bottles were recycled at a rate of 37 percent, according to a research from the Container Recycling Institute.
- There are fewer harmful emissions. According to the book A to Z of D-Toxing, producing a 16-ounce PET bottle emits more than 100 times the harmful emissions to air and water than making the same bottle out of glass.
- The best thing about glass milk bottles is that they can be reused after the customer has finished drinking them. Glass milk bottles are washed and refilled after being returned, and then sent out to customers full of new milk. While there are transportation issues to consider, which are already discussed in the earlier sections of this project,

preventing the manufacturing of a new plastic pouch for each purchase of milk is a win for glass.

- Because glass requires twice as much energy to manufacture, it emits more CO2 throughout the manufacturing process than plastic when measured by weight. However, this is only true at the point of manufacture; when the increased energy requirements of a glass milk bottle are averaged over the lifecycle of a bottle that is used repeatedly, glass wins every time.

5.2 Demerits of Glass Bottles

As there are many benefits of using glass bottles for milk packaging, it has its own demerits. Afterall, nothing is perfect in a realistic world. To gain on something, or to improve on something, some or other aspect has to be compromised. Below is the list of demerits of using glass SKU for milk packaging and delivering.

- Glass is brittle in nature and hence can create a chaos in the storage section of the logistical vehicle.
- Broken glass can be hurtful and becomes a matter of concern for the guys involved in the handling of crates department.
- Also the glass bottles is heavy as compared to the plastic pouches which adds on to the already heavy weight on the vehicle. This heavy weight can reduce the mileage of the truck and due to this, the delivery agency might increase their charges on per delivery basis.
- Along with weight, glass bottles are rigid and are non-squishable unlike plastic pouches. This results in more space blockage and this also becomes a reason for less storage in the logistical vehicle, giving one more reason to the logistics agency to increase the price per delivery.

5.3 Conclusion

We studied the entire process of manufacturing of glass bottles, procurement of raw materials and all the necessary processes involved in the manufacturing. Along with this, we also discussed how to fit this change in the existing supply chain of Amul and put emphasis on the points where a change is needed to fit the changes well. Nearly the entire reverse supply chain is redesigned to empower the project and accommodate the visionary step of replacing plastic pouches with glass bottles to eliminate plastic in entirety from the milk range of Amul.

Along with this, we also discussed the merits on earth, people and demerits of implementing the replacement project. Looking at the demerits, the demerits are almost taken care of in the redesigning part of the supply chain and the reverse supply chain. The main demerit of implementing this project is the breakage of glass bottles. This demerit is taken care of by redesigning the crate and the floor of storage section of the delivering vehicle. This changes if implemented will nearly eliminate the breakage of glass bottles. Afterall, this is not the first time Amul is dealing with glass bottles. Amul already dealt with glass bottles SKU during the early phase of Amul KOOL products.

It is the high hour people as well as the companies should start thinking about the global problems earth and people are facing due to increased usage of plastic and increased plastic waste. Now is the best time to stop this, if not stop, at the least, reduce the usage of plastic from anywhere possible. Abandoning plastic pouches SKU for the milk by Amul will impact heavily on the step of reducing plastic footprint on the Earth. This step will also encourage other companies to remove plastic from their supply chain which will be a win-win scenario for all. Hence, if implemented, this step will surely be a revolutionary step in the history of Amul.

Helping Amul to Optimize Ordering Channel By Shifting To Online Mode

And

Lead Conversion of APO Requests

INTRODUCTION

It is observed that the retailers face a lot of difficulties ordering through the conventional mode, that is, In-person or Face to Face ordering model. To overcome the hurdles, Amul distributors came up with a little an advanced model which included not only In-person orders, but also accepted orders through WhatsApp text, Text messages and Phone calls. This solved many of the problems for the retailers but there were still some problems which prevailed. To solve all this problems, Amul introduced an online application with the name 'Amul Cart'.

Amul gets a number of requests from prospective clients to open an APO, that is Amul Preferred Outlet. These requests need to be catered to by attending their requests and explaining them all the details of opening the APO. An APO is the outlet where all the Amul products are sold exclusively, without any other branded products to be sold together.

AMUL CART

Amul cart is an application where the retailers and the distributors are connected through online mode or platform. Through application, the retailers could place order 24*7 without any constraints. Also by the introduction of online mode, the retailers could now transact through online modes like UPI or Debit/Credit cards online. However, the retailers could also continue their existing payments mode which included cash, cheques, etc.'

Another major advantage of using application for the retailers as well as the distributors is that the tedious and error prone task of book-keeping is entirely replaced by the online application. The retailers need not maintain any book record to tally the ordered and delivered products. All they need to do for the tallying is to open the application and check for the quantities ordered.

Also the ordering channel is more clean and rapid for both the parties as while ordering, the distributors need not tell the retailers manually about the products that are not available. All the products that are available will be delivered by the distributor while the products not available will be intimidated by the delivery official while delivering the order. This fastens and eases the tiring process of ordering for products.

The retailers are also rewarded with some benefits for using and embracing the newer online mode of ordering the products through Amul Cart. To be eligible for the reward, the retailers need to apply for the KYC process.

INTERNSHIP TASK

Most of the retailers are not well equipped with the technology and English language. The main task was to encourage the retailers to embrace the application and making them aware about the benefits of using the application.

After retailers agree to use the newer mode of ordering Amul products, the next step is to teach them to first of all create an account. All they need to create an account in the Amul Cart app is the retailers code, which can be found from the bills they get from ordering products from the distributors, their registered mobile number and a password of their choice. The retailers can right away start ordering after creation of the account. A video tutorial was also made by the company to be circulated among the retailers so that they could watch and learn in case they are not well versed with the technology.

However, the biggest challenge faced in this task was to convince the retailers to change their yeas old method of ordering Amul products. Most of the retailers were resistant even to try the online application stating they are comfortable enough in the existing mode of ordering. Even if they verbally agree to try out the application, it took a number of follow-ups to actually make them use the application for ordering through it.

I also collected the problems faced by the retailers in ordering through the application and solved most of them on my own and the rest were communicated to the Amul team to be resolved on the immediate basis. Feedback is very important when a company decides to start something new. The feedbacks were collected from the retailers and were communicated to the team to optimise and improvise on the application so that it becomes more useful and less difficult for a non-tech-savvy to order through the application.

Other main task was to attend the APO requests by explaining the prospective clients about the details and pre-requisites in opening the APO. The clients needs to be intimidated through the entire process of opening the APO. Before that, the clients also need to be intimidated about

the profit margins and the benefits they are entitled to after opening the APO. They are to be guided from scratch about the details starting from suggesting an area to open the APO, The square feet area required, etc. Prospective clients were advised to open an APO near their residence, so that their travelling cost and time is minimised and they could pay more attention to the APO to maximise their sales, turnover and profits. They also needed to be acknowledged about the number and types of refrigerators they needed to install in the APO, along with brand suggestion so that the clients could get maximum discounts due to the partnership or tieup of Amul with those brands.

All the prospective clients who apply for the request are 50% in the decision of opening the APO. The main challenge faced in this internship was to make them 100% firm about the same idea and go ahead with actually opening the APO. The key task in the internship was doubt clearing of the prospective clients. I was trained by my mentor through an online training session in which, all the possible questions by the retailers was thoroughly explained so that I could cater to their questions efficiently and effortlessly.

PART C

LEARNING

This internship was truly enlightening and helped me gain a lot of insights on how new projects are implemented in a company. It also helped me to apply some of the textbook topics into the project to actually give the project a sense. Some key learnings of the project is described below

- Studying the supply chain of Amul gave me a lot of insights on how a big scale company like Amul manages its supply chain efficiently and effortlessly.
- Redesigning of the reverse supply chain and thinking about the promotional schemes needed a lot of brainstorming which led to many innovative ideas.
- Learnt the process of manufacturing of glass bottles in detail through exhaustive research.
- Got to know about the raw materials needed to manufacture the glass bottles and how they are used in the various processes.
- Brainstormed about the ways to save the glass bottles from breaking and eliminate the risk of breakage while transportation of glass bottles from the manufacturing facility to various distributing outlets.
- While carrying out the task of optimisation of the ordering channel, I had to interact with a lot of retailers. This taught me to deal with people, which is a great soft skill necessary to survive in this ever-competing world.
- Patience and perseverance and constant efforts was the key to convince people to embrace newer and upcoming technology, which is a very important skill in the upcoming, tech savvy developing markets.
- Got to know a lot about the Amul Preferred Outlets and how to open them and also explained the prospective clients about opening of an APO.
- Learnt how to extend the business arm by convincing people to open APO, by explaining them the benefits of opening an APO. Also explaining them all the minor details for opening an APO and the doubt solving of the same gave me a thorough insight of the APO and APO opening process.

REFERENCES

A. (2012, December 2). *Various categories of products from Amul*. India Study Channel. https://www.indiastudychannel.com/resources/157161-Various-categories-of-products-from-Amul.aspx

amul.com. (2020). *Organisation :: Amul - The Taste of India*. Amul. https://www.amul.com/m/organisation

Maheswaran, P. (2021, March 10). *GLASS BOTTLE MANUFACTURING PROCESS – STEPBY STEP PROCESS*. Ceramic Ninja. https://ceramicninja.com/glass-bottle-manufacturingprocess/

Ekpo, K. (2018). *GLASS BOTTLE MANUFACTURE*. Academia.Edu. https://www.academia.edu/22238294/GLASS_BOTTLE_MANUFACTURE