

**MASTERS OF ADVANCED ENGINEERING MANAGEMENT**

**STUDY OF SUPPLY CHAIN IN BRITISH AMERICAN  
TOBACCO COMPANY BANGLADESH LIMITED**

**BY**

**ABM MASHUD RANA KHAN**

This thesis has been submitted in partial fulfillment of the requirement for  
the degree of

**MASTERS OF ADVANCED ENGINEERING MANAGEMENT  
(AEM)**

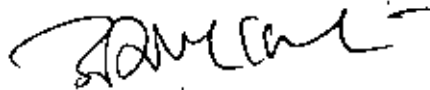


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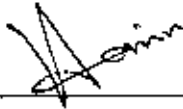
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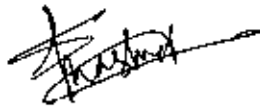


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## ABSTRACT

Supply chain concept is almost new in the developing countries like Bangladesh. In Bangladesh, British American Tobacco (BATB) works with implementing supply chain management at stage-3 of supply chain maturity model. The departments include in BATB supply chain management are material management, demand management, production management, spares management, finished goods distribution management, transportation management, leaf planning and import/export management.

In this project BATB supply chain system was studied along with their demand and forecasting processes, procurement process of leaf, wrapping materials and indirect goods and services. The whole project was carried out with the guidance of BATB supply chain manager, procurement manager of direct materials, procurement manager of indirect materials, demand manager and logistics and planning manager.

After studying BATB supply chain, it was found that BATB procured leaf for few brands and about 40% of wrapping materials locally. BATB supply chain department is strongly involved in such localization process of raw materials and successfully implemented the Kanban inventory control system that further moving toward JIT.

Procurement processes of BATB indirect goods and services also discussed with presenting a portfolio of indirect goods and services in Appendix - B.

Forecasting of few brands of BATB products are shown and discussed, and a sample of BATB service level agreement with their wrapping material supplier presented in Appendix - A as well

In the simplest term, a supply chain encompasses all processes, procedures, activities and actions involved in planning, sourcing, producing and delivering of finished products. In general, the supply chain connects all the activities from selection of raw materials to delivery of finished product into wholesale or retailer. However, moving the product through its various stages of development is not the story, because at the same time product moves forward along the supply chain, there is something equally important moving in the opposite direction i.e. information. Typically, complexities are raised in a manufacturing process through the addition of raw materials procurement, distribution of the finished products and finally inventory management for both the raw material and finished products. The consequences of these complexities are high inventory, profitability reduction, poor quality, poor availability, poor services, long lead time and lower revenue. Supply Chain management is the key element to reducing the above complexities and ensuring uninterrupted supply of plan & materials to manufacturing facility.

**1.2 Background and present state of the problem**

British American Tobacco Company is the world's leading multinational tobacco company operating with 85 factories in 66 countries and producing about 800 billion cigarette sticks per year. For more than 100 years, it has been building an international reputation for producing high quality tobacco products to meet the diverse preferences of consumers. As leader, BATB focus on quality and excellent distribution capabilities enable the company to deliver consistent quality premium products. In an era of intensified competition the company needs to retain its goodwill as well as to increase the quality of its products to face the challenges of the 21<sup>st</sup> century. So it tries to enhance better performance in all the sectors. Ensuring the supply of quality raw materials is one of the key areas where BAT needs to keep proper vigilance. BATB has grown up with a strong 'Supply Chain' department which consists of different departments ranging from procurement of raw materials to customer service.



finished goods to customers, indirect goods & services to all functions while optimizing customer satisfaction.

In today's rapidly changing business environment, ever greater demands are being placed on business:

- to provide products and services quicker
- with greater added value
- to the correct location
- with controlled inventory position

Customers want more quality, design, innovation, choice, convenience and service and they want to spend less money, effort, time and risk. The supply chain of a company consists of different departments, ranging from procurement of materials to customer service.

"Supply Chain" is not a new concept in this modern era but, it is not widely structured in the developing countries. In the present context of Bangladesh, few multinational and national companies are imitating "Supply Chain" system. British American Tobacco, Bangladesh is one of them. The main purpose of the project is to reviewing the "Supply Chain" system practiced in British American Tobacco, Bangladesh, finding out the present problem and future direction for the lessons for others to benefit.

### 1.3 Objective

The study of supply chain system in BATB is basically aimed at:

1. Conceptual understanding of end to end integrated supply chain
2. Study of demand planning processes
3. Study of supply chain process, systems and practices in British American Tobacco, Bangladesh focusing specially on sourcing as below:
  - Procurement processes of direct materials
  - Procurement processes of indirect materials
  - Study of logistics systems and activities in logistics operations
4. Development of a scheme of procurement of indirect materials and its integration into the main supply chain system
5. Study of difficulties in implementing the supply chain management in BATB



#### **1.4 Scope**

Supply Chain Management means transforming a company's "supply chain" into an optimally efficient, customer-satisfying process, where the effectivity of the whole supply chain is more important than the effectivity of each individual department. So from the definition, it is obvious that supply chain and management have a vast area of study. The system varies from company to company. Here the report is limited to the study of 'Supply Chain' system of British American Tobacco, Bangladesh. The report is further limited to the study of 'Procurement' function of BATB. It does not explain evaluation procedure of any other local or foreign suppliers in other product categories. No other evaluation procedure is followed to prepare this report. It also does not give comparison of a number of suppliers in the similar industry. However, this may be a useful guide for the organizations highly dependent on supply of direct and indirect materials. They can get valuable suggestions to prepare questionnaire and conduct evaluation of their suppliers from it.

#### **1.5 Outline of Methodologies**

The study will be carried on,

- a) with the attachment of BATB experts and gaining introductory knowledge about planning, scheduling, procurement and distribution processes
- b) visiting the factory, study of product profile and manufacturing process with quality control
- c) analyzing the previous sales data and evaluating the future demand by forecasting method
- d) analyzing the category of indirect materials and preparing a portfolio of indirect material



## 2.1 British America Tobacco Group: An Overview

The British American Tobacco Group is one of the world's leading multinational manufacturers of some of the best cigarettes whose brands are sold in 180 markets around the world. It is a company who is a leader in one of the most controversial industries and among its rivals.

BAT produces high quality tobacco products to meet the diverse preferences of millions of consumers, and work in all areas of business – 'from seed to smoke'. The companies are committed to providing consumers with pleasure through excellent products, and to demonstrating that they are meeting its goals in ways that are consistent with reasonable societal expectations of a reasonable tobacco group in the 21<sup>st</sup> century.

The Group consists of four tobacco subsidiaries as follows.

- British American Tobacco Company Limited, which produces cigarettes in 66 countries having 85 factories with an overall market share of 14.6%. It has market coverage in Europe, Australia, Latin America, Asia and Africa
- Brown & Williamson Tobacco Corporation, the third largest tobacco company in the US
- British American Tobacco Company (Germany)
- Souza Cruz S.A., the market leader in Brazil and a world leader in tobacco leaf export

British American Tobacco Group is the second largest stock market listed group by the global share. Having leadership over 50 countries, the company sold around 777 billion cigarettes representing the global market share of 14.6%

BAT came into operation with one objective, to seek market leadership in all countries where a market exists. Tracing back to the heritage when Imperial

Tobacco Company of UK joined with American Tobacco Company of US, in 1902 the evolution of British American Tobacco Company came to a success. The differentiated portfolio of brands includes well-established international brands such as Lucky Strike, Kent, Dunhill and Pall Mall, Benson and Hedges, John Player Gold Leaf, State Express 555, Star, etc

British American Tobacco acknowledges the controversial nature of their business. The aim of the Group is to have an open and constructive dialogue with their internal and external stakeholders to demonstrate the effectiveness of being a responsible company by selling quality products. They aim to strive for better performance socially and commercially by selling pleasure to those who have already started smoking and prohibit those who have not, through different anti smoking media communication

## **2.2 Business Focus**

Cigarette poses risk to health and raise important questions about how to define responsible product stewardship. However, BAT believes that they can successfully balance the economic with social and environmental dimensions of their performance through acting and demonstrating responsible activities to create a socially responsible company image among their consumers. In a society where expectations from multinational companies have become increasingly high, BAT recognizes that they must achieve the trust of the society where they operate. Through embedding the principals of Corporate Social Responsibility (CSR), by having open talks with key stakeholders and end users, . BAT decides to take CSR as a Strategic Imperative for their operation in the industry

## **2.3 BAT Regions**

The Group has a robust position in all regions. Their broad based portfolio of international, regional and local brand provides them the platform for achieving global leadership of the tobacco industry. As a business that has grown from the international roots, British American Tobacco is not a typical 'western' organization. A key feature of the group is its devolved structure, with each local

company having wide freedom of action and responsibility for its market operation through standard marketing practices.

Extent of operation of British American Tobacco Company is given below:

- **America-Pacific**

The United States is the largest market in the America-Pacific region where their US subsidiary Brown & Williamson, is the third largest cigarette manufacturer and marketer.

- **Asia-Pacific**

British American Tobacco operates with large amount of production coming from market of China, Indo-China, South - East Asia, and Australasia.

**Latin America**

The Latin America regions comprise Mexico, Latin America and the Caribbean, with a group sale in these markets, BAT has an over all market share of 50%, BAT is the largest tobacco company in the region.

- **Europe**

The European region covers more than 50 markets with leading brand Lucky Strike, Pall Mall, and Rothmans. The Tobacco industry has been developing rapidly in Eastern Europe and has significant interest in several markets including Russia, encompassing the fourth largest market for BAT

- **AMESCA**

The AMESCA region comprises over 80 markets in Africa, Middle East, South Asia (India, Burma and Bangladesh) and Central Asia. Group cigarette sale in 2000 were some 238 billion.

## **2.4 BATB History**

BATB started its journey as Imperial Tobacco Company Limited in the undivided India in 1910. Having its head office in Calcutta, in the year 1926 a branch office was made in the Sales Depot of Moulovi Bazar.

Cigarettes were made in Carreras Ltd., Calcutta. Imperial and Carreras merged into a single company in 1943. After the partition of India, Pakistan Tobacco Company was established in 1949 with head office in Karachi. The then East Pakistan Office was situated in Alico Building, Motijheel. In 1954 PTC established its first cigarette factory in Chittagong, Bangladesh, although high-grade cigarettes still came from West Pakistan. In 1965, the Dhaka factory of PTC went in full production.

After independence, Bangladesh Tobacco Company (Pvt.) Limited was formed in 1972 under the Companies Act 1913, with the assets and liabilities of PTC. In 1973 BTC (Pvt.) was converted into a public limited company. British American Tobacco played a pivotal role in BIC's creation in 1972 and since then has been involved in BIC's development every step of the way. BTC has proved to be the perfect representative of BAT by manufacturing and marketing quality brands, which met BAT standards. In March 1998, BTC changed its name and identity to British American Tobacco (BAT) Bangladesh Company Limited to articulate the successful relationship with British American Tobacco.

## **2.5 The Business**

Operating in the country since pre-independence, the company headquarters and cigarette factory are based in Dhaka, with a green leaf threshing plant in Kushtia. The company currently employs more than 200 managers and has a work force of 14,000 workers and 14,000 registered farmers in its Kushtia threshing plant producing the world finest tobacco and exporting to other countries and other tobacco companies locally.

British American Tobacco Bangladesh (BATB) is listed in the Dhaka Stock Exchange (DSE) with an authorized share capital of Tk. 600,000,000 comprised of 60,000,000 ordinary shares of Tk. 10 each. With a market share of 48%, 65.91% of

the company's shares are held by Raleigh Investment Co. Ltd, UK; 26.99% by Investment Corporation of Bangladesh, 2.86% by Shadharam Bima Corporation; 0.84% by Bangladesh Silpa Rin Sangstha; 0.65% by the Government of Bangladesh; 0.52% by Sena Kalyan Sangstha and 2.23% by others.

## **2.6 The Brands**

Among BATB brands some are centrally managed, some are regionally managed and others are locally managed. For management purpose, the brands have been categorized into two segments: Strategic Brands and Tactical Brands. Due to resource constraints and the impossibility to support all the brands simultaneously, the company provides all its support to the strategic brand portfolio that has long-term business potentiality.

**Star** is one of the fastest growing brands in Bangladesh cigarette market. Launched in 1964, the brand has evolved remarkably over the years. With its rich heritage and consistent quality, the brand has satisfied millions of smokers and became one of the leading national brands in Tk. 1 price segment. The brand is rejuvenated this year with a new & modern pack and imagery communication.

**John Player Gold Leaf (JPGL)** was introduced in Bangladesh in 1980 and from 1995. The success story began with the change of old pack to current red & white pack in 1995. JPGL reached 500 million sticks per month within 5 years (in 2000) after the change.

**Benson & Hedges** was launched in Bangladesh in 1997. Benson & Hedges has come a long way with enormous growth (nearly 90% over 2001) and now stands as one of the largest B&H markets in the world. In its continuous drive to uphold premium-ness and superior image, Benson & Hedges has gone beyond the cycle activities to engage directly with its consumers through exclusive events and direct one-to-one communication tools.

## **2.7 Vision, Mission and Strategy**

British American Tobacco's Vision internationally is:

*"To be the world's number one international tobacco group and to perform within the top-tier of global companies in terms of sustainable profit growth".*

BATB's vision is:

["To extend leadership through World Class Performance"].

BATB is already a leader in the Bangladesh cigarette market. In the future the company wish to extend the present leadership through world class performance. The company believes that the management already possesses world class product and people. Right now they need to concentrate on improving their process capability. This company proved itself to be a world class company by achieving the prestigious MRPII recognition. Now the whole process is going to accelerate more and altogether it will reach the level of world class performance and gradually it will extend its leadership in all aspects in a very competitive environment

Company's missions are:

Growing our share of the total tobacco market

The bidi segment has captured the major share of the total tobacco market. BATB plans to upgrade the smokers in the country and wishes to transfer their smoking habit from bidi to cigarette. This is also coherent with the first objective of the mission as more people will start smoking BAT brands instead of bidi, more the revenue will increase.

Dominating key identified segments

The total brand portfolio of the company is divided into 3 major segments- high, medium and low. BATB is already dominating the high and medium segment in the market. But it is facing tremendous competition in the low segment. BATB wishes to dominate all the key identified segments and they are planning accordingly. The company doesn't have any brand competing in the very low segment.

To meet this vision and mission, the company's strategy is based on six tactical imperatives:

- Focused brand portfolios communicated through state-of-the-art adult smoker engagement programs.
- Industry leading product portfolio, designed to address consumer needs and societal expectations.
- Optimum product availability through world-class customer services.
- Leading positions in priority markets.
- Recognition as a responsible company in an industry seen as controversial.

- A winning environment inspiring passion for the business, talented people and personal fulfillment.

## 2.8 Relation with the parent company

The following figure shows the flow from the parent company to BATB

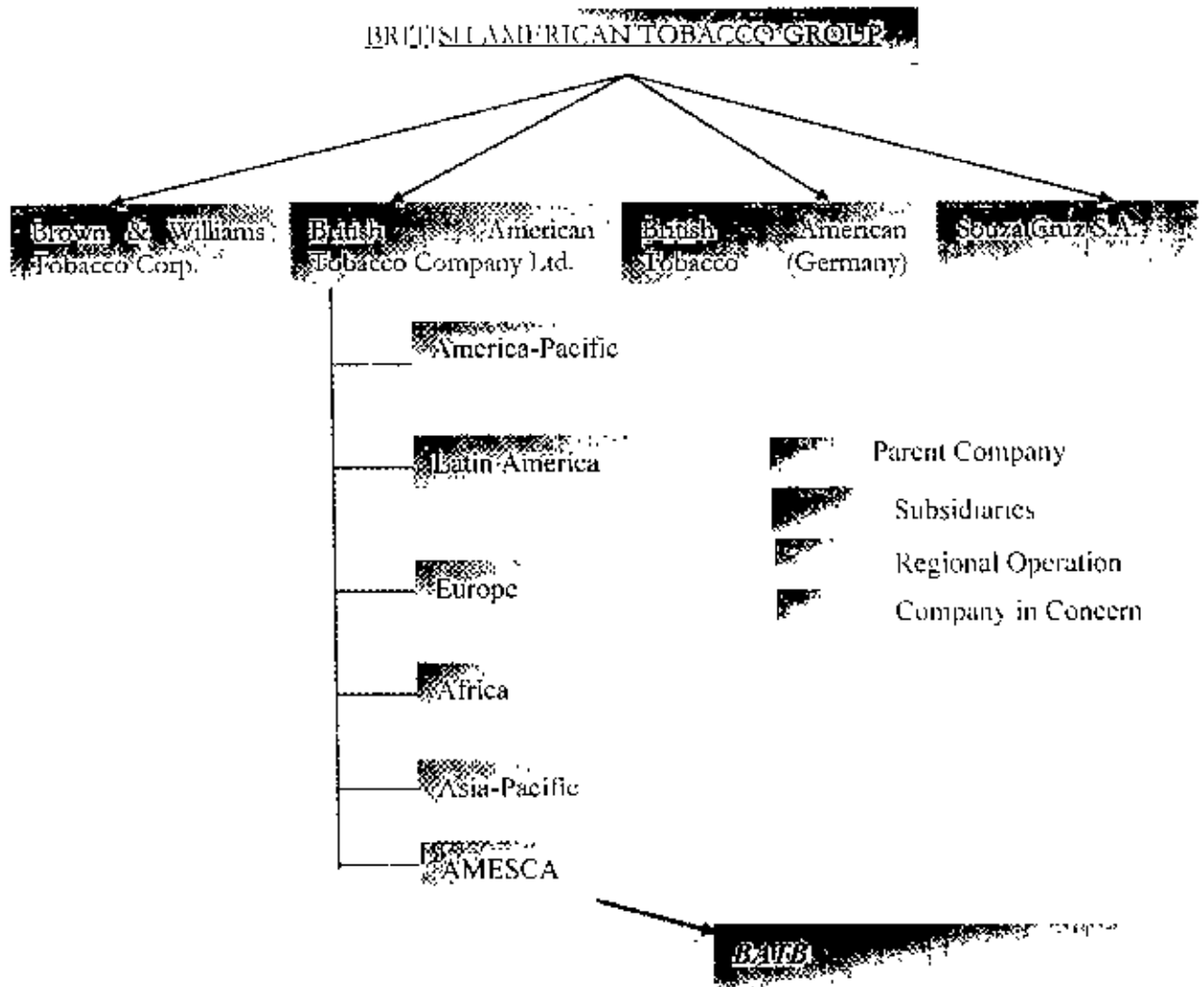


Fig. 2.1: Relation with the parent company to BATB

## 2.9 BATB Organizational Structure

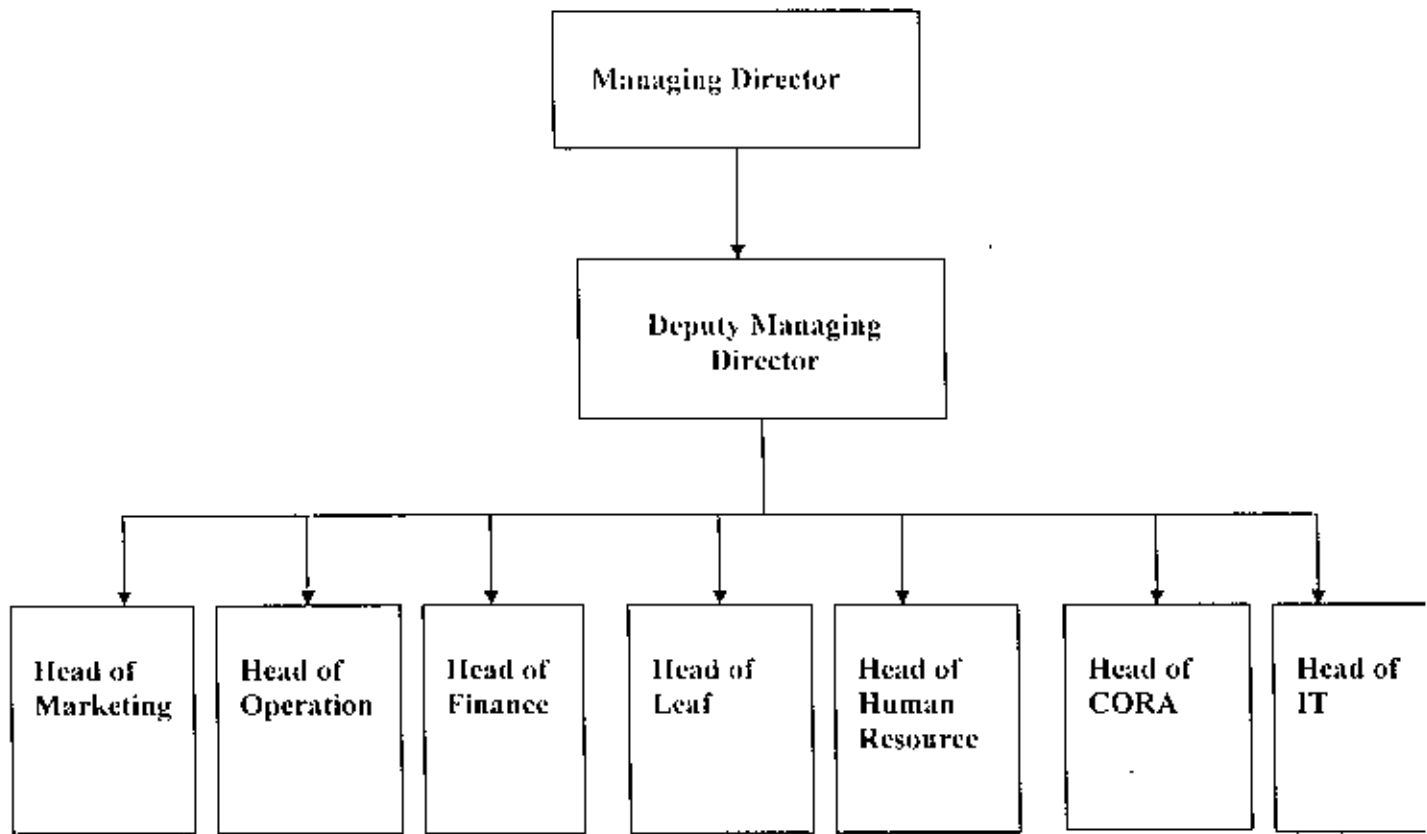


Fig.2.2: EXECUTIVE COMMITTEE

## 2.10 Employees and Trade Union

The employees of BATB are dynamic, self-motivated and energetic to perform any assigned job, because they are selected on the basis of excellent academic background and experience. The workers are labelled as follows:

- Permanent.
- Temporary (Seasonal).
- Badli.
- Casual.

Trade Union exists in the Dhaka factory and in Green Leaf threshing plant at Kustia. The management of the company are less hierarchical and thrives on



challenging tasks. They are guided by the principles of the organisation. Everyone in the company shows a winning attitude and horizontal form of the management encourages everyone in the company to share ideas and show leadership qualities. The management shares views and ideas so as to achieve the results according to the guiding principles.

## **2.11 Physical Infrastructure**

The infrastructure of the company has a broader field where the company plays its important role. **DATB** has 6 Regional Trade Marketing Offices (RTMOs), 12 Regional Sales Depots, 1 Factory, 1 Green Leaf Threshing Plant, 7 Leaf Depots and a Head office consisting of Corporate Head office and Production Head office. The Company's Head office and Cigarette factory are located in Dhaka. A Green Leaf Threshing (GLT) Plant has been set up in Kushtia and it started operation from April 1995.

The company's products are manufactured in the factory at Mohakhali, Dhaka. The Plant Manager who reports to the Production Director at the Head Office heads Dhaka factory. The company procures tobacco leaf maintaining the international standard and it imports processed tobacco leaf for its international brands. It procures green tobacco from the registered farmers of the leaf area mainly for its local brands. To perform its sales and distribution smoothly, the company operates 10 sales depots in different locations of the country and it has 63 authorized distributors.

## **2.12 Tobacco Cultivation in Kushtia**

Tobacco cultivation in Kushtia Leaf area was first introduced in 1967 with an area of 10 acres. It was expected to expand to 650 acres by 1971. Flue-cured and air-cured tobacco were cultivated in Kushtia and the Leaf Department achieved self-sufficiency in cigarette tobacco by 1975. Tobacco cultivation through registered growers and procurement of the product, tobacco is done through four leaf depots in Kushtia. Those depots are Meherpur, Jhenidah, Chechua and Allardarga Leaf Depot. Kushtia Leaf Factory stands on 4.31 acres of land and is located at about three

kilometers away from main town. A team of management including the Plant Engineer, Processing Manager, Shift Manager, Quality Control Manager, Leaf Account and the Leaf Operation Manager is managing the GLUT plant. The Plant Manager is the team leader of GLUT management team.

## **2.13 Societal Marketing**

### **Environment, Health and Safety**

All the activities in the manufacturing unit and Green Leaf Threshing Plant ensure that work is conducted in a manner to minimize environmental pollution. Kushtia a GLUT has won British American Tobacco's EH&S (Environment, Health and Safety) Merit award for the year 1995 and 1996 for achieving consecutive two years of operation with zero accident. The company also received the prestigious EH&S Silver Award for 1999 and 2000 without any lost time accident in any part of the company, which was the second year in a row.

### **A forestation**

British American Tobacco Bangladesh initiated this well recognized program to create mass awareness of the need for Afforestation with the free sapling distribution program in 1980. Today, after more than two decades, it has contributed more than 42 million saplings to the country's Afforestation initiative. The survival rate of this saplings stands at 90%. Most of these plants are located in Kushtia, Rangpur, Manikgonj and Chittagong regions including the hill tracts. The trees have mostly been planted along roadsides, canal banks and farmers' landholdings. In 2003, 3.5 million saplings in the ratio of 85:15 for exotic versus native species were raised countrywide for distribution. The Afforestation program extends its realms in the city from 1993, when the company started distributing saplings in Dhaka. As a mark of national recognition, the company received the Prime Minister's 3<sup>rd</sup> prize in 1993 and 1<sup>st</sup> prize both in 1999 and 2003 for free plantation.

### **Vegetable Export**

This project of BATB is primarily aimed at helping the country to earn foreign exchange through export of quality processed vegetable from Bangladesh thereby

playing a dominate role of development partner of the country. This will also create new opportunities for BATB's contract farmers who will be growing vegetables based on third party orders. The company in joint collaboration with ATDP is assigning farmers in growing quality vegetables and facilitating the marketing of their products abroad through a UK based food processing company. Till now 325 tons of vegetables have been ordered by Eurasia Food Processing (BD) – a 100% export oriented food processing UK Bangladesh joint venture company.

## **2.14 Commitment to Developing the Future**

British American Tobacco has over the decades consistently invested in the Bangladesh market through BATB. Thus BATB has always been in the business of manufacturing and marketing brands that meet standards found anywhere in the world.

The company believes in attracting the best talent available by offering a challenging working environment with international career development opportunities. Individuals here are entrusted with significant responsibility and autonomy, and investment in people through regular training and career development has helped to establish a culture, which encourages people to think creatively, generate new ideas and approach problems from a number of different perspectives. In the quest of becoming a World Class Company by achieving the visions, strategic imperatives and the values, the company has launched a change management program called – *Winning In Our World* in 1999. The objective is to bring about a cultural change by embedding the *WOW* Values and removal of barriers. To this effect the company has organized different workshops, employee care and development activities throughout the year with direct participation of its people.

### **3.1 Corporate and Regulatory Affairs (CORA)**

#### **3.1.1 CORA: Overview**

The Corporate and Regulatory Affairs Department (CORA) of the company is dedicated towards achieving the company's strategic imperative, which is: *To be a responsible company in an industry seen as controversial.*

Globalization and increased scrutiny of businesses by consumers and the general public mean that companies are today judged not only by the quality of products that they produce but also the manner in which they carry out their business activities. It is therefore, an imperative that corporate bodies are responsible not just in their businesses but also in the social domain that they operate in. British American Tobacco's philosophy has been to be conscious corporate citizens wherever they operate, respectful of local cultures.

The company recognizes that it manufactures a product, which carries significant risks. In this light, the company believes that only informed adults should use its products and that under-age persons should not smoke. It also believes that the company must act, behave and carry out its business activities in a manner accepted by society at large as responsible. This includes dissemination of the company's positions on issues.

The Corporate & Regulatory Affairs function is charged with driving reputation management to the heart of the business and ensuring the company's involvement as a leading development partner of the country.

### **3.1.2 The CORA Vision**

*“To become the most respected FMCG Company among key stakeholders”*

Reputation management involves identifying and prioritizing the company’s stakeholders and preparing and implementing plans to engage and communicate with these stakeholders.

### **3.1.3 Structure of CORA**

The Corporate and Regulatory Affairs Department programs are lead by the Head of Corporate Affairs who is assisted by the Company Secretary and the CORA Managers. The company’s Legal and secretarial function also reports in to the Head of CORA. The Company Secretary looks after the legal sides of the company such as trademark Protection, Infringement of Company Rights, Distributor Agreement, and Trust Fund etc. He also looks after the share market activities of BAT shares.

### **3.1.4 Activities of CORA**

The Corporate and Regulatory Affairs Department of the company is dedicated for maintaining a good image of the company to the society by keeping customers, media, government, suppliers etc. contented. The company believes that as a corporate citizen, it has a conscious duty towards the societies well being. The company promotes and sponsors various community development programs to increase its image in the society

The department maintains good and continuous liaison with the media, government and other groups in order to protect its business image from any unwanted situation in the context of prevalent anti smoking campaign, nationally and internationally

## 3.2 Human Resources (HR)

### 3.2.1 Human Resource

Head of Human Resource is the head of the department. The Human Resource Development Manager, Production HR Manager, and Resourcing and Remuneration Manager work under him.

### 3.2.2 Activities of HR Department

The HR process is carried out through four '*Guiding Principles*'.

1. Open mindedness
2. Strength from diversity
3. Enterprising spirit
4. Freedom through responsibility

BATB believes in the strength of human resource and uses the modern concept of resource utilization. Every job description is carefully designed and modified under dynamic environment. The company believes in the concept of best fit and trains and develops company personnel as the key 'human capital' of the company.

The Human Resource Department thus concentrates all its activities for the development of human resource for the benefit of the company. The department also believes in maintaining harmonious relationship between the management and workers all the times. The department ensures that managerial development contributes to organizational development.

The departments' various activities cover setting criteria for the selection procedures like Interview techniques, training standards etc. According to the BAT policy guideline, the department maintains the personnel through formulation policies on wages, fringe benefits, annual leave, training calendar, provident fund, performance appraisal etc. Remuneration is managed centrally and there is never any *negotiation* but *settlement*. It also settles with the trade union for Long Term Agreement (LTA)

between management and workers and the 'collective burgeoning agents'. The concept behind the industrial relations is always 'win-win' situation.

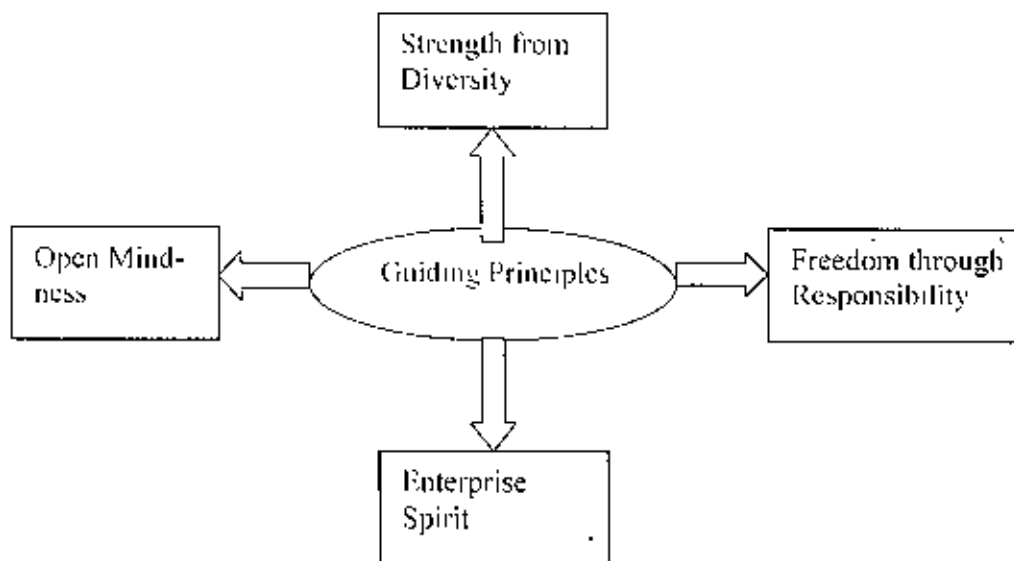


Fig.3.1: Activities of Human Resource

As the competitive world is changing with the speed of light, Training and Development becomes an integrated part to stay on the top. Thus BATB puts great importance to training and development of managers and employees. The company has Technical Training Center at the Dhaka Head Office, which organizes different training programs for its management people around the year. As a subsidiary of BAT, BATB sends its managers for training to BAI group of companies

### 3.3 Information Technology (IT)

Information Technology department was mainly acting as a supporting service for all the other functions of BAT. As the emergence of super information highway and other technological advancement made the business world more competitive, BAT also made necessary adjustments towards the changes and in continuation with that process IT was made a separate department in February 2000. The head of IT is also a member of the executive committee and he is supported by the function support IT managers.

### 3.3.1 IT Structure of BATB

Three Local Area Networks (LAN) have been set up in the Head Office to channel necessary information among the Head Office, main Factory and Kushtia lead factory. Three LANs are connected via a Wide Area Network (WAN). BAT has a private E-mail network through which management personnel can deal with each other even with the foreign suppliers. This is called as **Lotus Notes**, and acts as an effective and “one and only” way of internal communication.

### 3.3.2 Key Objectives of IT

- Establishing and maintaining information and infrastructure architecture to support knowledgeable business users who incorporates IT into their decision making and of doing business, supported by specialist team who manages and seeks continuous improvement, outsourcing where possible.
- Resilient communication infrastructures that are flexible and are able to take new technical innovation to keep the cost down.
- To adopt global application convergence strategy that meets the local business requirements, and develop local applications where appropriate, outsourcing data processing where possible
- To support the changing organizational structure and requirements. IT continues to make available innovative services and training.
- develop application and promote the use of the group working tools as first choice of communications and to become center of excellence for group working.
- To develop and retain IT professionals.

### 3.3.3 ERP System

**ERP stands for Enterprise Resource Planning.** It is an information system or process integrating all manufacturing and related application for an enterprise. ERP system permits organizations to manage resources across the enterprise and completely integrate manufacturing system.



The purpose of ERP technology is to support the business processes that support the company's strategic opportunities. For the well-prepared, new supply chain management systems based on ERP have become significant competitive differentiators. Implementing ERP can become a mind-altering experience for those involved.

The ERP system that was used in BATB in recent time was CS/3. The CS/3 is used to collect everything into a single integrated workspace on the screen, such as issue receives, purchase order receives, daily stock summary, cycle counting report, inter warehouse transfer and daily report of leaf go-down obtained from CS/3 which are submitted to leaf planning office everyday. But it has been noticed that the use of CS/3 is not used efficiently and effectively within the operation. So, BATB has upgraded its ERP system from CS/3 to SAP.

#### **3.3.4 New System in BATB (SAP)**

BATB has taken regional initiatives to move onto SAP in phases as part of the plan BATB, just recently implemented SAP successfully. SAP basically stands for System Application and Program Development and today's world is globally renowned ERP solution and one of the most sought after ones with a world wide user base.

By developing the best technology, services, and development resources, SAP has a business platform that unlocks valuable information resources, improves *Supply Chain* efficiencies, and builds strong customer relationships.

#### **3.4 Brand Marketing**

Marketing operation of BATB is carried under two heads, Brand Marketing and Trade Marketing & Distribution (TM&D) that is the rename of the former Sales Department. The Regional Manager manages Trade Marketing & Distribution. The Group Brand Manager manages brand marketing. Marketing research assists brand marketing.

### 3.4.1 Structure of Brand Marketing Department

The brand marketing department concentrates on satisfying consumers' needs from within the brand portfolio. Once consumers' needs are understood and evaluated, brands can be made available, accessible and desirable through strong, consistent communication. The brand marketing elements covers the adopting of products, logistics and brand marketing policies that best meet the needs of particular trade channels and strategic customers. The brand managers and brand executives are responsible for the allocated brand(s). They are responsible for all type of brand management activities.

Market intelligence includes in market research teams. The team keeps constant eye on the market situation. Through continuous research, market research teams generate useful market information for the brand managers. Interface is required between brand marketing and research which is carried out by any project that is divided into three phases:

- Preparation prior to the study
- Collection and analysis of data
- Presentation and utilization of information

### 3.4.2 Core Strategies of Brand Marketing

#### **Aggressive:**

1. Expand the premium segment growth
  - Internationalism, destination status & image differentiator: Youthful
2. Expand mid segment
  - Key differentiators: international standard with affordability & distinctive image: masculinity/ adventure
3. Dominate volume base
  - Build the critical mass

### **Innovative:**

1. Investigate & build new segments
  - Lights
  - New brands & line extensions.
2. Product Enhancement
  - Packaging, Spec. change & higher satisfaction.
3. Creative communication
  - Focused: HoReCa (Hotels, Restaurants and Cafés), Rural Penetration.
- 4 Consumer Insight
  - World-class *knowledge* base, consumer research & market tracking

### **3.5 Trade Marketing & Distribution**

Activities of TM&D and Production department are highly correlated. The marketing department forecasts the sales volume of the different brand cigarettes for the coming business year and based on this, prepare a marketing plan known as the Sales Operational Plan (SOP). Based on the SOP, the brand wise sales target for each month, Production Department sets its production schedule. The inventories of cigarettes are also evaluated at this stage to find out the actual output to be produced.

The British American Tobacco Bangladesh has a well-defined mission for the marketing and distribution of products. It is to reach the target consumer in the most efficient manner by becoming the benchmark supplier to the trade within the strategic channels in every market where the company operates. A well-organized trade marketing team is working continuously to make this mission successful; furthermore the whole country has been divided into six regions to perform the marketing activities efficiently.

The TM&D is targeting to become the benchmark supplier in the trade in terms of diversified brands, their volume and also promotional activities. TM&D is maintaining their existing strategic channels like *Convenience, grocery, HoReCa* etc and also exploring new opportunities.

### **3.6 Operations**

The Head of Production looks after the production and takes necessary steps to smooth out the production process. The entire production process is performed at the Dhaka Factory. The motto of production department is to ensure the high quality and

productivity steadily. The production department has been very successful in meeting the challenges and the company now produces a wide range of filter cigarettes to meet the market demands.

### 3.6.1 Existing Production Facilities

**Capacity Output:** The country's biggest cigarette manufacturing plant is owned by BATB with a capacity of 80 million (rounded) sticks of cigarettes per day in 3 shifts

**Actual Output:** Presently the factory is producing 60 million sticks per day required 70,000 kg of tobacco leaf.

**Raw Material Used:** The following table summarizes the raw materials used for producing cigarettes. The procurement sources are shown in the same table

Table 3.1: Raw materials and their sources

| Raw Materials    | Sources                        |
|------------------|--------------------------------|
| Bulk Tobacco     | Locally produced in leaf areas |
| Blending Tobacco | Imported                       |
| Cigarette Paper  | Imported                       |
| Filter Material  | Imported                       |
| Packing Material | Local                          |

### 3.6.2 Production Process

#### *The Primary Manufacturing Department (PMD)*

The primary manufacturing department (PMD) is responsible for further conditioning the domestic and import tobacco to make it ready for production. The tobacco passes through a set of integrated and regulated machinery whose purpose is to blend the different 'packing grades' in specified proportions, convert the bales into

produced- 11 mm and 20 mm. For filter rod manufacturing, 100% of the materials are imported and therefore, wastage is closely monitored.

The finished cigarette stock is brought in from the holding room at the SMD and kept at the shipping godown prior to delivery. Trucks belonging to the outside contractors arrive daily to deliver the stock to the various Regional Trade Offices (RTO) around the country. The marketing department issues a daily shipping program specifying the stock that needs to be allocated. This information is input in software to generate a truck allocation scheme. VAT documents are sent along with the trucks.

### **3.8 LEAF Department**

In 1971 (at the time of the liberation), only 600 acres of land were used for the production of cigarette quality of tobacco. Major portion of the total local requirement of cigarettes were imported from West Pakistan. Immediately after the independence, owing to the shortage of foreign exchange, import had to be reduced. There was an urgent need for increasing local production of tobacco. The sustaining efforts of the company and the response of the farmers were so effective that the country became self sufficient in cigarette tobacco by 1975. In recognition to that outstanding performance, the company was awarded the President's Medal in 1976. In 1996, the company purchased about 5500 tons of tobacco leaf from its 14,000 registered farmers.

The Leaf department is involved in cultivating and purchasing flue-cured tobacco. Each year the company registers thousands of farmers along with their land, to grow and cultivate tobacco crop. The company provides seed, fertilizer, and other loans to the farmers throughout the crop season to ensure quality growth. At the end of the season BAT buys fixed quantities of tobacco from the farmers, paying rates based on the grade of the crop. Tobacco growing and buying activities are conducted throughout the country. The two main areas are Kushtia Leaf Division and Chittagong Development Area

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### **3.8.1 Green Leaf Threshing Plant (GLTP)**

The tobacco crop is processed at the Green Leaf Threshing (GLT) plant in Kushtia. The purpose of the GLT is to convert the tobacco into a form suitable for cigarette production. The tobacco is brought to a uniform moisture level and temperature. Initial blending of the different grades of tobacco takes place at the GLT. The processed tobacco is sized and packed before delivery to Dhaka factory.

The Leaf department makes an estimate of the quantity of tobacco that BAT will need to purchase on the basis of the input from Sales & Operation Planning (SOP) committee. Based on these estimates the number of farmers and the amount of land, which will have to be registered, are fixed.

The buying process begins in mid-February and continues till the end of May. The farmers bring in their cured tobacco in the form of bales to the buying courts in the depots. The tobacco is graded according to set criteria and purchased at these sites. All relevant information is marked on the bales and stored at the depots till shipment to the GLT.

Buying courts are located at the depots. The farmers bring their tobacco to these sites in the form of bales on a specific day and time. At the buying courts the bales are graded, priced and weighed. After the tobacco is bought and graded it is stored in the depot godowns; each bale identified with its grade, weight, and price. These bales are stored in the depots and moved to the GLT when needed for processing.

### **3.8.2 The GLTP's main objectives**

- Separate Lamina from Stem
- Retain physical and chemical properties of the leaf.
- Removal of foreign materials
- Conversion of bale to packed dry product capable of long storage.

### 4.1 Introduction

In the simplest possible term, a supply chain encompasses all processes, procedures and actions involved in planning, sourcing, producing and delivering finished products. Certainly there are variations on this broad theme, but in general the supply chain connects all the activities from selection of raw materials (such as leaf and fine paper) to delivery of finished product into wholesale or retail. However, moving the product through its various stages of development is only half the story, because at the same time, as the product moves forward along the supply chain, there is something equally important moving in the opposite direction, i.e. the information. The quality of this information is as important as the quality of finished product, in terms of both how well manufacturers serve the needs of their customers and how well they perform against their competitors.

### 4.2 CORE SUPPLY CHAIN PROCESSES

Figure 4.1 shows the core processes of supply chain starting from the suppliers' supplier and ending at customer's customer.

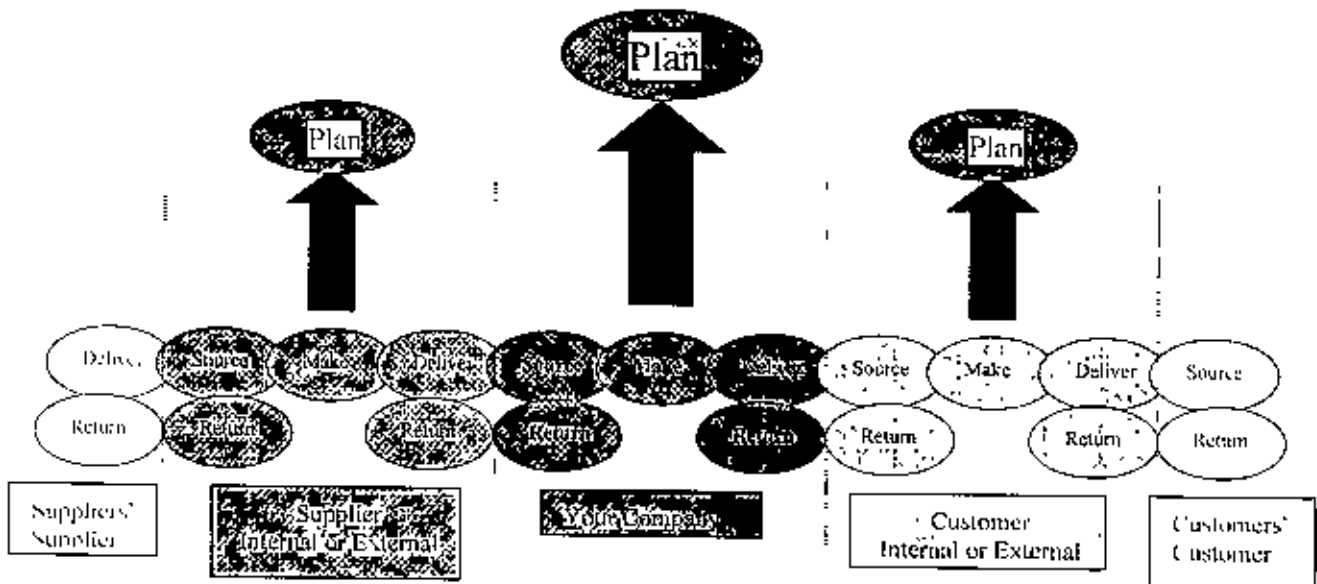


Fig. 4.1 Core supply chain processes



### 3.9 Finance Department

The Finance Department comprises of six areas. They are:

Treasury: Corporate (L/C opening, fund management, banking relationship etc.)

- Core Finance and Management Accounts: Corporate
- Marketing Finance: Supporting
- Excise Management: Supporting
- Taxation: Corporate
- Audit: Separate
- Insurance: Corporate

The main objectives of this department are to ensure custodianship of all company assets, monitor the financing activities and generate useful information pertinent to the company activities to achieve financial growth of the company.

#### Functions of Finance Department

- ❑ Finance company assets, personnel and operational facilities of the cigarette factory, leaf factory and head office
- ❑ Prepare and verify consolidated financial statement of all units of the company
- ❑ Monitor and control all financial activities
- ❑ Monitor sales collections
- ❑ Process Management information.
- ❑ Structure capital policy
- ❑ Carry out audit by internal and external auditors

There are five core steps involved in any supply chain process, these are:

- Plan
- Source
- Make
- Delivery and
- Return

Figure 4.2 shows the core activities of the different steps of supply chain.

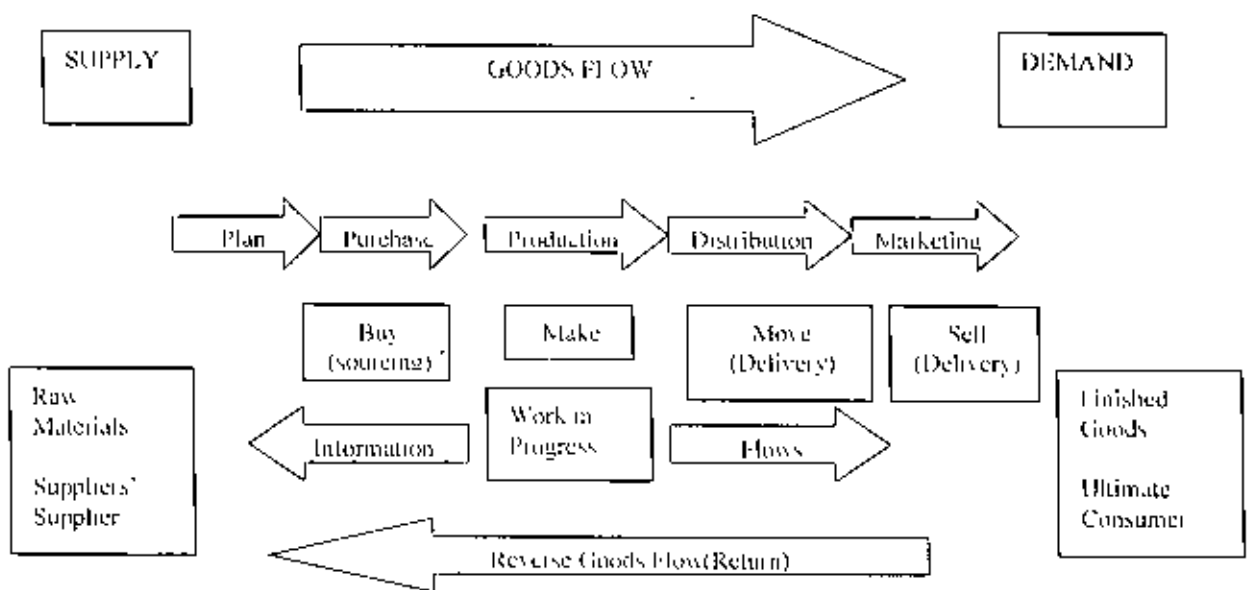


Fig. 4.2: Activities of supply chain

The supply chain connects all the activities of planning, purchasing, making, delivering and marketing of goods at the customer end. Information of customer's demand is very much vital to perform the above activities smoothly. Since there are flow of goods from supply to demand and at the same time information from customer's to supplier via manufacturer. The concept of supply chain is important to

manufacturer who is responsible to transform the goods into the satisfied service against to customer requirement.

### 4.3 SUPPLY CHAIN MANAGEMENT

Apparently it seems supply chain is a normal routine activity of any business. But in reality the management of the chain could be quite complex depending on the nature and size of the business. Following figures (Fig. 4.3.1, 4.3.2, 4.3.3, 4.3.4 and 4.3.5) shows how complexity is added as the business size grows.

#### Simple Supply Chain

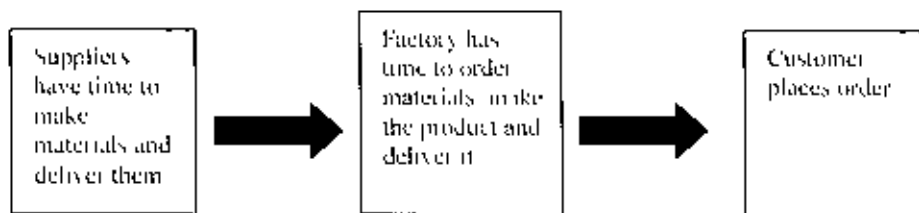


Fig. 4.3.1. Simple supply chain

#### Adding Complexity: Step-1

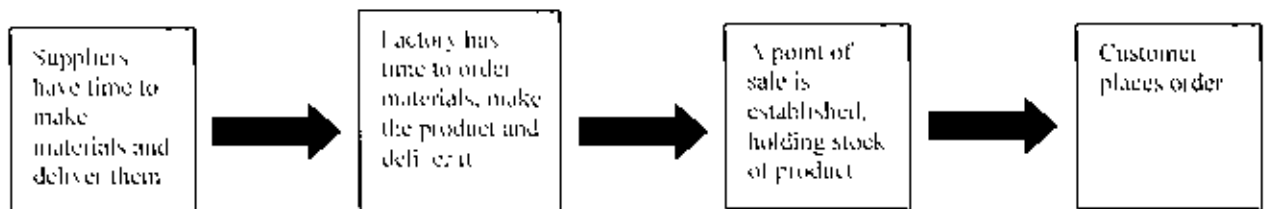


Fig. 4.3.2: Supply chain complexity step-1

1. Addition of a sales point in between manufacturer and customer

Adding Complexity: Step-2

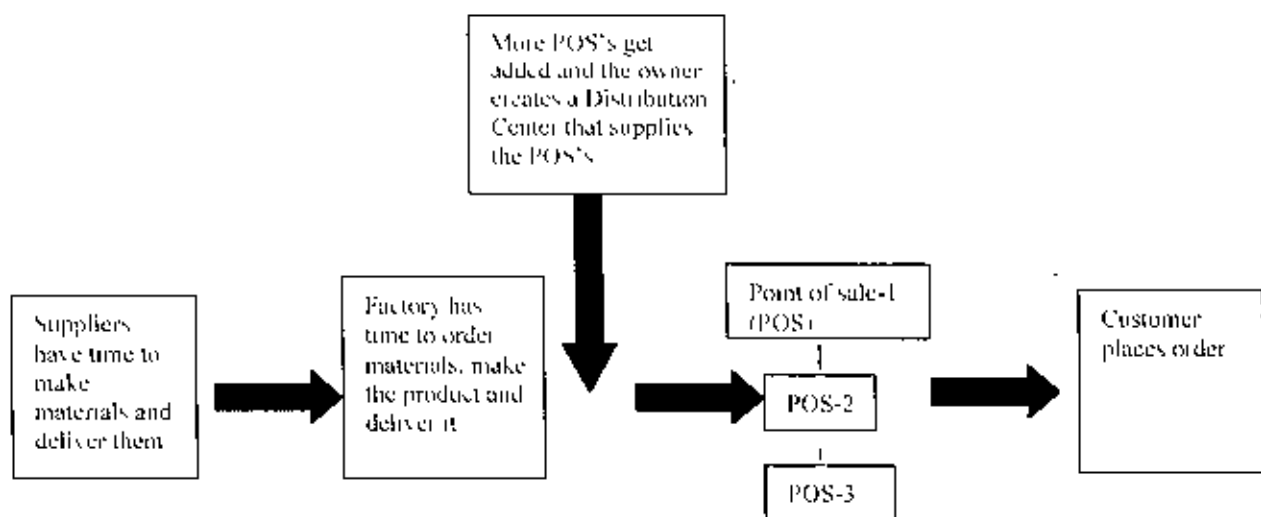


Fig. 4.3.3: Supply chain complexity step-2

1. More sales point are added in between manufacturer and customer
2. Addition of distribution center in between manufacturer and sales center

Adding Complexity: Step-3

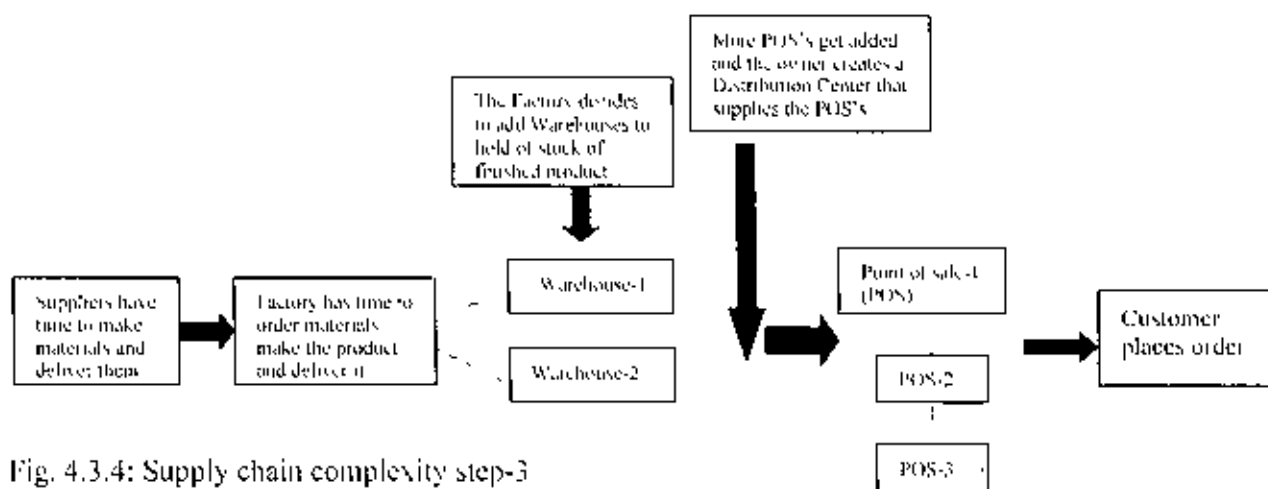


Fig. 4.3.4: Supply chain complexity step-3

1. More sales point are added in between manufacturer and customer

2. Addition of distribution center in between manufacturer and sales center
3. Addition of warehouses in between manufacturer and distribution center

Adding Complexity: Step-4

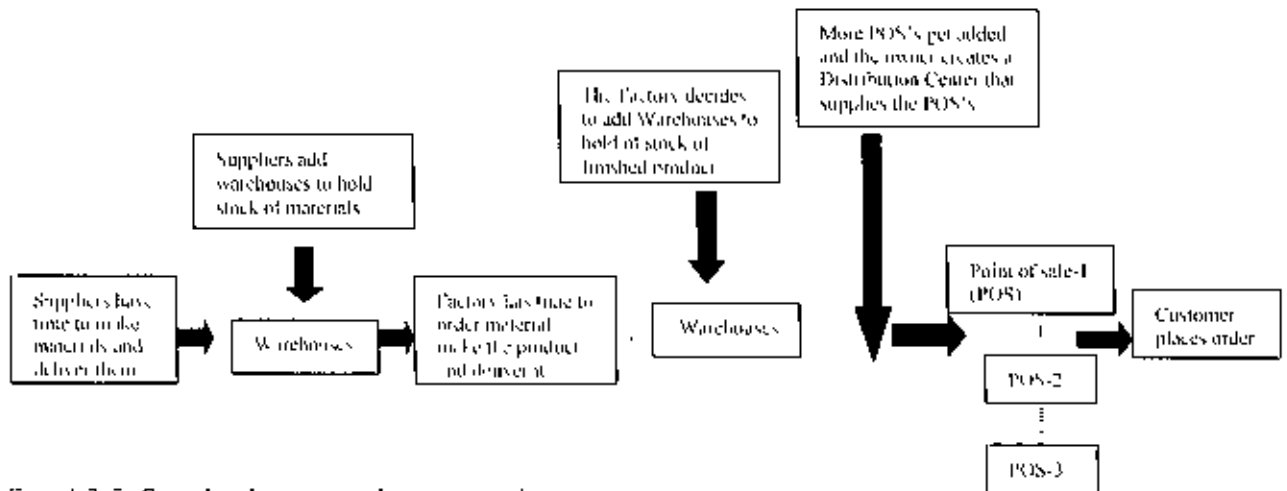


Fig. 4.3.5: Supply chain complexity step-4

1. More sales point are added in between manufacturer and customer
2. Addition of distribution center in between manufacturer and sales center
3. Addition of warehouses in between manufacturer and distribution center
4. Addition of warehouses in between suppliers and manufacturer

The factors that influence the complexity and management of supply chain are illustrated in Figure 4.3.6.

From the figure it appears that many of these factors are related and, at times, they have to be synchronized for smooth and efficient supply chain. This aspect can be realized looking at Figure 4.3.7 and Figure 4.3.8. In the former figure variability and uncertainty result in a unreliable promise to customer, while in the latter case the customer gets a specific answer.

| Product Availability           |                      |                               |
|--------------------------------|----------------------|-------------------------------|
| Independent Demand             |                      | Inaccurate Forecast           |
| Poor Communication             | Product Variety      | Process Variability           |
| Factory Changeover Cost        |                      | Information Visibility        |
| Demand or Supply Seasonality   |                      | Demand Variability            |
| Efficient batch sizes          | Value of product     | Cycle time                    |
| Transport capacity utilization |                      | Functional objectives         |
| Lack of trust                  | Delivery reliability | Obsolescence risk             |
| Process uncertainty            |                      | Facility capacity utilization |

Fig.4.3.6: Complexity influencing factors

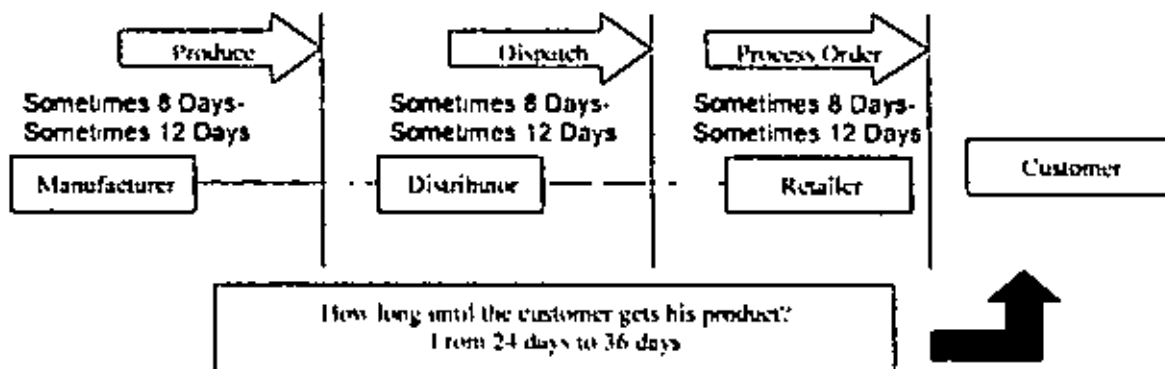


Fig. 4.3.7: Impact of variable unpredictable processes in supply chain

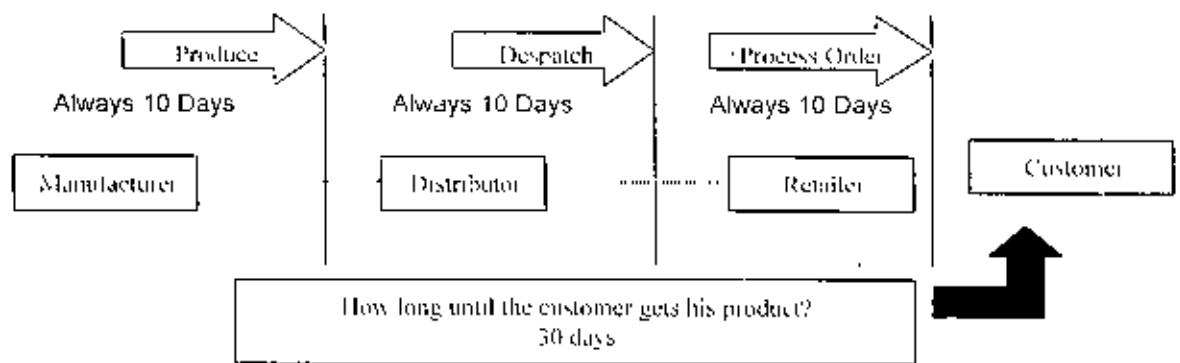


Fig 4.3.8: Impact of reliable predictable processes in supply chain

The activities of supply chain are primarily focused to meet the demand smoothly and efficiently. The key to the process is the information flow can find the demand signal through different stages as shown in Figure 4.3.9.

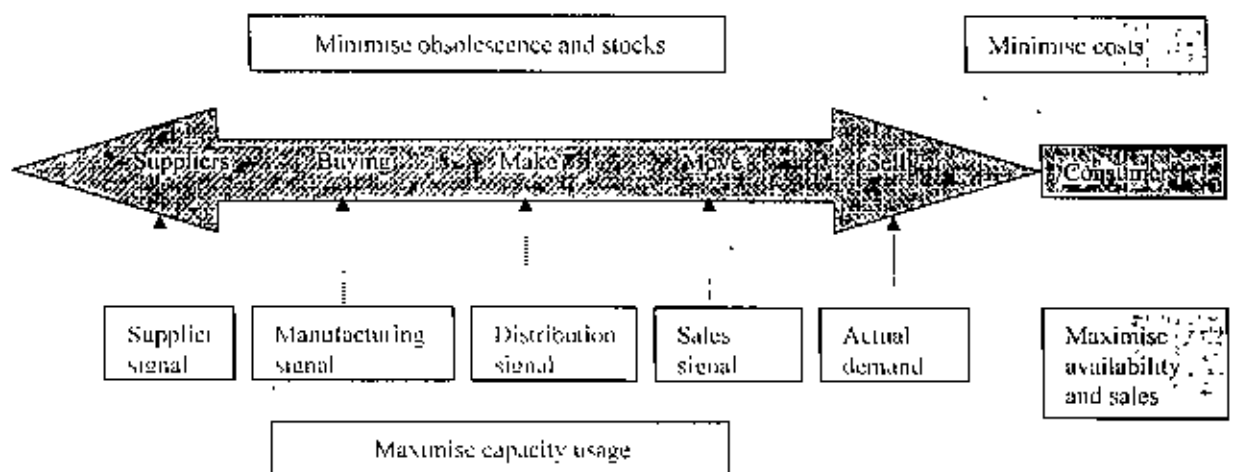


Fig. 4.3.9: Demand visibility in supply chain

As the figure shows the signal must be communicated in time. Each recipient has to receive the signal, press it and generate its own signal to the upstream recipient. The whole process is performed with number of objectives as shown in the figure.

Apart from planning and execution the supply chain activity, overcoming the barriers to supply chain is another area of concern for any manager. Figure 4.3.10 shows the barriers and the consequences that eventually affect the supply chain adversely.

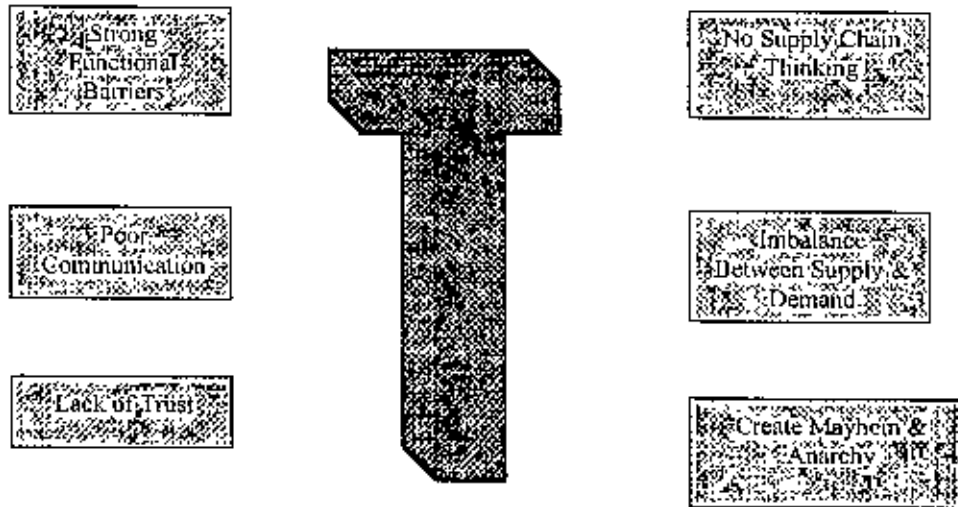


Fig. 4.3.10: Impact of various barriers in supply chain management

To overcome the barriers and to enhance the efficient supply chain it is required to

- understand supply chain process and its importance by everybody in the organization's
- breakdown functional barriers
- improve communication between the members of the organization's
- build trust by working together

As mentioned earlier, synchronization is very important for a smooth supply chain.

Figure 4.3.11 shows the interfaces of synchronization. The key parameters to synchronize at any interface are quantity and timing



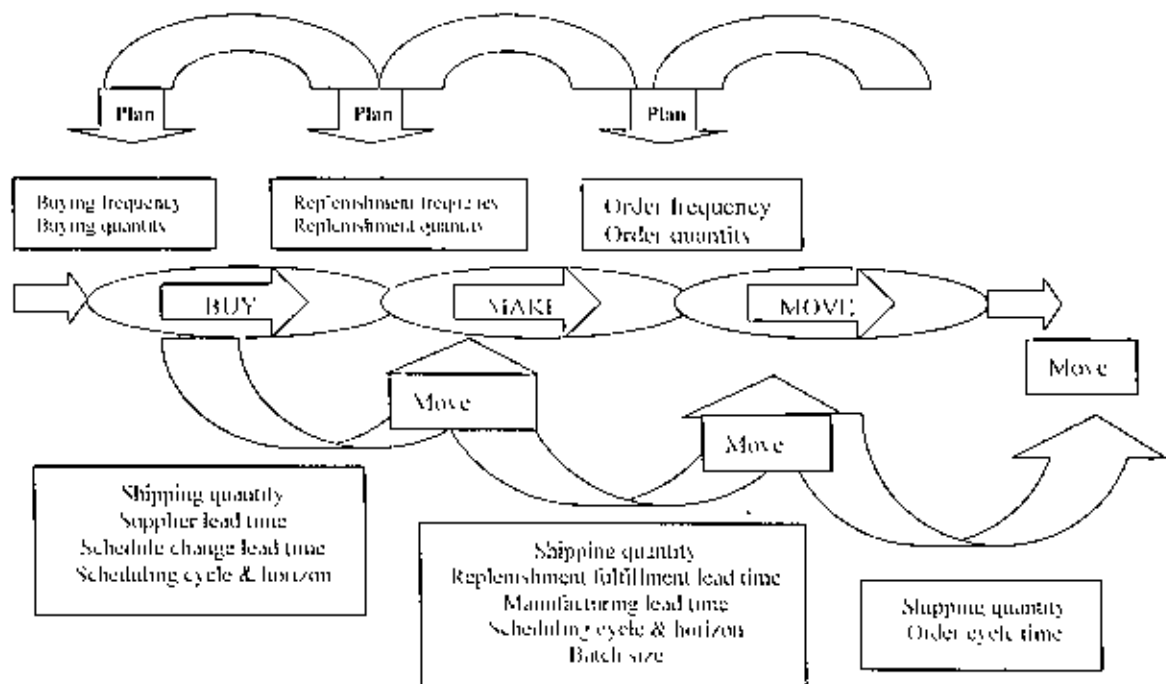


Fig. 4.3.11: Synchronizing activities of supply chain

In case of raw materials purchasing and supplying to manufacturing floor, proper planning must be developed based on raw materials buying frequency and quantity. This plan should involve:

- Shipping quantity
- Supplier lead time
- Schedule change lead time
- Scheduling cycle and horizon

Proper planning should be made in case of producing and distributing the goods based on raw materials replenishment frequency and quantity. This plan should involve:

- Shipping quantity
- Replenishment fulfillment lead time
- Manufacturing lead time
- Scheduling cycle & horizon
- Batch size

At the time of distributing goods to the customer end following point should be considered during planning based on order frequency and quantity:

- Shipping quantity
- Order cycle time

### 5.1 Background of BATB Supply Chain

BATB is the provider of consumer goods such as cigarette and maintains a strong supply chain department which is encompassed from “Seed to Smoke”.

Following figure shows the key components of BATB supply chain.

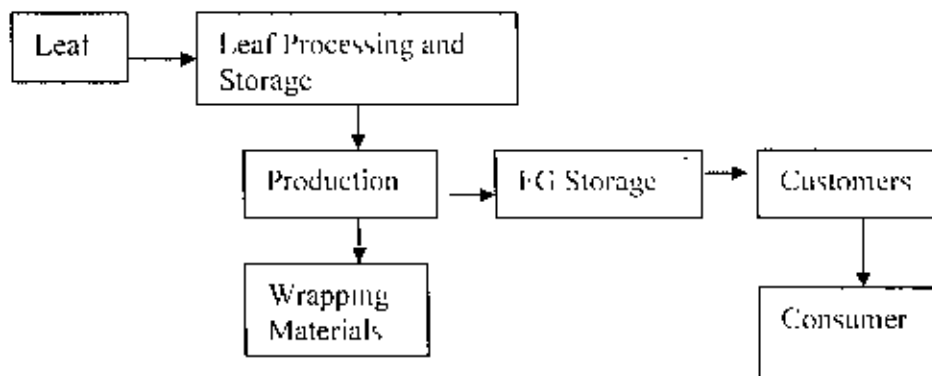


Fig. 5.1: Key Components of BATB SC in manufacturing cigarette

Tobacco leaf is cultivated in the leaf growing areas by BATB registered farmers. After harvesting, leaves are dried and stored according to quality and grade. BATB buying company purchased tobacco from farmers as green leaf. This green leaf is processed in green leaf threshing plant and stored as prized tobacco. Prized tobacco is a processed green leaf that retains specified moisture and grade. The prized leaf stored in warehouses and transferred to Dhaka factory for manufacturing ultimate product, cigarette stick. Cigarette sticks are packed and stored in finished goods warehouse. The finished goods are supplied from factory warehouse to distributors through two channels. One is direct delivery (62%) and other is through regional warehouses (38%). The distributors then sell the product to the retailers and finally consumer consumes cigarette through retailers. This completes the chain of “From Seed to Smoke” which is the ultimate “Supply Chain” of BATB.

## 5.2 Detailed Schematic of BATB Supply Chain

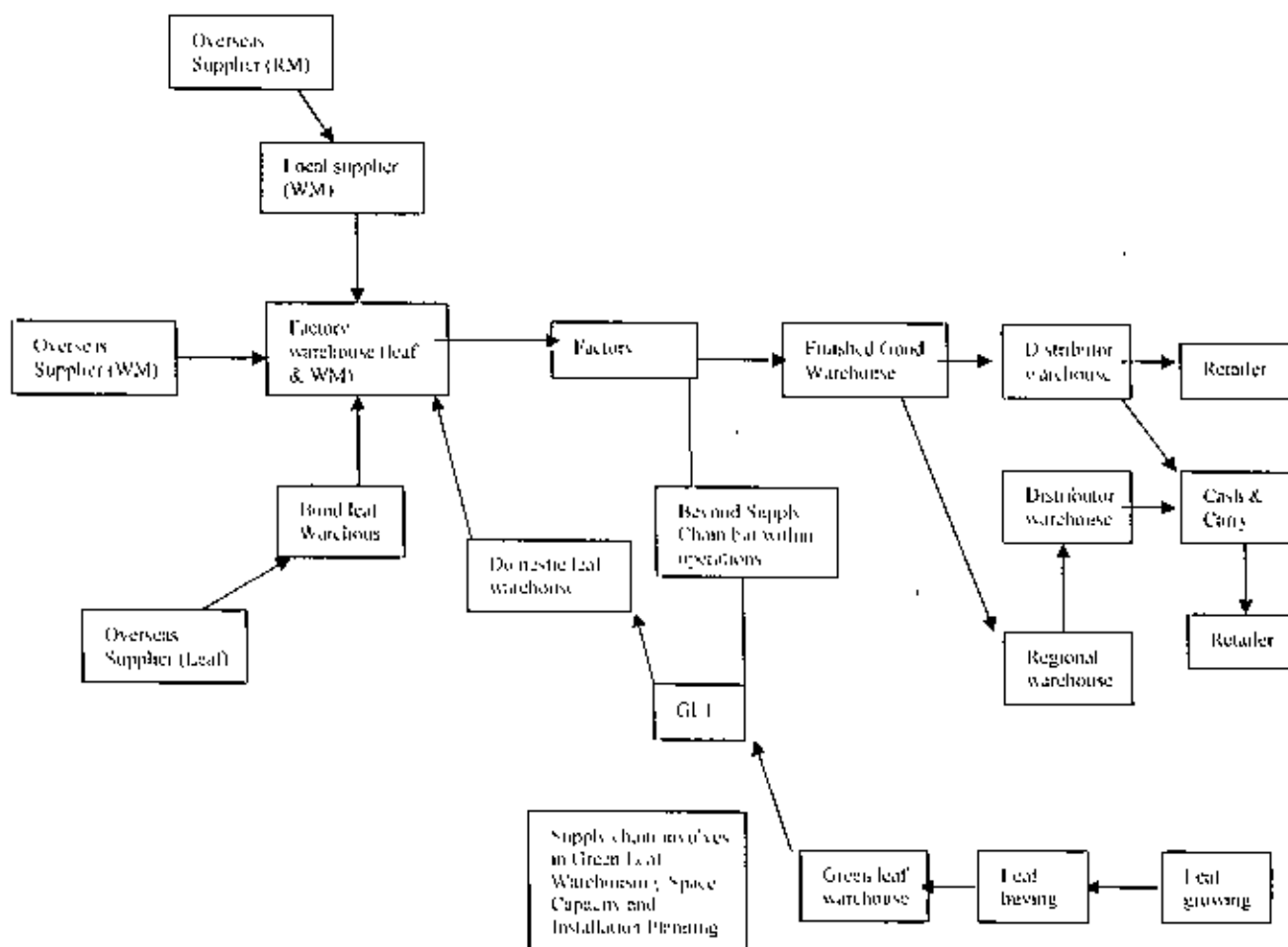


Fig 5.2: Detailed Schematic of BATB SC

The above sketch describes BATB supply chain that starts in general from leaf growing and raw materials suppliers and ends up to retailers. In fact, BATB supply chain connects all the activities, processes and procedures involved in cultivating seeds and other relevant materials supply to customer satisfaction.

Factory has a common warehouse of wrapping material and leaf both local and overseas suppliers are present to supply wrapping materials and leaf. Also green leaf are cultivated locally, supply chain involves in green leaf warehousing, space capacity and installation planning.

There are two parts of BAT supply chain, one is primary supply chain which covers leaf preparation and supplies to manufacturing and warehousing. And another one is secondary which covers trade marketing and distribution.

### **BATB Supply Chain Purpose Statement**

To ensure uninterrupted supply of:

- Plan & materials to manufacturing facility
- Finished goods to Customers
- indirect goods & Services to all functions

through integrated supply chain management of logistics and sourcing at optimum cost while ensuring customer satisfaction.

### **5.3 Functions of BATB Supply Chain**

The present supply chain function in BATB links the conversion processes from “seed to Smoke” It works as a support function to integrate leaf growing, leaf buying, GLT processing, cigarette manufacturing and customer demand meeting processes.

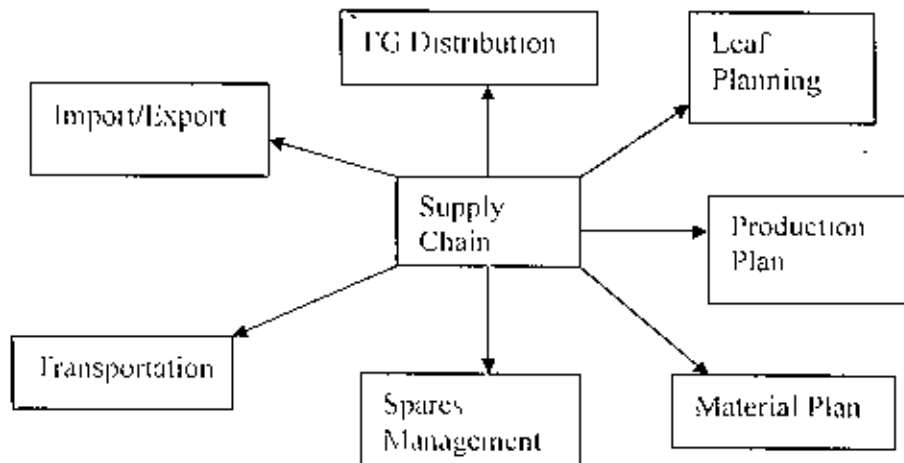


Fig. 5.3: Function of BATB Supply Chain.

Supply Chain provides transportation, warehousing, distribution, import / Export, logistic, spares, supply and planning services the core function that depend on their service are manufacturing leaf and marketing. The functions of the Supply Chain are summarized below.

**Leaf Planning:**

This function ensures supply of tobacco to the manufacturing process. This is a basically planning process involved” what to order, when to order, how much imported or local of leaf. It is driven by the SOP process. This process also drives GLT and MPS.

**Production Planning:**

This is also a planning process which drives almost all other activities of supply Chain. Outcomes of this process are both long and short term production plan of finished goods (cigarette).

**Material Planning:**

This process is driven by master production scheduling (MPS). This process ensures proper supply of Wrapping Material to the manufacturing process, maintaining liaison with the supplies and material requirement planning.

**Finished Good distribution:**

This is a process of meeting customer (distribution) demand by supplying finished good on time in full (OTIF) to the regional trade marketing depot and also by direct delivery to distribution. The core jobs includes order fulfillment, maintaining depot stock level, loading trucks for daily delivery and documentation.

**Warehouse management:**

BATB has its owned, leased and rented warehouses. These warehouses are required to store wrapping material, tobacco, finished goods, prized tobacco and green leaf. Core jobs of warehouse management are capacity planning, leasing, renting, hygiene, sanitation, and infestation control.

**Import /Export planning:**

This involves management of all imports and export activities of the company. Importation of tobacco, wrapping material, spares parts and machinery and exportation of tobacco is within the scope of this process.

**Transportation:**

This process involves management of all transportation service of the company to move wrapping material, finished goods, prized tobacco and green leaf.

**Spare Inventory Management:**

This process ensures proper supply of spares parts to the manufacturing process. These spare parts are required for cigarette manufacturing and tobacco processing machine and also for the service equipment. Core jobs are ordering spares, maintaining stock, and meet urgent demand.

**5.4 Organizational Structure of BATB Supply Chain**

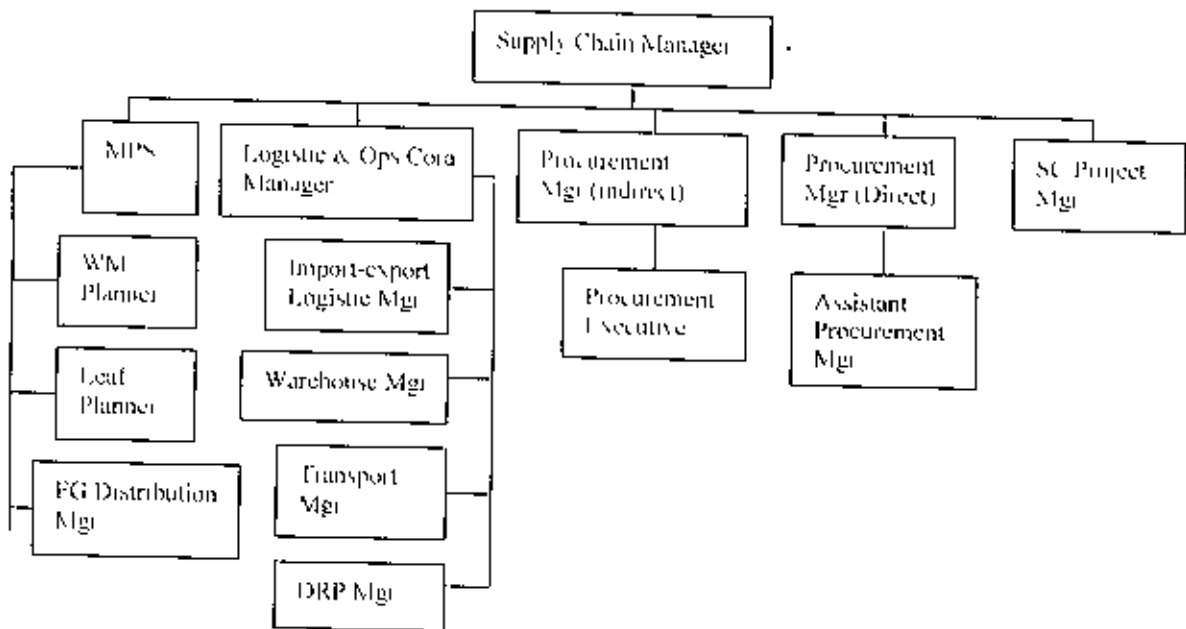


Fig. 5.4: Organizational Structure of BATB SC

There are few terms related with the BATB supply chain management, these are illustrated in brief:

### Concept of EMF

EMF is elaborated as effective marketing focus which covers company wide business planning processes such as

- Annual Company Plan
- Sales & Operational Plan
- Cycle Plan (planning and activities of marketing department)
- Demand Management

### Concept of BATB Sales & Operation (SOP) Processes

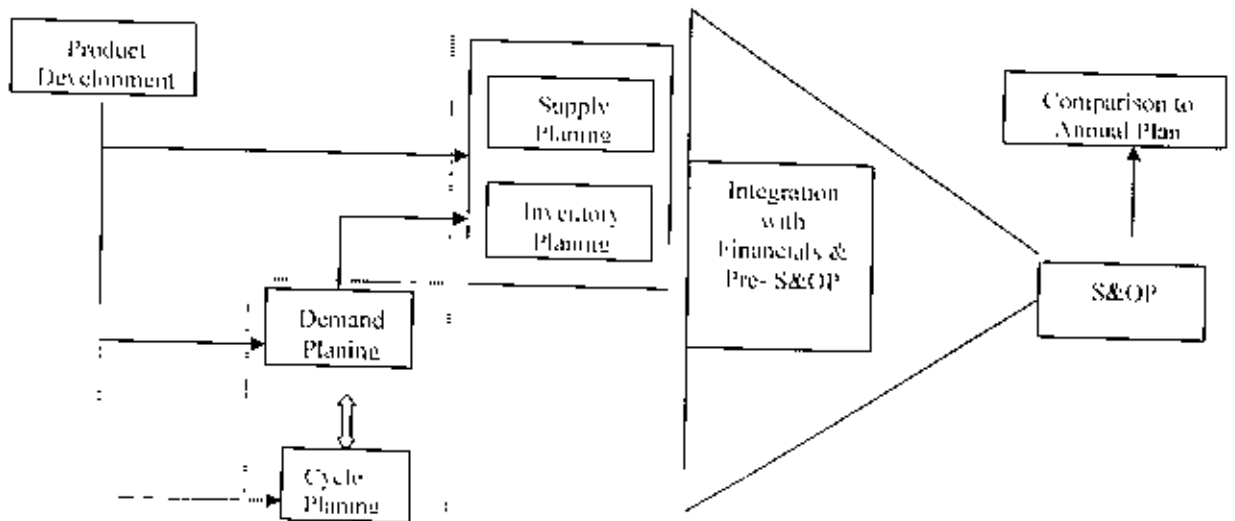


Fig. 5.5: BATB SOP processes

The above figure shows the sequences of sales and operation process which requires the input from:

- Product development
- Demand planning
- Cycle planning
- Supply planning
- Inventory planning and



- Integration with financials to allocate necessary expenditure



















Finally sales and operation plan is compared with annual plan

### Concept of Cycle Planning

Cycle planning is at the forefront of positively affecting consumers buying behavior through the way BATB plan, implement and review company activities (effective market focus-LMF). Cycle planning is about ensuring that all marketing activities-above and below the lone- are synchronized and focused to achieve maximum impact to consumers. In the cycle planning market scenario is updated, reviewed company performance, updated product information, planned details activity in the next cycle, forecasted for 18 months, analyze what if scenario etc. based on bottom up forecast and marketing intelligence information.

### 5.5 BATB Position in the Supply Chain Maturity Grid

Table 5.1: Supply Chain Performance Versus Maturity Model

| Quantified                                      | Supply Chain Performances Versus Maturity Model  |  |  |  |
|---|--|--|--|--|
|   | Stage-1<br>Functional Focus  | Stage-2<br>Internal Integration  | Stage-3<br>External Integration  | Stage-4<br>Cross-Enterprise Collaboration  |
| Forecast Accuracy (aggregate level)             | <br>86.4% | <br>88.6% | <br>95% | <br>96.2% |
| Total Supply Chain Management Costs as % of NFO |  | <br>9.1%  | <br>5.4% | <br>3.4%  |
| Finished goods Inventory days of Supply         | <br>8.8   | <br>31.7  | <br>15    | <br>10    |
| WMS Inventory days of Supply                    | <br>26    | <br>31    | <br>15  |           |
| Total Supply Chain Management Costs as % of NFO | <br>9.1%  |  | <br>5.4% | <br>3.4%  |



BATB



BAT competitive advantage



BAT best in class



External best in class

The table 5.1 shows the BATB supply chain performance in supply chain maturity model. This is the scenario of 2001 and at that BATB position was in stage-1 of the supply chain maturity model but in 2005 BATB standing on stage-3 (external integration) of the supply chain maturity model.

Brief concepts of different stages of supply chain maturity model are described below:

#### Stage-1: Functional Focus

It is the 1<sup>st</sup> level of supply chain maturity model which basically focuses the performance of the individual functional departments under the supply chain. Different functional departments under the supply chain are linked with each other and there are the visibilities of activities and information among all the functional departments under the supply chain. At this stage in 2001 forecast accuracy of BATB is 86.4%, FG inventory is 8.8 days, wrapping material inventory 26 days. Suppliers are not involved directly with the company at the 1<sup>st</sup> stage of supply chain maturity grid that is suppliers are not accountable to maintain the target inventory level of the company.

#### Stage-2: Internal Integration

It implies that the activities of supply chain are the combination of all functional department activities under the supply chain and their suppliers. At this stage, suppliers are developed in such a way that they are accountable to maintain target inventory level of the company. The performance of suppliers are evaluated and developed as per the company requirements. In this case, suppliers are bound to procure their raw materials for manufacturing according to customer guidance and they cannot devote themselves to supply another material to other company that is they act as the soul supplier of the company. The performance of supply chain is totally dependent on the aggregate performance of company along with their supplier.

#### Stage-3: External Integration

This is the combined activities between all departments under the supply chain and their material suppliers and customer of the company. It also implies that suppliers are

an integral part of the company. Also there is a clear transparency and visibility of information about processes and systems of all functional departments under the supply chain with the suppliers and customers. In this case, suppliers are accountable to manage target inventory level of the company but they are not the soul supplier of a certain company, they can provide another product to other company. So there is a clear visibility of information about the type of product, manufacturing systems and other customers of the supplier to avoid conflict of interest regarding the product. As for example, a supplier supplies raw materials to BOC and BATB at a time. This supplier should know the product characteristics, manufacturing systems and inventory management systems of both the companies. And at a time BOC and BATB should know each other and all the processes and systems of the supplier through a hi-tech communication system.

#### Stage-4: Cross Enterprise Collaboration

This is the highest level of supply chain management which is started from 'supplier's supplier and ends at customer's customers'. This is the topmost level of supply chain management where the activities of all processes and systems are shared among supplier's suppliers, supplier, individual company, customer and customer's customer. The performance of supply chain is dependent on all the above companies. Example of this stage is:

Suppose a customer purchasing 5-items from Wall Mart and whenever Wall Mart selling those items and give a input in it data management system, this information is transferred immediately through electronic media to the supplier of Wall Mart Procter Gamble Co, and at the same time material supplier of the Procter Gamble informed through electronic system. This is the cross enterprise collaboration that indicates the matured level of supply chain management.

#### 5.6 Opportunity of BATB Supply Chain

Following figure shows how BATB supply chain creates opportunity of shareholder value

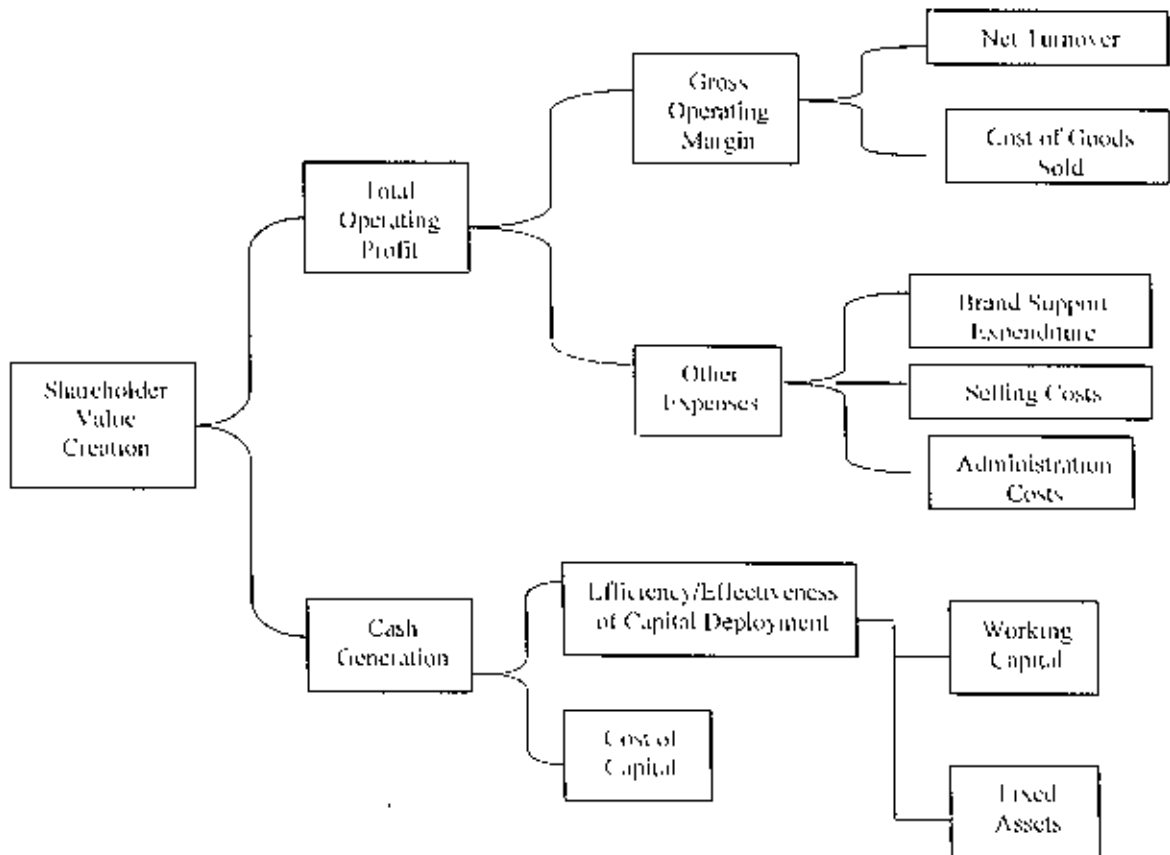


Fig 5.6: Opportunity of BATB SC

### 5.7 Leverages of BATB Supply Chain

Following are the leverages of BATB supply chain:

- Target 3% reduction in wrapping materials costs through improved wrapping materials planning and procurement efficiency
- Target 1% reduction in logistics costs through warehouse rationalization
- Target 10 days reduction in finished goods inventory through regional planning / management
- Target 20 days reduction in wrapping materials inventory through regional planning / management

### 5.8 Sales & Operations: Cross Functional Integration

Cross-functional integration of BATB sales and operations process is presented schematically in the following figure.

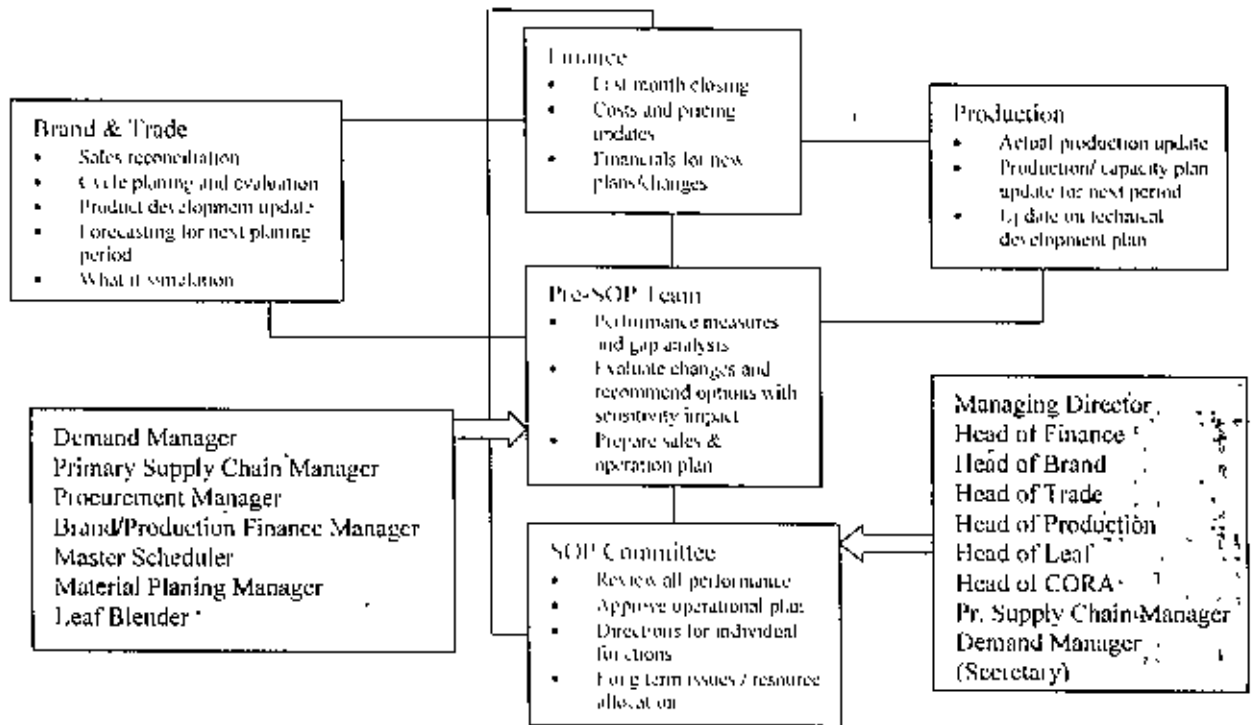


Fig.5.7. Cross functional integration of BATB SOP Process

### 5.9 BATB Supply Chain High Leverage Initiatives

There are four high leverage projects of BATB supply chain, they are

- A. Project Enterprise
- B. Project Challenge
- C. Project Excellence
- D. Project Thunder

### **A. Project Enterprise**

This project was designed to get the best out of the ERP system run in BATB

The major deliverables are

- (1) Best utilization of FRP
- (2) Knowledge and Expertise on FRP
- (3) Data integrity

### **B. Project Challenge**

The main objective of this project is to achieve efficient working capital management by leveraging optimum inventory levels and efficient FRP system.

### **C. Project Excellence**

The goal of this team is to provide OTIF delivery of quality goods & services to all customers at optimum cost by becoming benchmark for two key areas of Supply Chain by the end of 2004 and two other areas by the end of 2005.

The excellence team will first develop the service level agreement with major customers of supply chain, major suppliers, manufacturing department, finished goods distributors and treasury department. The type of contract in SLA improves the level of service and reduces ambiguity.

### **D. Project Thunder**

The ultimate goal of this project is to increase velocity in the Supply Chain by identification and elimination non-value-adding activities in the total Supply Chain.

The supply chain areas will include purchase order processing and indirect goods purchase. Thunder team has identified 3-areas, they are feasibility to eliminate and minimize signature from purchase order, introducing catalogue and finally tax stamp acquisition process.

## **5.10 Future Plans of BATB Supply Chain**

### **5.10.1 Release of Working Capital**

- Spares inventory reduction
- Logistics
- all sea freight on FOB basis

- increase direct distribution
- WM inventory reduction
- Leaf inventory reduction

### **5.10.2 Other Regional Initiatives**

- Project ISIS (discussed in chapter-7)
- Project SRM (discussed in chapter-7)
- Product Integrity and Tracability
- Supply Chain Mapping
- Reduce finished goods & WM write off

### **5.10.3 Other BATB Initiatives**

- FG and warehouse relocation
- Improve production conformance
- Improve OTH
- Prize leaf warehouse relocation
- Wave concept in WM and FG inventory
- Supply Chain Restructure

## **5.11 Scope of BATB Supply Chain**

Scopes of BATB supply chain are illustrated as below:

- Drive S & OP Process
- Master Production scheduling
- Capacity Planning
- Working Capital management
- Logistics Support i.e. Freight, Transportation & Warehouse's
- Customs Clearance for all Import & Export Goods
- finished Goods Distribution Direct to Distributor & Regional Depots
- Indirect Goods & services procurement

Process & Tools BA TB used in implementing supply chain management are:

- MRP-II
- ISO 9001-2000
- Sales & Operations (S & Ops) process in Line With EMFH
- SAP
- Annual Dash Board Score (ADBS)
- Business Enabler Survey Tools (BEST) module
- Microsoft Excel based planning

### 5.12 BATB Supply Chain Challenges

1. Improve Customer Service
2. Vendor Development
3. Migration to and utilization of new ERP system
4. Handling of RG & materials
5. Working Capital Management
6. Supply Chain Management Cost
7. Savings through WM Initiatives
8. Implementation of Indirect Procurement
9. Supply Chain knowledge & skill

#### 1. Improve Customer Service

Develop better understanding of key customer's through identifying key customers, developing understanding on expectation of customers by joint discussion, defining KPI's through SLA with key customers to achieve common goals, and monitoring and evaluation of performance standards jointly and follow up & regular review

#### 2. Vendor Development

Following are the vendor development activities:

- Implement B.E.S.T module with major local WM suppliers



- joint monitoring and evaluation of performance standards as set in SLA
- Evaluate present level of performance ( cost quality & velocity i.e, delivery performance), analyse gap between expectation & performance, develop agreed action plan with target dates
- follow up & regular review
- Collaborative planning with supplier & supplier's supplier to optimize local Suppliers working capital and operation cost.

### **3. Migration to New ERP (from CS-3 to SAP) & using for all Planning Purposes-SAP**

Activities are:

- Draft expectations from each key users & process owners is being developed
- Harmonize expectation with the scope of SAP
- Each Key user's along with the process owner to design own requirement & sign off implementation and training plan in coordination with SAP Team
- Define Milestones with target dates
- Close monitoring & evaluation of each milestone progress
- Achieve target date of SAP

### **4. Handling of Finished Goods & Leaf**

Activities during handling of FG and leaf's are:

- Ensure FIFO from FG warehouse.
- Installation of Flow rack system in FG warehouse to ensure FIFO
- Gradually introduce full pallet loading in FG carrying trucks
- Introduce perfect order fulfillment as KPI
- Propose & Implement plan for Palletization, racking & flow rack in Dhaka Factory Leaf warehouse
- Implement loading & unloading of leaf bales
- Stacking & De-stacking in Dhaka Factory leaf warehouse
- Implement unloading & loading of leaf bales by clamp trucks

- Proposes & implement Palletization plan in Savar Bond Warehouse
- Introduce Palletization in all leased Prized leaf warehouse

## **5. Working Capital Management**

There two ways of working capital management such as

- Visibility of Demand forecast on a rolling 18 months horizon
- Reduce W/M & Leaf Stock to Support FG Stock at a level of 10-12 Days

Following are the initiatives of working capital management.

### **1) Imported WM & Leaf Stock Management**

- Forward visibility to both local & overseas suppliers on a rolling basis
- Agreed SLA with all suppliers
- Agree & continuously monitor delivery schedule on a rolling basis
- Performance monitoring of both BATTB & suppliers against set KPI
- Establish Regular two ways feed back system
- Collaborative planning with Local WM suppliers & supplier's supplier

### **2) Domestic Leaf Stock Management**

- Visibility of unused leaf Stocks to LOP, Pre S & OP and S & OP
- Close monitoring of leaf buying, processing for both export & domestic leaf requirement
- Direct disposal of short term from GLT
- Sell out all excess cumulative stem stocks
- Selling of all excess by product

## **6. Reduce Supply Chain Management Cost : Supply chain management cost can be reduced through**

- Reducing WM & Leaf Acquisition Cost
- Rearranging Dhaka Factory & all prized leaf warehouses operational modality to reduce badli engagement, O T hrs. Handling & carrying cost
- Tax Stamp Delivery once a month instead of 8 times in a month
- Explore to eliminate internal cargo loading (ICL) shipment

### **Reducing Order Management Cost by**

- Completion of Flow racking system in FG warehouse
- Implementing full pallet loading
- Reducing OT hrs in FG warehouses
- Revisit distribution route plan to optimize SC cost

### **Reducing Inventory carrying cost by**

- Reducing total working capital to reduce opportunity cost

### **7. Cost Saving from WM Initiatives**

- Board gsm reduction of JPGI
- Gravure printing of SRF (2<sup>nd</sup> source of Gravure print & minimising risk)
- Local plug wrap slitting 2<sup>nd</sup> supplier (product quality & sustainability)
- wastage reduction, specification change & working capital borrowing facility through out the process

### **Cost Saving Potential from WM Initiatives (alternate source, Localization, Global Harmonization / Spec change)**

- Price negotiation with local suppliers
- Board change in SRF HL to improve packaging quality
- Alternate sourcing & implementing STENTA film for HL brands
- Locally shifted / alternate source
- 6 micron foil in SRF brand
- Base board gsm reduction
- Local tipping paper for all IBG(product quality & sustainability)
- Clear wrap for SE-555

### **8. Indirect Procurement – a new challenge in Supply Chain**

### Objective

To prepare and scope a program for British American Tobacco Bangladesh to deliver a potential approach to the Procurement of Indirect Goods & Services ensuring maximum sustainable benefit from all areas of business activity.

### Scope

Indirect goods & services include everything except

- Wrapping Material
- Leaf
- Permanent labor
- Cash subsidies
- Taxes/depreciation

## **9. Supply Chain Knowledge & Skill**

- On & off the job training during SAP implementation phase
- Implement SCOR model:

The objective of this project is to support BAT Bangladesh in its SCOR adoption and to assist BAT Bangladesh to improve its supply chain process, induce and implement best practices and benchmark its performance. The focus is to map/analyze the complete supply chain of BAT Bangladesh using the SCOR model.

- Supply Chain education level (four days session to be conducted on site by advent)
- Supply Management
- Performance Management

Following projects are required to improve supply chain knowledge and skills:

- SAP implementation

- SCOR implementation
- Project ISIS
- Flow rack system for FG
- Palletization, Racking and Flow rack system in Leaf Warehouses
- New distribution routes
- Implement full pallet loading in FG carrying trucks
- Identify and eliminate non-value added jobs

### **5.13 Conclusion**

BATB interested to develop a flexible and responsive supply chain that could accommodate market volatility and complexity. BATB' s dynamic and high performance team of supply chain department is continuously looking toward to improve their whole process by incorporating new ideas and technologies into its operation to provide greater cost efficiencies and increased revenue opportunities.

The four high leverage projects that the supply chain department has undertaken will definitely improve the total supply chain processes and deliver the highest amount of benefit to whole organization once those projects are implemented. The challenging team who are working towards to achieve efficient working capital management by optimizing inventory level and efficient ERP system has been to identify some ways to do so, will surely contribute BATB to accomplish organizational goals

**6.1 Introduction**

The forecast of demand forms the basis for all strategic and planning decisions in a supply chain. Throughout the supply chain, all push processes are performed in anticipation of customer demand whereas all pull processes are performed in response to customer demand. When all stages of supply chain produce a collaborative forecast, it tends to be much more accurate. The resulting forecast accuracy enables supply chains to be both more responsive and efficient in serving the customers. The list of some decisions that utilize forecast and can be enhanced through collaborative forecasting among supply chain partners as below

- *Production:* Scheduling, inventory control, aggregate planning, purchasing
- *Marketing:* Sales-force allocation, promotions, new product introduction, seasonal impact
- *Finance:* Plant / equipment, investment, budgetary planning
- *Personnel:* Workforce planning, hiring, layoffs

It is essential that these decisions not be segregated by functional area or even by enterprise, as they influence each other and best made jointly. For example, Coca-Cola considers the demand forecast over the coming quarter and decides on the timing of various promotions. The promotion information is then used to update the demand forecast. The updated forecast is essential for the bottlers, who are often independent of Coca-Cola, to plan their production, as it may require additional investment and hiring decisions. A bottler operating without the updated forecast based on the promotion is unlikely to have sufficient supply available for Coca-Cola. This example illustrates the importance of collaboration- both within the functions of a company as well as among companies in a supply chain.

Mature products with stable demand are usually easiest to forecast. Stable products at a super market, such as milk or paper towels fit this description. Forecasting and

accompanying managerial decisions are extremely difficult when either the supply of raw materials or the demand of the finished product is highly variable.

## 6.2 Basic approach to demand forecasting

The following basic, six-step approach helps an organization perform effective forecasting:

1. Understand the objective of forecasting

2. Integrate demand planning and forecasting throughout the supply chain

3. Understand and identify customer segment

4. Identify the major factors that influence the demand forecast

5. Determine the appropriate forecasting technique

6. Establish performance and error measures for the forecast

Each organization must use all six steps to forecast effectively.

Also a company must be knowledgeable about numerous factors that are related to the demand forecast. Some of these factors are listed below:

1. Past demand

2. Lead time of forecast

3. Planned advertising or marketing efforts

4. State of the economy

5. Planned price discounts

6. Actions competitors have taken

A company must understand such factors before it can select appropriate forecasting methodology.

## 6.3 Demand Planning and Forecasting in RATAB

### 6.3.1 Introduction

Demand management is an integral part of BATB supply chain. Demand manager in BATB is responsible to forecast different brand, measure the accuracy and acts as prime input of master production scheduling.

Normally sales data are collected from country wide sales managers, then yearly sales volume is forecasted for various brands and placed for preparing annual sales and operation plan.

### **6.3.2 Importance of Forecasting in BATB**

Presently BATB producing and marketing 8-types of brands, they are Benson & Hedges, B&H (L), State Express (555), Gold Leaf (JPGL), Rothmans(FT), Rothmans (SM), Scissor, Capstan, Starfilter. So there are varieties of production plans and master production schedules for the different type of brands.

The main objectives of BATB forecasting are

- how much of a particular product to manufacture
- how much will be the finished goods stock inventory
- how much will be the raw materials stock inventory
- how much to order
- what will be the strategy of procurement functions
- what will be the strategy of distribution department
- what will be the plan of wrapping materials and leaf production

The ultimate goal of forecasting is optimum management of working capital which further leads to optimize the profit margin of the company.

Accuracy of forecasting leads to the accuracy of raw materials and finished goods stock inventories that are the tools to measure the supply chain efficiency

### **6.3.3 Factors Affecting the Forecasting in BATB**

There are various factors affecting in forecasting such as



**Sales Trend:** Previous 18-months sales trend is taken into consideration during forecasting.

**Historical data:** past sales data is important that gives a direction in making future sales forecast.

**Special occasions:** demand fluctuates due to various occasions such as Eid, Puja, Ramadan, Flood, Rainy Season etc

**Cycle activities:** These are brand promotional activities, product development and new product introduction, increase of price etc.

The above factors are necessarily considered during forecasting of different type of brands.

**6.3.4 Cycle Planning** Cycle planning is at the forefront of positively affecting consumers buying behavior through the way BATB plan, implement and review company activities (effective market locus-LMI). Cycle planning is about ensuring that all marketing activities- above and below are synchronized and focused to achieve maximum impact to consumers

### **6.3.5 BATB Demand Planning Processes**

Demand planning process comprised of three planning process viz. monthly cycle planning, pre sales and operations planning and sales and operations planning. Figure 6.1 shows these three planning processes along with links to input, output and relevant players involved in the process.

### Overall Process Links of Demand Planning

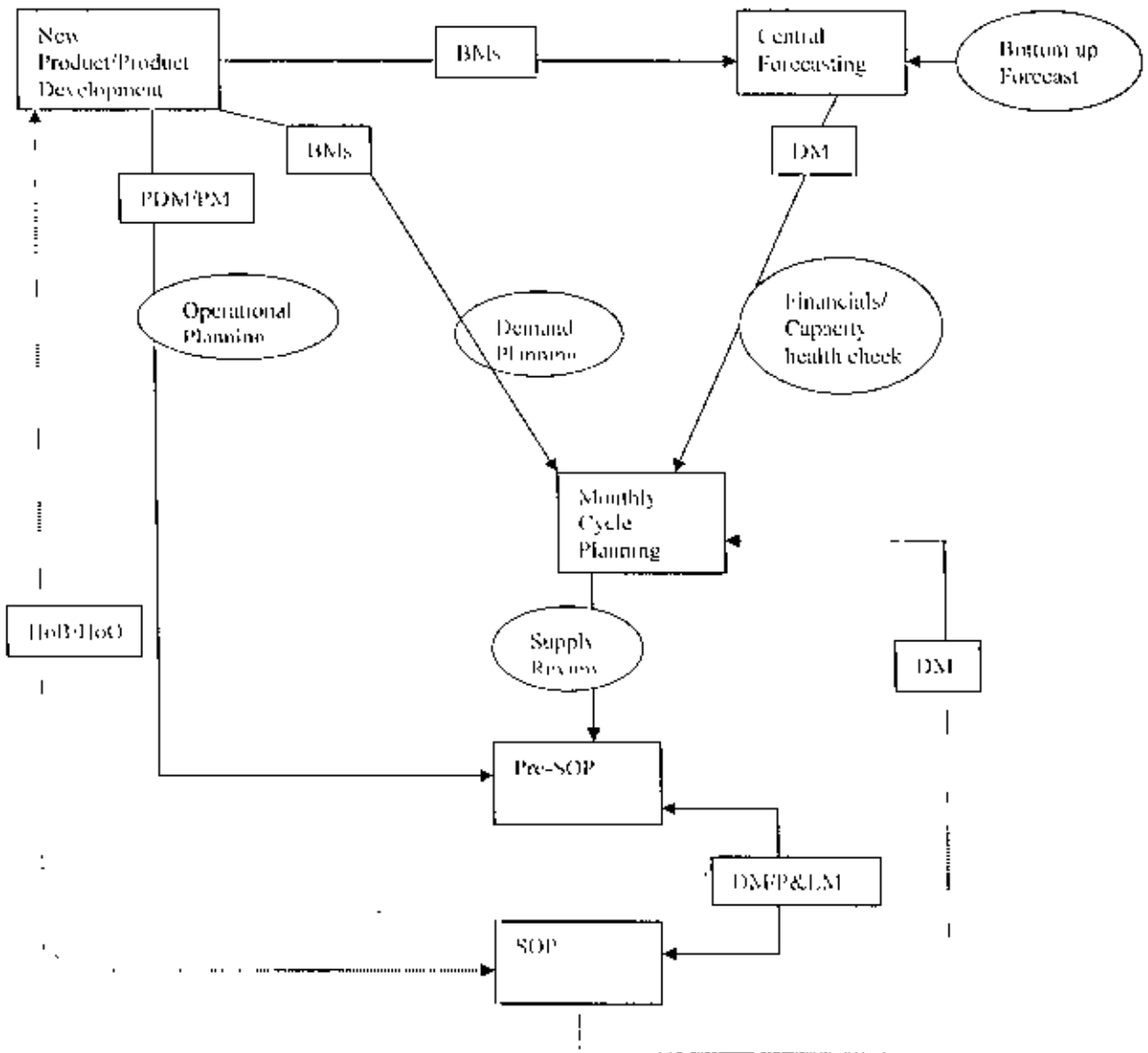


Fig. 6.1: Demand planning process links

**Note:** DM - Demand Manager, BMs - Brand Managers, PDM - Product Development Manager, PM - Procurement Manager, P&LM - Planning & Logistic Manager, HoB - Head of Brand, HoO - Head of Operations

### 6.3.5.1 Monthly Cycle Planning

In the monthly cycle planning there are a lot of issues that are taken into consideration. these are updated economic/ political situation (Quarterly), performance trends of share-own & competition, competition activities (past/ current /future), evaluation of previous cycle plan, updated information from product development team, next three months cycle plan, firm up forecasts, what if scenarios, optimistic / realistic/ pessimistic scenarios, summary of key assumptions etc.

The objectives of monthly cycle planning are:-

- to plan detailed brand/ trade activities and consequent volume forecasts for 18 – months (3 month firm & 15 months outline)
  - Monitor progress of cycle activities planned for the next three months and review balance 15- months outline activities
  - Develop corrective business activities to support forecasts and develop “what if” scenarios for contingency.

Following information is required in each month cycle planning:

- Sales and operations issues of the previous month
- Outline of 18- month forecast coming out of the forecasting process (driven by demand Manager)
- Cycle evaluation of previous and on- going activities
- Cycle plan for the next 18- month
- Market scenario and competitive environment (From Marketing Intelligence Manager)
- Assumptions on economic/ political situation update (Quarterly from Treasury Manager)

The outcome of the monthly cycle planning is as below:

1. Activity recommendation(s) for 4 months or further. It is already assumed that the next three months activities are firm and planned for implementation
2. Agreement on forecasts for next 18 month firm and 15 months outline. The team is also expected to develop “ what if scenarios” for the pre-Sop team. The

assumptions behind the forecasts will also be summarized and shared with the regional managers for consideration in reviewing their bottoms forecasts.

3. demand planning and sensitivity analysis for new products or product development projects.
4. Final details on the next three cycle activities. These details will be used to draft and finalize the cycle instructions for the next three cycles. They will also be used to firm up sales presenters for the TM & D team.
5. Updated cycle plan. The team should reflect changes in the cycle plan to ensure that there is clear alignment and synchronization of activities and forecasts.
6. Special activity recommendation for SOP approval in order to bridge gaps (if any) against company plan targets or to explore new opportunities along with resource implications.

#### 6.3.5.2 PRE- Sales and Operations Planning

Sales operational planning is the way of measuring performance against the strategic plans that have been developed (primarily in the company plan and subsequently reviewed in the quarterly profit review- QPR). Pre-SOP evaluates all changes to sales and production plans and options available for the next 18 months. The team then prepares the sales & operations plan for approval in the SOP meeting.

Purpose of the pre-sop:

1. Performance update and review-sales, production, inventory and financial and gap analysis against company plan objectives.
2. Provide a revised and updated sales forecast which forms the basis for a new sales operations plan.
3. Review the sensitivity analysis (what if scenarios) recommended by the cycle planning team.

Following inputs are needed to conduct pre-sop planning:

- Updated cycle plan and revised 18 months volume forecasts along with financials (year-end projection)
- Current inventory levels-FG, WM & Leaf
- Current production and capacity plans
- Sales, production, inventory and financial performance updates- last month & year to date
- Update on going projects (New product / Product development, machinery, materials etc.)
- What if scenarios

Following issues are taken into considerations in pre sop planning:

1. Performance review- sales, production, inventory & financials and gap analysis Vs company plan objectives
2. Review new sales forecasts along with what if's
3. Review new production plan
4. Review WM & Leaf plans
5. Review progress & operational/ resource implications of ongoing projects (New product, Product development, Machinery, WM, Leaf etc.)
6. Identifying alternative options for different issues along with cost benefit analysis
7. Compile new SOP plan along with recommendations for SOP team's approval

**The outcome of the pre-sop is:**

1. New recommended SOP plan to include
2. Sales Plan
3. Finished goods inventory plan
4. Production / materials plan (with 3 months firmed)
5. Sensitivity analysis of plans
6. Financial analysis-Cash / profit
7. Variance against Company Plan and recommendations to bridge gaps
8. Updates on ongoing projects
9. Issues, options & resource implications

### 6.3.5.3 Sales and Operations Planning (SOP)

Sales operational planning provides the measure of performance against strategic planning on a regular monthly basis. It signs off the business forecast which then forms a “contract” between marketing, production and finance, to review the company performance against the company plan. It generates the “one set of numbers” that can highlight the deviations against the original budget and so provides the opportunity to take corrective actions. This one set of numbers is also used to prepare the master schedule for production that shows what products to manufactured at what time, in what volume over the next 18 month cycles.

Following inputs are needed to conduct sop planning:

- New SOP plan from pre-SOP
- Sensitivity Analysis of plans

Following issues are taken into considerations in sop planning:

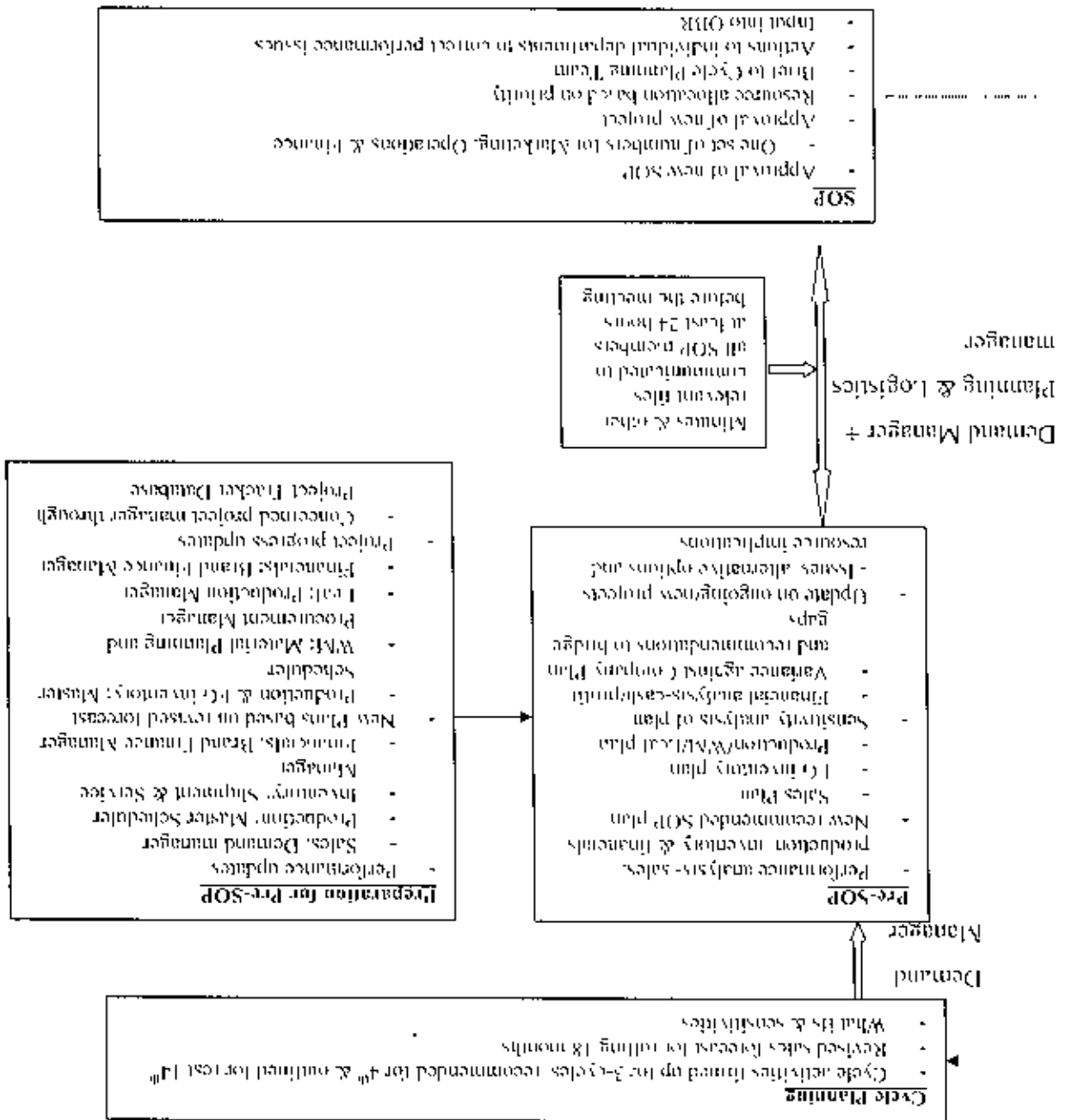
2. Performance highlights – last month & year to date
3. Key assumptions and market analysis
4. Sales forecasts
5. Financial / operational implications and recommendations from Cycle Planning / Pre-SOP
6. New project proposals (Product, machinery, material etc.)
7. Review of sensitivities

**The outcome of the SOP is:**

- Approval of new projects and allocation of resources
- Brief to Cycle planning Team
- Actions to individual departments to correct performance issues

Figure 6.2 shows the relation between three tiers of planning in BATB

Fig. 6.2: Input-output links of cycle planning, pre-sop planning and sop planning.



#### 6.4 DETAILED PROCESS MAPS of Forecasting in BATB

The main input to the planning steps viz Cycle Planning, Pre-SOP and SOP is the forecast of the demand. Figure 6.3 schematically shows the processes through which the forecast is prepared. It appears from the figure that the forecast is prepared with input from the field as well as operational managers at the top. It considers strategic as well as environmental factors.

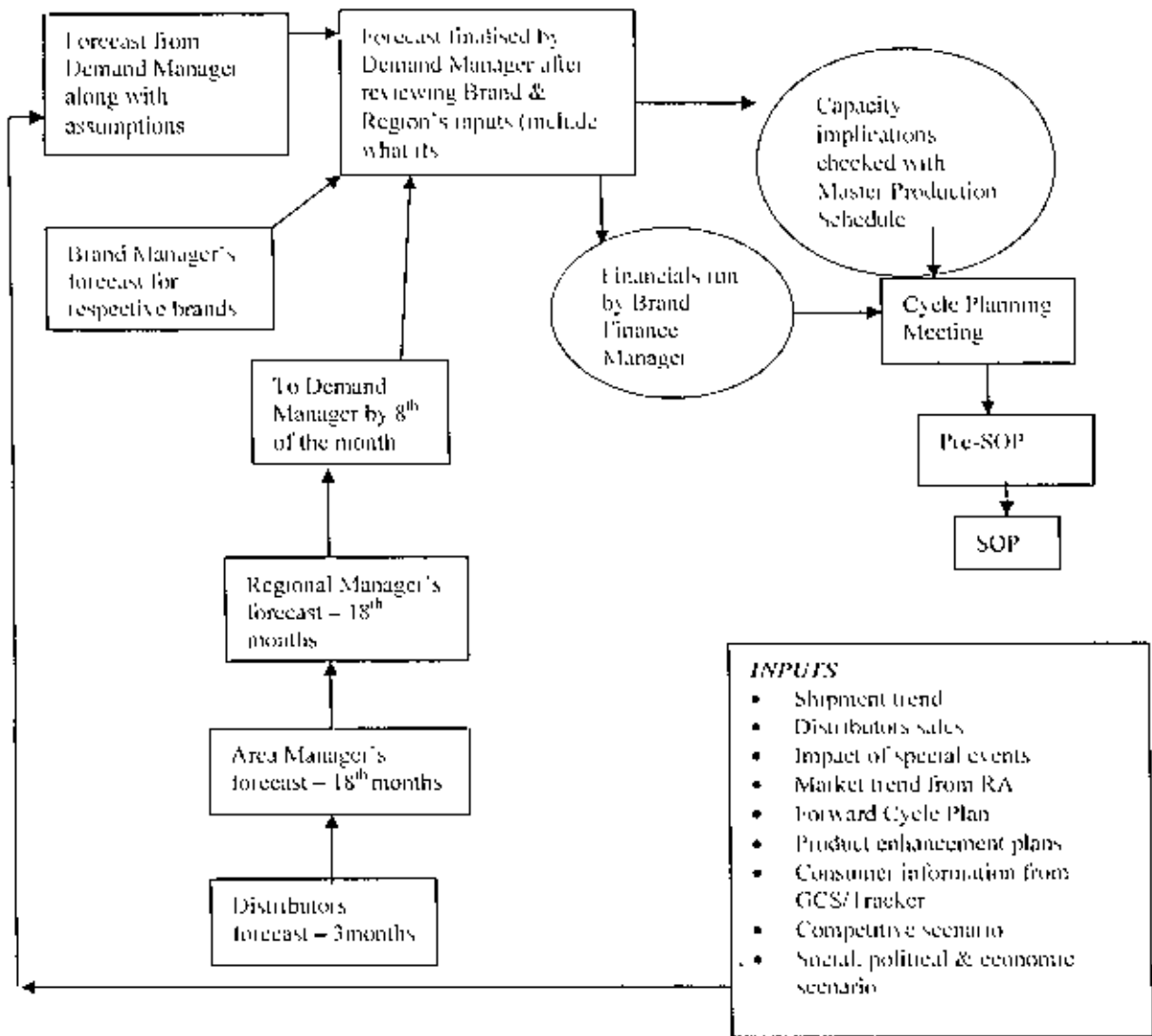


Fig. 6.3: BATB forecasting process maps

Figure 6.3 shows the detailed forecasting process in BATB



Forecast data from down the channel is collected and finalised by demand manager. The bottom line forecast made by distributors 3-months forecast, area managers-18 months forecast, regional managers 18-months forecast. Demand manager makes first time forecast by the 8<sup>th</sup> of the month and finalize the demand forecast by analyzing the brand managers forecast of the respective brand. Finally the ultimate product demand is placed to master production scheduler and brand financial manager. Based on their observations and suggestions the forecast is placed in the cycle planning meeting. Once cycle plan is approved it goes for Pre-SOP and eventually SOP.

### 6.5 Sales & Operations (S&OPS) IMPLEMENTATION Process

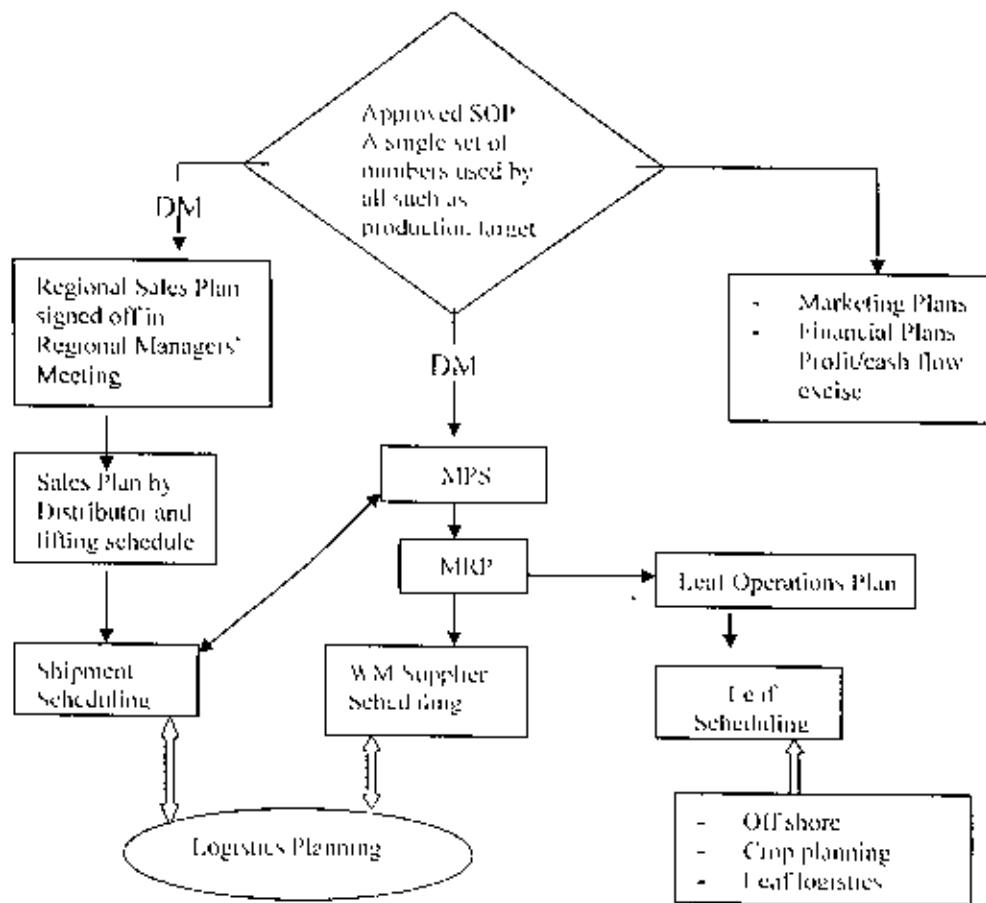


Fig. 6.4. Sales and operations implementation process

Figure 6.4 shows the sales and operational plan implementation process in BATB.

The outcome from sales and operational plans drive the other functional departments under the supply chain such as MPS, WM planning, leaf planning, logistic planning, distribution process and also marketing planning, finance planning

## 6.6 Comparison of Forecasting with Actual Sales of Few Brands

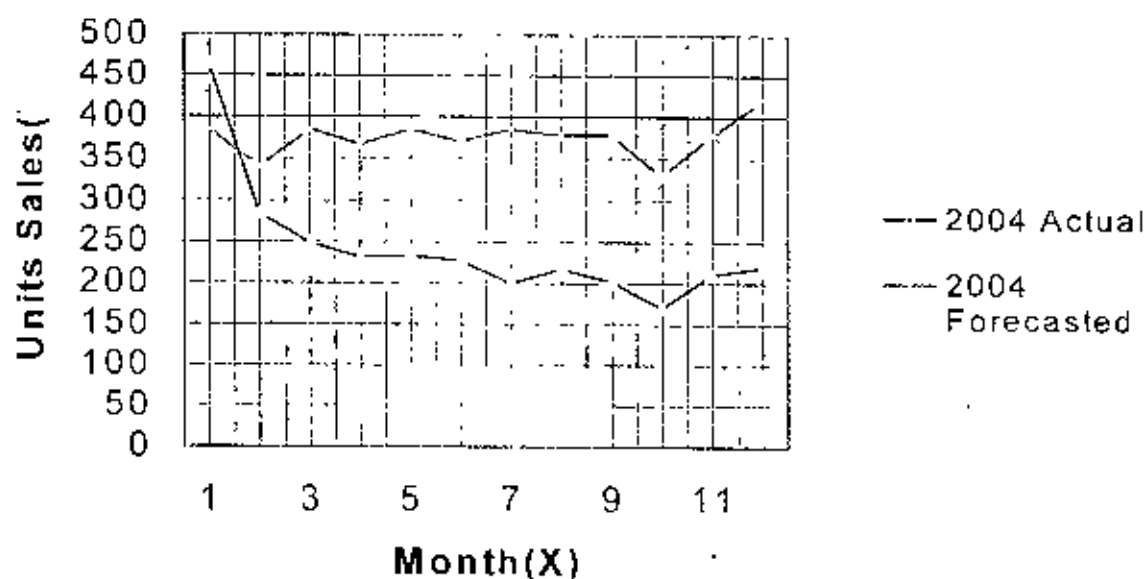
BATB demand manager is responsible to forecast of all brands, analyze the forecast accuracy at the end of month, make forecast for the next three months for all brands and finally make a conclusion against the deviation for each brand. The input for forecast and factors that need to consider before forecasting mentioned earlier. Now the data of few brands in 2004 forecasted by BATB demand manager and actual sales in 2004 is shown below with necessary remarks.

### 6.6.1 Comparison of Demand with Actual Sales of Brand A in 2004

Table 6.1  
Demand Forecast & Accuracy  
Brand A

| Month |    | Forecasted for 2004 (BATB) | Actual Sales in 2004 | Forecast Accuracy in 2004(% Error) | Remarks   |
|-------|----|----------------------------|----------------------|------------------------------------|---|
| Jan   | 1  | 385                        | 464                  | 21                                 | Higher percentage of error due to special occasion may be price change promotional activities, new product introduction etc |
| Feb   | 2  | 340                        | 284                  | -16                                |   |
| Mar   | 3  | 385                        | 248                  | -36                                |   |
| Apr   | 4  | 367                        | 231                  | -37                                |   |
| May   | 5  | 385                        | 233                  | -39                                |   |
| Jun   | 6  | 371                        | 227                  | -39                                |   |
| Jul   | 7  | 385                        | 200                  | -48                                |   |
| Aug   | 8  | 378                        | 217                  | -43                                |   |
| Sep   | 9  | 378                        | 202                  | -47                                |   |
| Oct   | 10 | 329                        | 171                  | -48                                |   |
| Nov   | 11 | 378                        | 211                  | -44                                |   |
| Dec   | 12 | 420                        | 219                  | -48                                |   |

### Comparison of Forecast with Actual Sales in 2004 (Br.A)



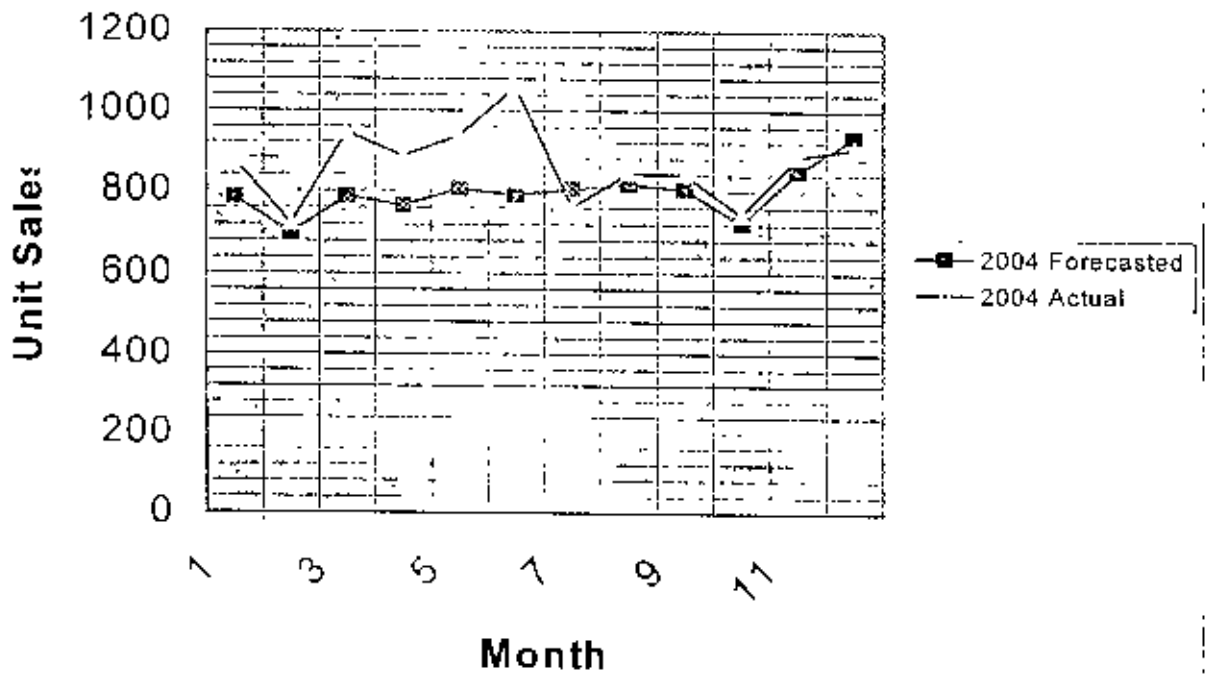
### 6.6.2 Comparison of Demand with Actual Sales of Brand B in 2004

#### Demand Forecast & Accuracy

Table 6.2 Brand B

| Month |    | Forecasted for 2004 (BATB) | Actual Sales in 2004 | Forecast Accuracy in 2004(% Error) | Remarks  |
|-------|----|----------------------------|----------------------|------------------------------------|--|
| Jan   | 1  | 785                        | 875                  | 11                                 | Higher percentage of error due to special occasion may be price change promotional activities rainy season eid holiday political problem |
| Feb   | 2  | 698                        | 721                  | 3                                  |  |
| Mar   | 3  | 787                        | 945                  | 20                                 |  |
| Apr   | 4  | 765                        | 886                  | 16                                 |  |
| May   | 5  | 807                        | 938                  | 16                                 |  |
| Jun   | 6  | 790                        | 1059                 | 34                                 |  |
| Jul   | 7  | 807                        | 762                  | -6                                 |  |
| Aug   | 8  | 816                        | 845                  | 4                                  |  |
| Sep   | 9  | 807                        | 842                  | 4                                  |  |
| Oct   | 10 | 722                        | 744                  | 3                                  |  |
| Nov   | 11 | 850                        | 885                  | 4                                  |  |
| Dec   | 12 | 935                        | 907                  | -3                                 |  |

### Comparison of Forecast with Actual Sales in 2004 (Br. B)



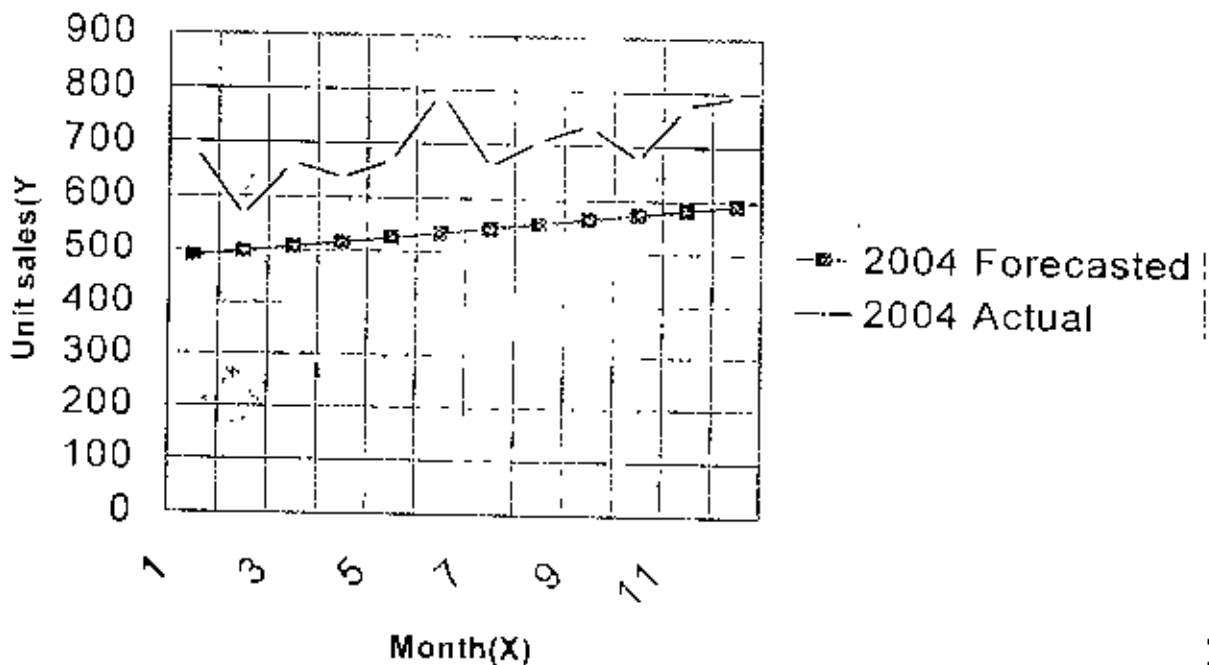
#### 6.6.3 Comparison of Demand with Actual Sales of Brand C in 2004

**Demand Forecast & Accuracy**  
Brand C

Table 6.3

| Month |    | Forecasted for 2004 (BATB) | Actual Sales in 2004 | Forecast Accuracy in 2004(% Error) | Remarks   |
|-------|----|----------------------------|----------------------|------------------------------------|---|
| Jan   | 1  | 488                        | 691                  | 41                                 | Demand of this brand naturally increasing without any effect. Sometimes this situation may occur and forecasting is difficult for such type of unusual trend. |
| Feb   | 2  | 498                        | 565                  | 13                                 |   |
| Mar   | 3  | 507                        | 663                  | 31                                 |   |
| Apr   | 4  | 517                        | 637                  | 23                                 |   |
| May   | 5  | 526                        | 667                  | 27                                 |   |
| Jun   | 6  | 536                        | 795                  | 48                                 |   |
| Jul   | 7  | 545                        | 660                  | 21                                 |   |
| Aug   | 8  | 554                        | 707                  | 28                                 |   |
| Sep   | 9  | 564                        | 737                  | 31                                 |   |
| Oct   | 10 | 573                        | 676                  | 18                                 |   |
| Nov   | 11 | 583                        | 775                  | 33                                 |   |
| Dec   | 12 | 592                        | 792                  | 34                                 |   |

**Comparison of Forecast with Actual Sales in 2004 (Br. C)**



### 7.1 Introduction

Procurement simply means purchase process of raw materials. In BATB procurement means getting the right materials and services for the operation in right time at optimum cost and developing vendors to continuously meet BATB quality requirement. Two types of procurement are performed in BATB. They are:

- Direct Procurement
- Indirect Procurement

Direct procurement is the purchasing process of any material related to cigarette. The materials include leaf and wrapping materials. Leaf comes from Kushtia and Chittagong and also from different countries. According to customer demands these leaves are blended to produce leaf of a particular type of cigarette. Wrapping materials are to wrap the leaf and for packaging purpose. These also come from a few local and foreign manufacturing companies. Table 7.1 shows the list of wrapping materials and their sources.

Table 7.1: Wrapping materials and source

| Imported   | Local  |
|--|--|
| <ul style="list-style-type: none"> <li>• Cigarette paper</li> <li>• Plug wrap paper</li> <li>• Tipping paper</li> <li>• Adhesive</li> <li>• Tolu/Triacetene</li> <li>• Inks</li> </ul> | <ul style="list-style-type: none"> <li>• HLB/ Outer</li> <li>• Foils</li> <li>• Inner frame</li> <li>• Tipping paper</li> <li>• Plug wrap paper</li> </ul> |

Any purchase required by company other than cigarette is called 'indirect procurement'. It does not include leaf, wrapping material and wages

## 7.2 Procurement Principle at BATB

Procurement principle is: "Realigned and focused with business objective of maximising cost and quality potential from primary supply chain."

Material procurement manager in BATB has to deal with the local vendor with respect of material issue, delivery, quality issue and continuous improvement. The managers other responsibilities are supplier development-education program, negotiation and long term contract, alternate sourcing, regional sourcing, coordinate raw materials planning of vendors with material planning manager, local material development and supervise the activities of logistics and planning as well.

The procurement strategy and policies of BATB are based on material management as well as general management tools and techniques. These are

- 1) Kanban System
- 2) EOQ Principle
- 3) Value Managed Relationship
- 4) Business Enabler Survey Tool (BEST)

These are briefly discussed below:

### 1) Concept of Kanban System

Kanban system is an inventory system in which BATB management will decide the maximum level of inventory. BATB and the supplier will have an agreement where both the parties fixed a specific day(s) of the week when the supplier personnel come and check the inventory level and replenish the materials according to the maximum level of inventory. The replenishment procedure will be done on daily basis by maintaining a special card called Kanban Card. After replenishing all the materials, supplier personnel will check and confirm the whole process and updating the current inventory status. The total system works on the basis of following assumptions:

- there is no uncertainty in lead times of supply
- the decisions for one item is independent to other items
- there are no constraints on the lot size.

## 2) Concept of VMR

VMR is based on the concept of value analysis/ value engineering

“Value Engineering” was first introduced into the United States Department of Defense, Navy Facilities Engineering Command in 1963 and has been used to fine tune mainly government and semi-government developments in that country ever since

Value management (VM) is a service that maximises the functional value by managing its development from concept to completion and commissioning through the audit (examination) of all decisions against a value system.

VM is an organized approach to provide the necessary function at the lowest cost. Straight omission of and enhancement is not VM.

VM is an organized approach to the identification and elimination of unnecessary cost. VM is a systematic, multi-disciplinary effort directed towards analyzing the functions of projects for the purpose of achieving the best value at the lowest overall life cycle.

### FUNCTIONAL ANALYSIS of VM

If a function is not necessary then it may be eliminated. If a function is essential then other more cost effective methods may be found to perform the same function

Basic functions are essential and must be maintained but it is often alternatives to the manner in which yield the greatest improvements in value. Secondary functions may at times be eliminated altogether or may be performed in a more cost effective manner.

The definitions of cost and worth are important. Cost is the price paid or to be paid. Worth is the least cost functional equivalent. VM focuses on areas where costs are considered excessive by using the concept of a cost worth relationship. The opportunities for improving value do not necessarily lie only in the areas of high cost. Pareto principle is used in VM to determine the relatively small amount of elements or functions that comprise 80 per cent of the project cost.

## 3) Concept of EOQ

If one has to make decision about managing an inventory, it is useful to understand the behaviour of the inventory related cost factors. This factor helps a



manager to determine which item should or should not be carried in inventory, what inventory levels should be carried for specific items and what order quantity are appropriate for the given items. Among the factors that often enter this decision process is a concept known as economic order quantity (EOQ).

EOQ concepts continue to be a versatile and useful tool if it is applied properly. EOQ suggests that the appropriate quantity to order may be one that tends to minimize all the costs associated with the order such as carrying cost, acquisition cost, material cost.

The EOQ simply says that the sum of all the indirect costs associated with inventory will be minimized on an annual basis if the material is ordered consistently with the quantity.

#### 4) Concept of BEST

BEST is abbreviated as Business Enabler Survey Tool. It is the tools of measuring the capability of a supplier in terms of quality, service and cost.

BEST has four segments such as:

- A. Process and quality control
- B. Manufacturing resources
- C. Manufacturing Policy
- D. Finance

BEST is used in BATB for evaluation of present supplier or development of prospective suppliers.

The items of consideration and major areas of judgement with respect to each segment of BEST are listed below.

##### A. Process and quality control

| Item of consideration              | Major areas of judgement   |
|------------------------------------|--|
| Mutually agreed upon specification | Specification exist that are placed and agreed by both party   |
| Design information control         | Complete documentation, approved specification   |
| Manufacturing control              | Process capabilities, control specified and & performed, process control facilities, separation of non conforming production |

|                          |   |
|--------------------------|---|
| Final acceptance         | Acceptability determined, packaging & documentation, vehicle inspection, shipping units meet at specification of product packaging and documentation  |
| Quality management       | Quality philosophy, measurable quality goals, quality objective, technical competencies, defined responsibility and authority, top management track performances, reporting relationship, quality manual, adequate training |
| Analytical methodology   | Internal standard, analytical facility equip, testing regime identified, defined and performed, method of documentation, and application  |
| Quality information      | Information maintained, retained sample and date, field information used, continuous improvement, quality certification   |
| Calibration verification | Calibration practices defined, calibration documentation  |
| Procurement control      | Supplier management, selection, raw material specification, confirm adherence to specification, supplier performance tracking, subcontractor monitoring   |
| Material control         | Risk contamination, storage procedure, unapproved materials in process control, storage facilities traceability   |

#### B Manufacturing Resources

| Item of consideration    | Major areas of judgement  |
|--------------------------|---|
| Capacity and flexibility | Capability to provide goods, multiple sources, alters schedule for demand, contingency plan |
| Facilities and equipment | Diverse technology, staffing  |

|  |   |
|--|---|
| capability                                   |   |
| Labour environment                           | Avoid work stoppage, resolve disputes, workforce integrated in decisions        |
| Equipment conditions and maintenance program | Preventive maintenance, document, tool wear, schedule maintenance, housekeeping |
| Patents & or restrictive agreement           |   |

### C. Management Policy

| Item of consideration                             | Major areas of judgement  |
|---|---|
| Leadership  | Management leadership, TQM  |
| Education and training                            | Formal training, appropriate training, training support, training records   |
| Management structure, stability & competence      | Organizational structure, training & experience, managers knowledge of technology   |
| Safety  | Appropriate & extensive, records, compliance-national & local   |
| Customer service                                  | Appropriate organization, on time delivery, correct quantity, prompt enquiry response, complete documentation, problem resolution, field support, electronic communication, lead time |
| Market involvement                                | Leader in international, desired commodity supplied, vulnerable to external forces, anti-smoking policy   |
| Business ethics & corporate social responsibility | Demonstrate commitment  |
| Technical, R & D capabilities                     | Approve scope, customer directed, customer benefits   |
| Compliance with Govt. regulations                 | Responsibility & accountability, currently in compliance  |

|                              |   |
|------------------------------|---|
| Environmental responsibility | Responsibility & accountability, currently in compliance, proactive support, environmental friendly product |
|------------------------------|---|

#### D. Finance

| Item of consideration    | Major areas of judgement  |
|--------------------------|---|
| Financial condition      | Financial stability   |
| Cost control             | Active cost control, setting standard, allocation of cost, accounting, operations staff, cost of quality, cost control benefit, inventory control |
| Cost information sharing | Ability & willingness   |
| Capital program          | Future capital expenditure & improvements   |

### 7.3 Procurement Process at BATB

Procurement manager is generally responsible about the quality of the materials, responsiveness of the supplier and total procurement or acquisition cost. The procurement process is continuously being improved and simplified to improve quality and responsiveness while simultaneously reduces the total acquisition cost.

Projections of future requirements for the purchased items are shared with suppliers to ensure adequate capacity to support business requirements. These future projections extend beyond the suppliers' quoted lead times. The following are the major guidelines followed for the procurement process.

1. Long term contract – 18 months to consolidate partnership approach
2. VMR principles – “Partner in Excellence” program
3. Local supplier rationalization – 5 major vendors
4. Drive WM “Go Cost” initiatives
5. Support global buying on key materials and base materials
6. Local sourcing development
7. Cost effective regional sourcing for Board and Printed material

8. Security of supply: BATB gives keen attention to the consistency and availability of supply
9. Appropriate quality of materials: The company gives top priority to the product quality and does not make any compromise.
10. Lowest total acquisition cost: Timing of supply is very crucial in reducing cost
11. Innovation: The Company encourages innovation of ideas.
12. Complexity reduction: Proper and consistent supply of raw materials will prevent complexity
13. Sustainable business for suppliers. BATB maintains a win-win relationships with its suppliers.
14. supplier provides with output reports (e.g. supplier schedule) from the formal planning system
15. purchase order releases have been reduced or eliminated and replaced by kanban signals for an increasing percentage of the purchased volume
16. suppliers are being certified to reduce source inspections, recovering inspection and count verification
17. delivery quantities are being economically reduced, resulting in more frequent deliveries of smaller quantities from suppliers
18. transportation cost from suppliers are being decreased even though delivery frequency is being increased
19. where appropriate materials go directly from dock to point of use, rather than from dock to stock. Central stock holders are viewed primarily at overflow locations
20. a supplier rating system has been developed and implemented and is being used to trigger improvements in supplier performance
21. suppliers practice value engineering ( e.g. design of process, product quality, costing etc) techniques and make recommendations to improve quality, cost and responsiveness for both the current and new product
22. direct communications have been established to improve responsiveness between the company operating departments and the suppliers operating departments

#### 7.4 BATB Procurement Task Flow

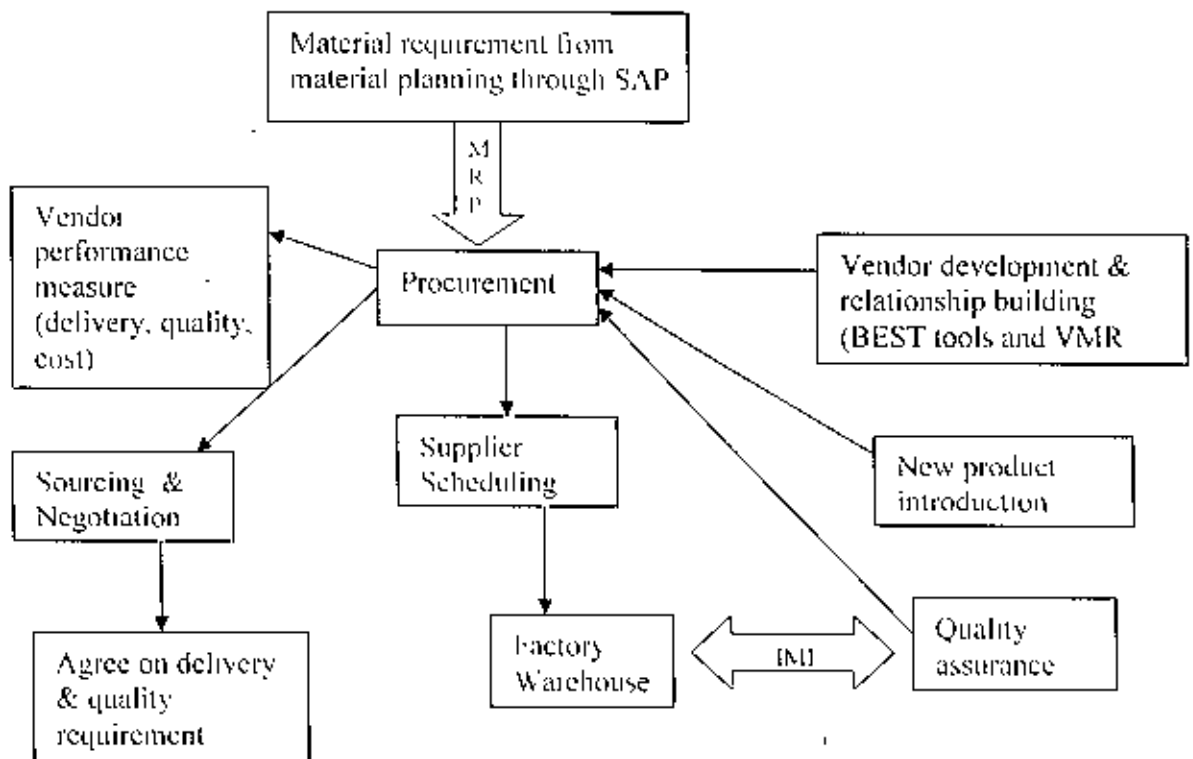


Fig. 7.1: BATB Procurement Task Flow

Figure 7.1 shows the procurement process and vendor management in BATB. Materials requirement are found from ERP tool SAP and in generally MRP recommended items are procured and purchased. Procurement manager provides the material requirement to supplier and suppliers prepare supply schedule and supply the item to factory warehouse.

In addition, procurement manager also responsible to develop vendor and build relationship through BEST & VMR tools. BATB procurement manager also responsible to measure vendor performance in terms of on time delivery, product quality and procurement cost.

#### 7.5 Procurement of Direct Materials

Materials involved in making cigarette are termed as direct materials. They are:

1. Leaf &
2. Wrapping Material

### 7.5.1 Leaf Procurement

Based on cigarette brand specification tobacco is graded which is called prized tobacco and leaf is procured in two ways such as local and overseas on the basis of tobacco grade requirement. Leaf is used to produce prized tobacco that is further used to produce cigarette sticks. Two kind of sourcing involved in leaf procurement processes such as domestic sourcing and overseas sourcing.

#### 7.5.1.1 Domestic/Local Procurement of Leaf

Figure 7.2 shows the local leaf procurement arrangement of BATB.

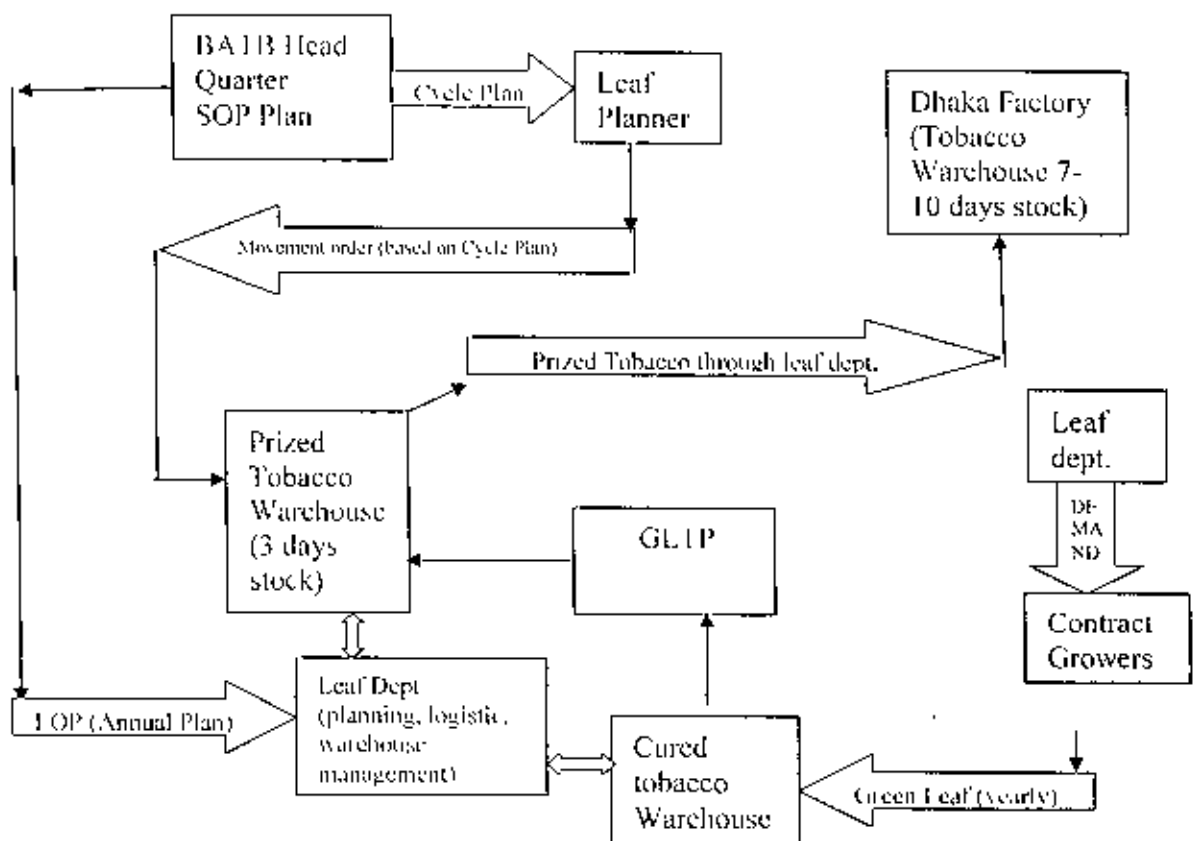


Fig. 7.2. BATB Local Leaf Procurement Processes

#### 7.5.1.2 Tobacco Planning

Tobacco required for the production of cigarettes is a blend of both or either imported or local tobacco from Bangladesh. The blend is specified for all cigarette by the leaf blender. The leaf planner is responsible for controlling the supply of tobacco to PMD based upon information supplied from the SAP system, the MPS manager and the

blender. The demand for leaf shall be established in the SOP and LOP meetings for the forthcoming period, up to 30 months. The blender is responsible for booking the quantity and grade of imported tobacco required to meet these requirements and negotiating the price. Booking for domestic leaf shall be made by the leaf blender based upon the results of the LOP meeting. The Leaf Planner establishes the lead times, economic order quantity, safety stock level and duration for all types and sources of imported tobacco.

The SAP system confirms the type and quality of tobacco required for PMD for the forthcoming period and informs the Leaf Planner of types, quantity and source of tobacco based upon the cigarette demand information input by the MPS Manager. For imported tobacco, the Leaf Planner confirms the order with the supplier based upon the SAP specification.

### **7.5.1.3 Leaf Planning**

Leaf planning is the function that ensures the supply of tobacco to the manufacturing process. This is basically a planning process involving 'what to order, when to order, how much of imported or domestic leaf. It is driven by the Sales and operation Planning (S&OP) process. Leaf planning has the following core functions to perform:

- Planning imported leaf requirement
- Planning domestic leaf requirements
- Leaf stock management

The prime purpose of leaf planning is to ensure uninterrupted supply of Bills of Materials (BOM) specified tobacco to Dhaka factory as per Materials Requirement Planning (MRP) recommendation and confirmation of leaf inventory (duration and safety stock policy) according to inventory policy and Environment Health and Safety (E & HS) requirement to be maintained in the leaf godown and in Dhaka factory.

### **Leaf Planning Process**



The leaf planning process has been developed by Enterprise Resource Planning (ERP) software- SAP where the system generates recommendations for the order quantities , order frequency and order submission date for the both domestic and imported leaf. All the required data have been stored and updated regularly in the ERP system to provide accurate record. So the data accuracy in system plays a vital role for forecasting correct MRP recommendation

#### **7.5.1.4 Green Leaf Monthly Planning**

Based upon the information provided by the LOP, SOP, Pre-SOP meeting and the comparisons of the actual results against planned results for the current month, the Leaf Planner, GLT Plant Manager, Planning and Logistics Manager, Leaf Blender, Divisional Leaf Manager and the Leaf Export Manager shall meet at end of each month. The purpose of this monthly meeting is to establish a plan for the Green Leaf requirements for GLT and Production requirements from GLT for the following month. A plan shall be established and circulated to all interested parties by the Leaf Planner. At the beginning of each season it may be necessary to have a number of preliminary meetings to prepare the first months plan. The Leaf planner shall control the timing and number of these initial meetings.

Leaf Planner, GLT plant Manager, Planning and Logistics Manager, Area Leaf Manager, and Leaf Export Manager shall meet at the end of each week. The purpose of this meeting is to refine the plan for Green Leaf requirements for GLT and the production requirements from GLT for the following week. This plan shall be established and circulated to all interested parties by the Leaf Planner.

Based upon the information provided by the monthly and weekly plans and any contingencies the Leaf planner shall establish on a daily basis the fixed plan for GLT green leaf supplies and GLT production requirements for the following three days. This fixed plan shall be established and circulated to all interested parties by the Leaf Planner.

It is planned that whenever possible the plans will be circulated via the BAIB computer system. Some times the Leaf Exports department receives urgent requests from customers which affect the GLT planning and Production process. GLT, Leaf department and the Planning and Logistics department will make every effort to meet such requirements. These requests shall be monitored by the Leaf Planner and

reported to the monthly meetings in an attempt to establish an effective way of preparing for and dealing with such urgent requests

#### **7.5.1.5 Leaf Cultivation Plan**

The leaf department is involved in cultivating and purchasing cured tobacco. Each the company registers thousands of farmers along with their land to grow and cultivate tobacco crop. BATB provides seed, fertilizer, and other loans to their farmers throughout the crop season. At the end of the season BATB purchases tobacco crop (green leaf) from the farmers, payment rates based on the grade of the leaf. Green leaf growing and buying activities are conducted through the country in the two main areas such as Kushtia leaf division and Chittagong development areas. Recently the contract farming activities are extended to Manikganj and Rangpur. After purchasing the green leaf is taken to green leaf threshing plant (GLTP).

**Green Leaf Threshing Plant (GLTP)** The green leaf is converted into a suitable form of tobacco which is called prized tobacco in GLTP. The tobacco is brought to a uniform moisture level and temperature. Blending of different grades of tobacco takes place at the GLTP and the processed tobacco is sized and packed before delivery to Dhaka factory as prized tobacco. The Prized tobacco is processed in the secondary manufacturing department (SMD) and converted into finished tobacco which is used to produce cigarette sticks. This finished tobacco is called cut tobacco.

The GLTP main objectives are:

1. separate lamina from stem
2. retain physical and chemical properties of the leaf
3. removal of foreign materials
4. conversion of bale and packed dry product capable of long time storage

The leaf department makes an estimate of the quantity of tobacco that BATB will need to purchase over the year based on the output of the annual SOP. Based on this estimates, the number of farmers and the areas of land need to be registered are fixed.

### **7.5.1.6 Future Challenges**

1. Quality and yield improvement, adapting Best Practices/Appropriate cultivation techniques
3. Substitution of imported tobacco by qualitative improvement of local grades
4. New product development : New types and varieties for modifies Virginia USIB's
5. Further improvement GLE productivity, quality standard and cost efficiency
6. Cost effective stock management
7. People and team development
8. Leaf Social-Driving corporate image through afforestation /agro-projects
9. Production of flavour grade and support to producer low delivery cigarette
10. Increase processing volume
11. Leaf storage and infestation control

### **7.5.2 Procurement of Imported Leaf**

BAFB import full flavour, semi-flavour and filter leaf from the countries of Afganistan, Argentina, Brazil, Belgium, Canada, South Africa, USA, UK and Zimbabwe. The procurement process from foreign source is shown in Figure 7.3

PROCESS MAP OF IMPORTED LEAF PROCUREMENT

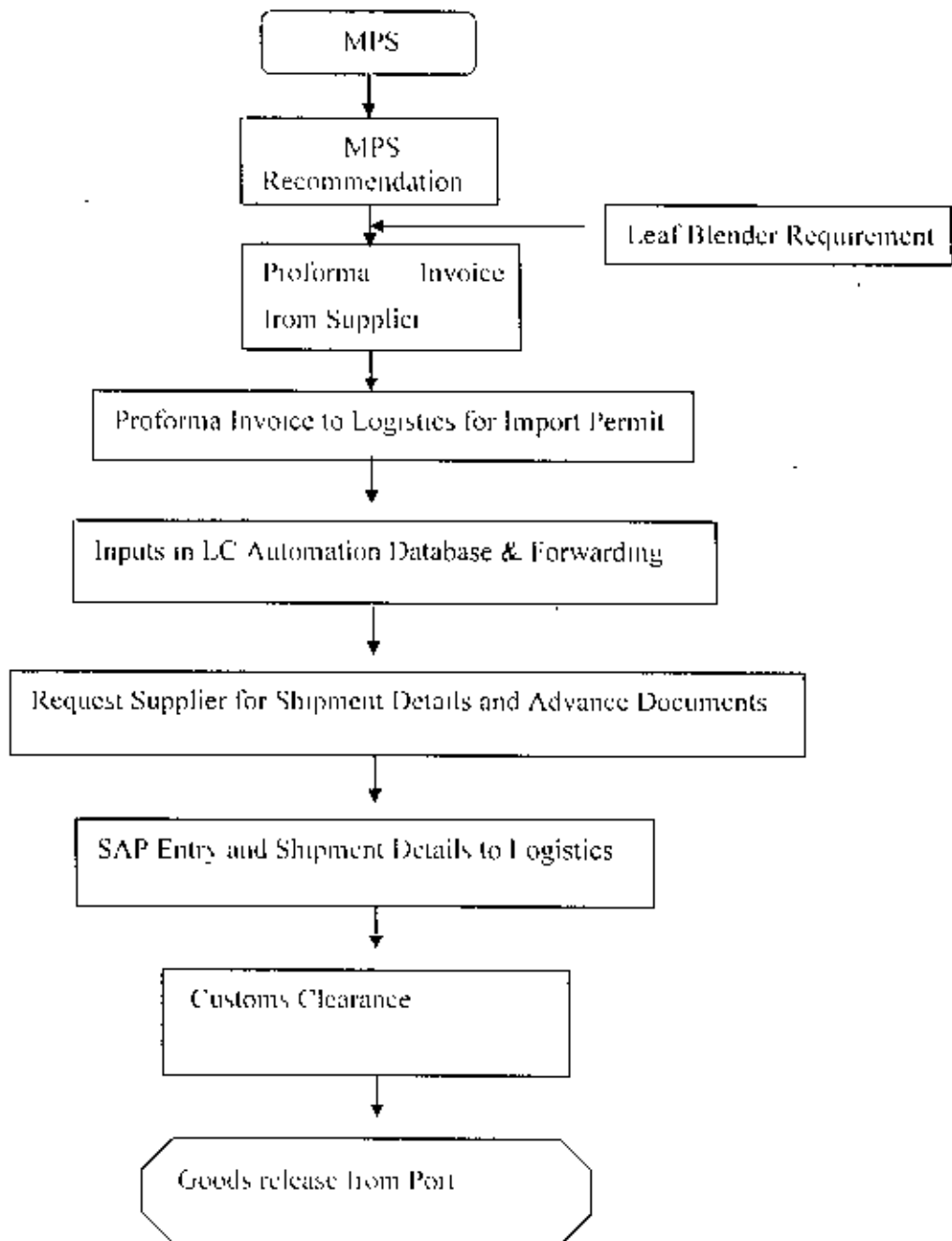


Fig. 7.3: Process Map of imported leaf procurement

### 7.5.3 Procurement of Wrapping Materials

Once upon a time BATB purchased wrapping material from overseas suppliers but now it is a credit of BATB supply chain department that they have developed a local supplier to get WM available at production floor. It has greatly influenced in working capital management by reducing total procurement cost. BATB decides what will be the raw materials for manufacturing WM at the local WM supplier premises and that local supplier is bound to purchase the raw materials from BAT overseas suppliers. So the local WM supplier is an integral part of BATB supply chain department.

The following activities are involved in WM local procurement processes:

1. materials requirement is defined according to BAT guide line
2. materials specifications are fixed according to BAT policy
3. 12-months rolling forecast is given to WM supplier
4. local WM supplier purchases the raw materials for manufacturing WM from BAT source
5. WM supplier are bound to maintain 7-days stock of their finished product
6. local WM supplier is bound to supply WM on daily basis which is maintained by Kanban inventory system

BATB maintains a service level factor in procuring any materials. It is the desired probability of not running out of stock in any one ordering cycle, which begins at the time an order is placed and ends when it arrives in the stock. This can be also regarded as the significance level of not running out of stock.

BATB management prefers to have a service level of 99% to maintain a safety stock of 22 days. There is only 1% chance of not fulfilling the order from procurement team. This service level factor is also known as significance level. The service level plays an important role in deciding the size safety stock.

Procurement of imported WM follows the same processes and procedures like the procurement of imported leaf

BATB procures leaf, WM and elements that are needed to make cigarette from local and overseas sources. BATB maintains long term relationship with the suppliers (local/overseas). For the purpose of all calculations, the lead time is calculated to be 35-60 days for imported materials and 1-day for local materials.

(local/overseas) For the purpose of all calculations, the lead time is calculated to be 35-60 days for imported materials and 1-day for local materials.

Lead times of imported items includes time required from raising proforma invoice, opening of L.C, pre-inspection, inspection, shipment, arrival, custom clearance and goods receiving

#### 7.5.4 Procurement Activities at BATB

The main strategic and operational activities of BATB are.

##### **Sourcing**

Collection of direct and indirect raw materials, there are two types of sourcing:

- Sole Sourcing. In this type of sourcing only one supplier is approved to produce any particular item
- Single Sourcing: In this sourcing method more than one supplier may be approved to produce those material, but only one supplier is used to produce the item

**Pricing and negotiation:** BATB negotiates price with its existing suppliers time to time. This is done to adjust dollar price fluctuation, price change of raw materials etc.

**Supplier planning and measurement:** In this strategic procurement activity the Company evaluates suppliers using different evaluation tools e.g. BEST. It helps suppliers planning their business for betterment of both the parties.

- **Vendor development:** BATB considers vendors as valued business partners. It desires win-win approach with them. It believes in long term relationship. It tries to improve vendor performance through proper vigilance and also train them. The strategic purpose of vendor development is to develop close relationship with local suppliers to achieve just in time (JIT) like inventory management
- **Implementation of BEST program:** BEST (Business Enablers Survey Tool) measures the degree to which a supplier has business enablers in place and provides a mechanism for identifying risk areas which can be managed out by a continuous improvement process.

It is the roles and responsibilities and required behaviour of both BATB procurement function and its direct material supplier. This outlines how the parties agree to work together and how to optimise the behavior and processes in delivering required materials to BATB premises. This agreement is reviewed time to time according to the changing demand

The service level agreement is also aimed at stable and reliable supply chain. The agreement sets up responsibilities for both parties to achieve a solidly integrated supply chain. A sample service level agreement is presented in Appendix A. 1

The performance of the supplier under the agreement is measured against key performance indicators (KPI' s) under some critical success factors.

Table 7.2 shows the KPI' s, their target level and the responsible person in respective organisation.

**Table 7.2: KPI Summary Table for Reporting**

| <b>KPI Name</b>  | <b>Target Performance Level</b>  | <b>Recommended Owner</b>   |
|--|--|--|
| <ul style="list-style-type: none"> <li>Adherence to Service Level Agreements (Exception Report)</li> </ul> | The number of exceptions per month(not more than one)  | XXXX material planner<br>YYYY Executive Director   |
| <ul style="list-style-type: none"> <li>Forecast accuracy</li> </ul>  | ≥ 90%  | XXXX Materials Planner   |
| <ul style="list-style-type: none"> <li>Inventory Coverage</li> </ul>                                       | Finished goods : 7 days<br><br>Raw materials : 45 days   | YYYY Executive Director<br>YYYY Warehouse Team   |
| <ul style="list-style-type: none"> <li>OTIF% (no stock-out policy)</li> </ul>                              | 100%   | XXXX Materials Planner<br>YYYY Supply Planner/Executive Director                                 |
| <ul style="list-style-type: none"> <li>Quality Complains &amp; QA rejects</li> </ul>                       | Target is Zero, however to reach up that accuracy level, 1 Quality Complain per month is tolerable and rejection will be the total quantity against that Complain. This rejection should be equal or less then 1% of the total quantity delivered for that particular month. | <ul style="list-style-type: none"> <li>YYYY QA department</li> <li>XXXX QA department</li> </ul> |
| <ul style="list-style-type: none"> <li>Lead time</li> </ul>  | Delivery as per<br><br>KANBAN  | XXXX Materials Planner<br>YYYY Executive Director  |
| <ul style="list-style-type: none"> <li>New Product Introduction/ Discontinuation of brands</li> </ul>      | 4 months   | XXXX Materials Planner, YYYY<br>Supply Planner / Executive Director                              |



Against KPI's both parties measure the performance under the agreement. Table 7.3 shows the BA1B chart and Table 7.4 shows the supplier measurement chart

**Table 7.3: Monthly Performance to be Measured by XXXX**

| KPI's   | Targets  | Metrics                   | Actual No. recorded for the Month | Performance (%) | Overall SLA Conformance (%) |
|---|--|---------------------------|-----------------------------------|-----------------|-----------------------------|
| No. Of Quality Complains per Month <sup>1</sup>       | Not More than one  | 0-1 = 100%                |                                   |                 |                             |
| Delivery as to the KANBAN <sup>2</sup>                | OTIF   | OTIF = 100%               |                                   |                 |                             |
| Materials Rejection through IMI <sup>3</sup>          | Not more than 1% of the total quantity delivered for the month         | 0-1 = 100%                |                                   |                 |                             |
| Finished Goods Stock <sup>2</sup>                     | 7days  | 5-9 Days stock = 100%     |                                   |                 |                             |
| Raw Materials Inventory <sup>3</sup>                  | 45 days  | 40-45 days stock = 100%   |                                   |                 |                             |
| Month end Inventory Stock Report to BA1B <sup>6</sup> | To be submitted by 2 <sup>nd</sup> working days of the following month | Within agreed time = 100% |                                   |                 |                             |

<sup>1</sup>Quality - Each complains above the target will decrease the performance by 5%

<sup>2</sup>Delivery - Each failure in delivery will Decrease the performance by 5%

<sup>3</sup>Materials Rejection through IMI-3 – every no in percentage over the target will decrease the performance by 5%

<sup>4</sup>Finished Goods Stock – More than 9 days or less than 5 days stock will decrease the performance by 2%

<sup>5</sup>Raw Materials Inventory - More than 45 days stock will decrease the performance by 2%

<sup>6</sup>Month end Inventory Stock Report to BA TB – Failure will decrease the performance by 5%

**Table 7.4: Monthly Performance to be Measured by YYYY**

| KPI's   | Targets  | Metrics                        | Actual No. recorded for the Month | Performance (%) | Overall SLA Conformance (%) |
|---|--|--------------------------------|-----------------------------------|-----------------|-----------------------------|
| Daily Materials Request from BA TB <sup>1</sup> | By 12.00 Hrs considering the consumption will start from 6.00 Hr Next day.                 | Within 12.00 hrs = 100%        |                                   |                 |                             |
| Purchase Order Processing <sup>2</sup>          | Minimum 7 working days before delivery schedule.   | Before 7 days = 100%           |                                   |                 |                             |
| Goods Receipt in the ERP System <sup>1</sup>    | Within 24 hrs. from the time of the Goods Delivery.  | Within 24 Hours = 100%         |                                   |                 |                             |
| Forecast accuracy <sup>4</sup>                  | 90 % accuracy level is expected in the monthly horizon                                     | 90% and above = 100%           |                                   |                 |                             |
| Production Schedule Change <sup>5</sup>         | For any change in the schedule for any SKU, to be communicated at least three days earlier | Before 3 Days and above = 100% |                                   |                 |                             |

|  |  |                      |  |  |  |
|--|--|----------------------|--|--|--|
| IMI-1 & IMI-2 Report Delivery <sup>6</sup> | IMI-1 & IMI-2 Report to be completed within 2 days after Sample Delivery | Within 2 Days = 100% |  |  |  |
|--|--|----------------------|--|--|--|

<sup>1</sup>Daily Materials Request – Every hour delay from the targeted time will decrease the performance by 5%

<sup>2</sup>Purchase Order Processing – Every working day below 7 days will decrease the performance by 15%

<sup>3</sup>Goods Receipt in the ERP System – Every 24 hrs beyond this target will Decrease the performance by 10%

<sup>4</sup>Forecast accuracy – Every no in percentage below the target will decrease the performance by 5%

<sup>5</sup>Production Schedule Change – Every working day below 3 days will decrease the performance by 30%

<sup>6</sup>IMI-1 & IMI-2 Report Delivery - Every working day above 2 days will decrease the performance by 5%

## 7.6 Theoretical Aspects of Indirect Procurement

### 7.6.1 Indirect Procurement

Indirect Procurement department of BAI (BD) LTD is responsible for purchase all types of products except, direct materials, leaf, permanent salaries and wages, trade discount, taxes and depreciation.

All indirect spend included:

- Stationary
- Temporary and contract labour
- Bank fees
- Electricity
- Marketing Agency fees
- Asset purchase
- Spend charged to internal orders and projects

To implement a system of purchasing indirect materials, a dedicated team uses a web based software named SRM (supply relationship management).In new environment indirect team of procurement negotiate with supplier, select supplier, fixed the price etc. At the first stage of introducing the system many users overlooked the procurement team and purchased the indirect materials at their own.

To select a supplier particularly in indirect procurement process three parties are involved. These are.

- 1 Procurement team of Indirect Material
- 2 Finance team of particular department
- 3 The user

When a user of any department needs any product, he/she informs the requirement to the indirect procurement team. Procurement team then offers the enlisted suppliers for quotations. To evaluate the suppliers, procurement team select one supplier for supply the products. Then procurement team call the respective finance team of particular department and users. All of them negotiate with suppliers for price, after sales

service and other important issues. Finally, three parties of BATB approve the supplier.

Figure 7.4 shows the whole indirect procurement process

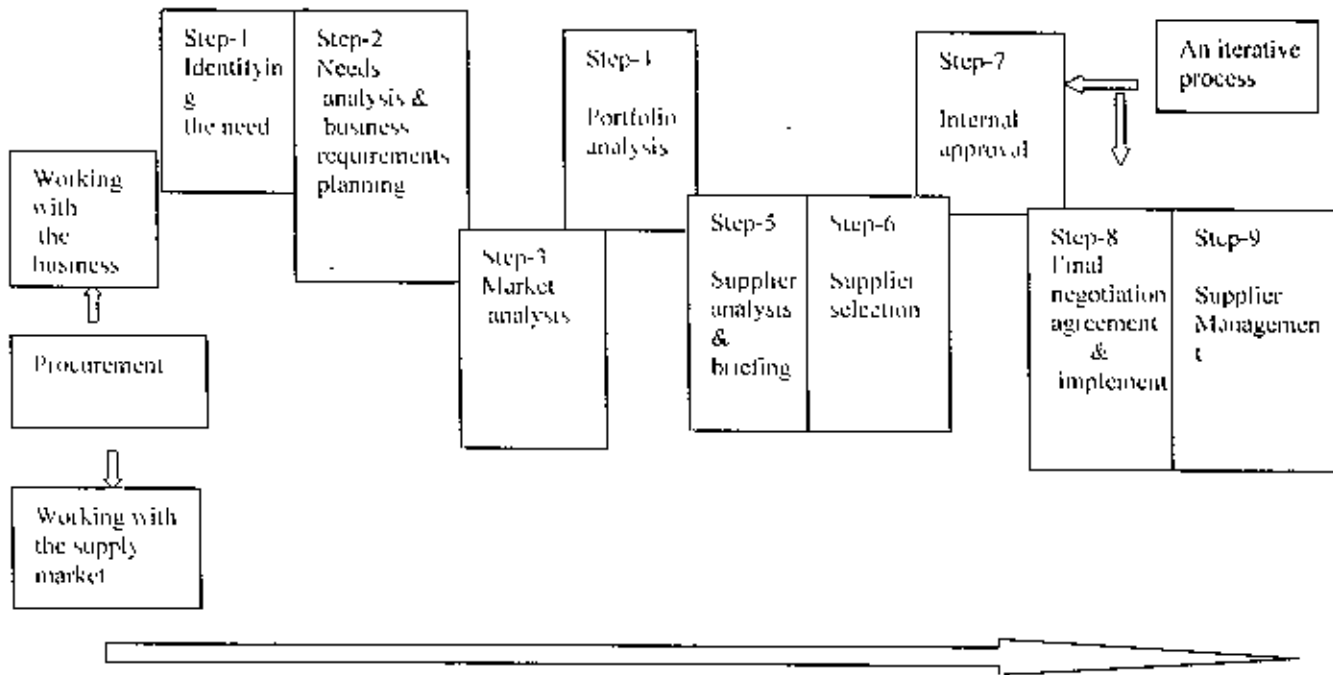


Fig. 7 4: Indirect procurement process steps in BATB

### 1. Identifying the Needs

- Dissatisfaction with current arrangements
- Expiry of a contract
- Change in the internal circumstances:
  - Expansion of business
  - Closing part of facility
- change in market and/or supply base
- Need for saving or budget pressures
- Need for supplier rationalization
- Change in business processes
- Part of constant review of high spend arrangements
- Stakeholders ask for help

Table 7.5. Risk appreciation and prioritization

| Event Description | Likelihood | Consequences | Horizon | Proposed Action |
|-------------------|------------|--------------|---------|-----------------|
|                   |            |              |         |                 |
|                   |            |              |         |                 |
|                   |            |              |         |                 |
|                   |            |              |         |                 |

12. **Market analysis** : This is an approach used to benchmark with other companies buying the product or service or with colleagues within the region, understand the market structure trends and market influences for the goods or services, fully appreciate the full range of options available, evaluate the current and future sourcing options available, match the requirements with the suppliers strengths

13. **Portfolio Analysis:**

This is a tool used to understand the nature of the purchasing portfolio and plan the actions necessary to generate profit, reduce risk, drive out complexity, and secure competitive advantages

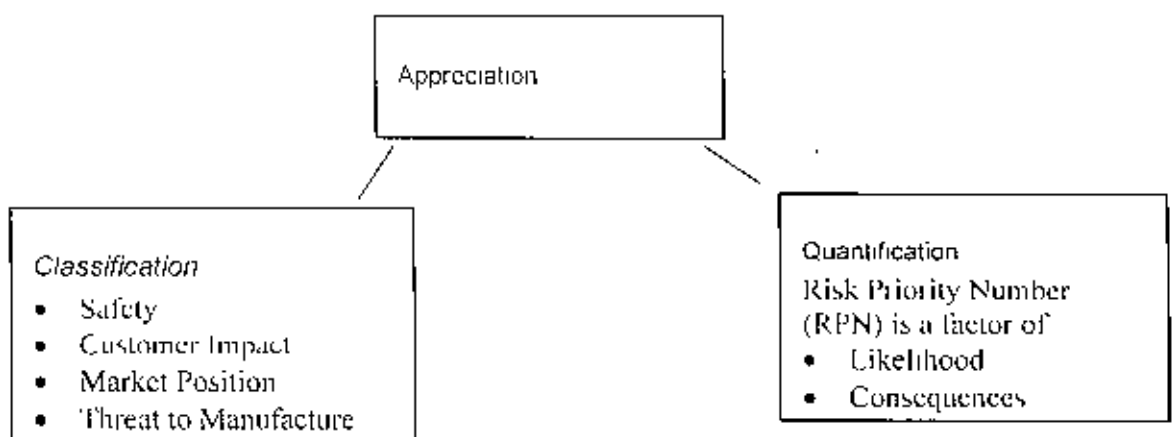
|                          |      | Annual Spend  |  |
|--------------------------|------|---|--|
|                          |      | Low   | High   |
| Supply Market Complexity | High | <b>Bottleneck</b><br>Bottleneck items where the cost is not great but tied to a particular specification of supplier                        | <b>Strategic</b><br>Critical high value items where it needs to apply proper techniques and appropriate tools            |
|                          | Low  | <b>Non-critical</b><br>"Minimise the effort" items where managing the spend using sophisticated approaches is not worth the time and effort | <b>Leverage</b><br>Segment where the risks are low i.e. there are plenty of suppliers around all anxious to bid the work |

Fig. 7.5: Portfolio of analysis of indirect materials

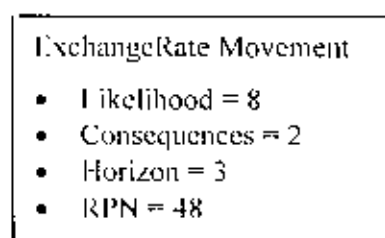
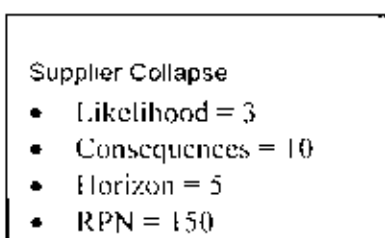
## 2. Needs analysis & business requirements planning

- Needs analysis allows procurement to better understand the requirements of key stakeholders
- Reviewed past purchases
- interviews with users specifies and significant others
- Consideration of the correct specification
- See the product or service being used
- it forms part of the supplier briefing documentation and the criteria analyses that is used to rate the suppliers
- The challenge for procurement is to see if we can move towards more generic specification increase the amount of competition which exists or remove complexity from the procurement arrangements
- At this stage understand the risks which are associated with this particular category of expenditure

### *Risk Appreciation & Prioritization*



### RPN Calculation: Example



A portfolio of indirect goods and services related to various department activities and the activities of operation department are prepared on the basis of supply market complexity versus annual spend presented in Appendix B. 1 and B. 2.

**Portfolio Analysis Implications**

|  |   |
|--|---|
| <p><b>Bottleneck</b><br/> <b>Business objective:</b></p> <ul style="list-style-type: none"> <li>• Remove risk</li> <li>• Avoid disruption</li> </ul> <p><b>Purchase actions:</b></p> <ul style="list-style-type: none"> <li>• Relax specifications</li> <li>• Develop alternatives</li> </ul>            | <p><b>Strategic</b><br/> <b>Business objectives:</b></p> <ul style="list-style-type: none"> <li>• Manage vulnerability</li> <li>• Preferred sources</li> </ul> <p><b>Purchase actions:</b></p> <ul style="list-style-type: none"> <li>• Relationship development</li> </ul>               |
| <p><b>Non-critical</b><br/> <b>Business objectives:</b></p> <ul style="list-style-type: none"> <li>• Remove complexity</li> <li>• Reduced resource</li> </ul> <p><b>Purchasing actions:</b></p> <ul style="list-style-type: none"> <li>• Simplify, standardise</li> <li>• Aggregate, delegate</li> </ul> | <p><b>Leverage</b><br/> <b>Business objectives:</b></p> <ul style="list-style-type: none"> <li>• Use competition</li> <li>• Drive for savings</li> </ul> <p><b>Purchase actions:</b></p> <ul style="list-style-type: none"> <li>• Actively play the market</li> <li>• Be tough</li> </ul> |

Fig.7.6: Portfolio analysis implication

**5. Supplier Analysis & briefing**

- Using the need analysis to establish the basic criteria suppliers are targeted for initial qualification
- A Request for information (RFI) is sent out to a potential group of suppliers for initial qualification
- The headings on the matrix and the definition of “Tomorrow’s ” are shared in the RFI to give the supplier a clear understanding of the decision criteria
- Generally these are incumbent suppliers and new platters in the marker the could drive competition and deliver a fresh perspective in marker pricing and service levels are considered



## A Supplier Analysis Framework

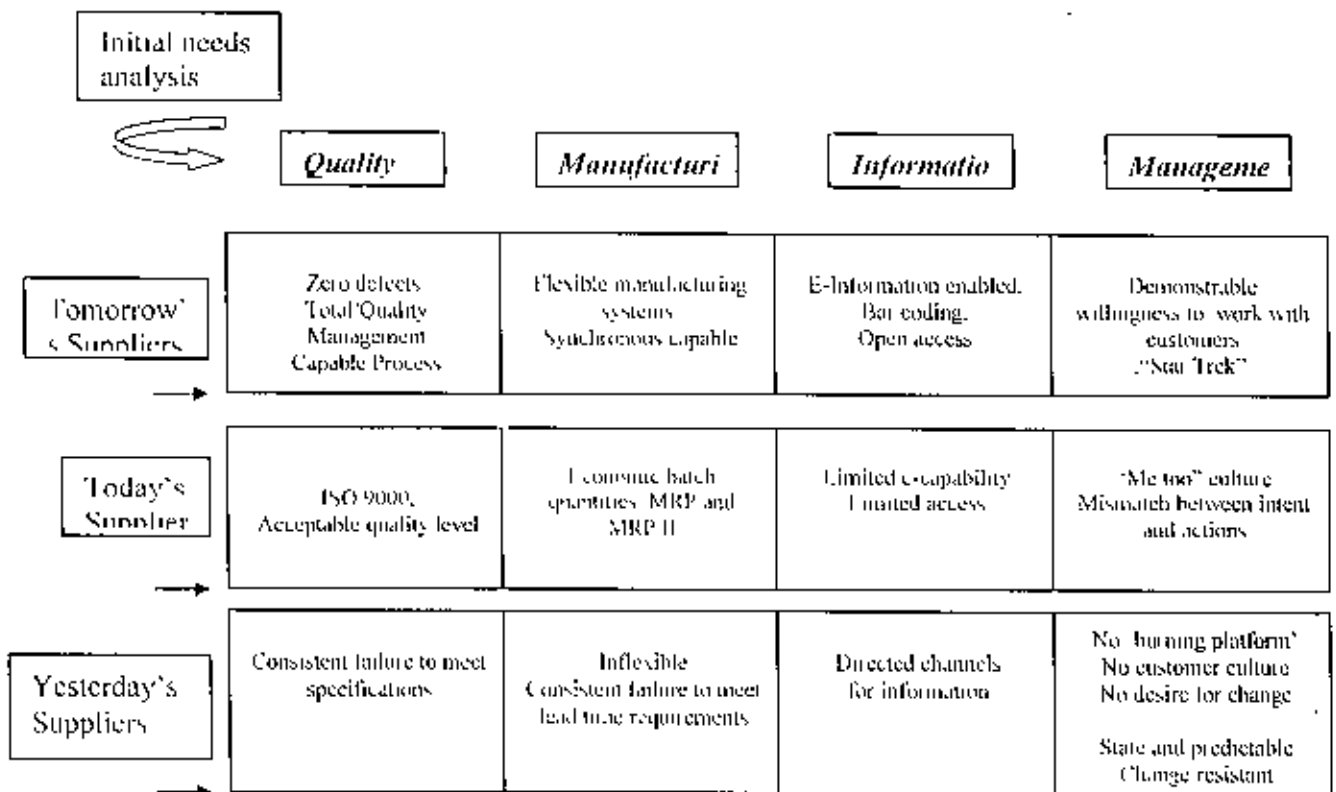


Fig. 7.7: Supplier analysis framework for indirect materials in BA1B

Each cell needs to contain information on:

- Deliverables or outputs
- Processes used

Quantification or attribute assessment is critical to success.

Service level agreements and Key Performance Indicators (KPIs) should be driven by the Tomorrow's Supplier deliverables.

## The Need for Supplier Management

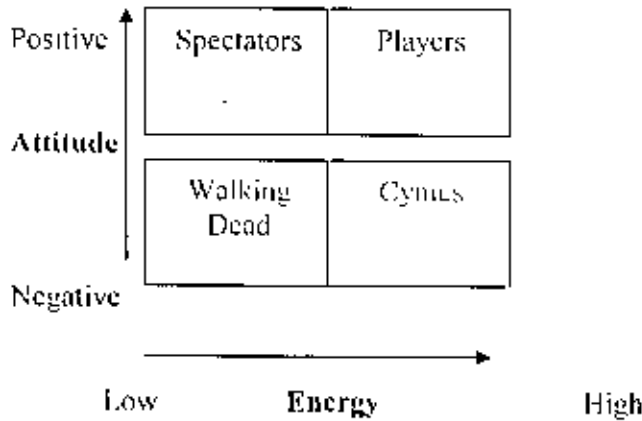


Fig. 7.8. Supplier Management Principles

The above figure shows the need for supplier management based on the category of supplier. BATB's intention to achieve player category who are energetic with highly positive attitude. BATB also interested to develop those suppliers having high positive attitude.

### 6 Supplier Selection

- This step involves matching the needs analysis information BATB with the information provide by the (pre-qualified) suppliers
- The core activity in this step is the analysis of the suppliers who are rated against the business this step often involves key stakeholders
- Formal process of this type is very helpful when trying to compete against personal preferences and subjective views but the key is to use objective and of possible criteria which can be measured and used when comparing.
- This is even more powerful if key stakeholders have been involved in the setting of the 'tomorrow's' criteria headings and the definition of performance required

7. **Internal Approval:** Indirect procurement team acts as an agent for the rest of the business and required to deliver arrangements with suppliers that meet BATB needs

## 8. Final Negotiation, Agreement & Implementation

- This may be an iterative process with step 7, as negotiations continue to meet internal requirements
- Contractual requirements should be agreed prior to giving the supplier a commitment
- Agreement to BATB terms and condition may be sought at supplier briefing stage
- Keeping a credible alternative supplier as a bargaining lever may be appropriate

Once a supplier is selected the information related to the indirect procurement is stored and transmitted through one module of BATB's ERP software, SAP. The name of the module is Supply Relationship Management (SRM). Then the process goes on as following manner:

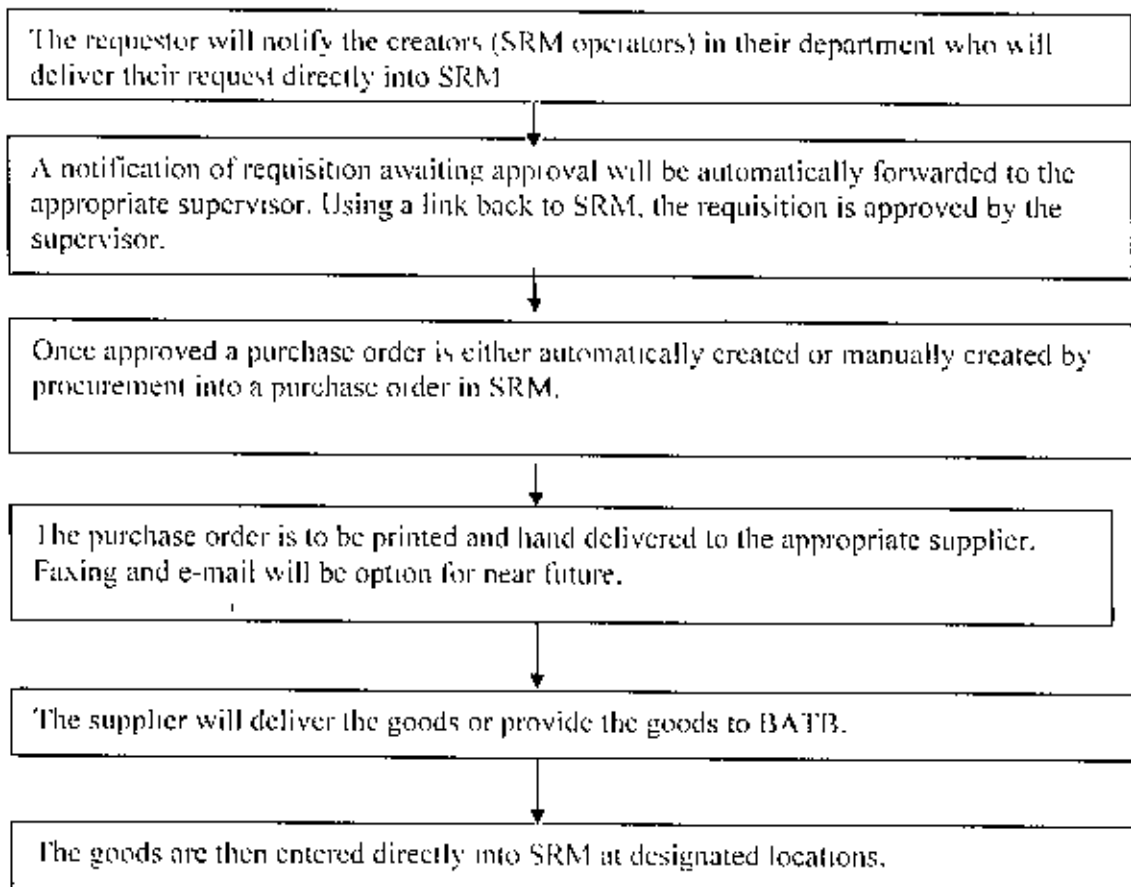


Fig. 7.9: Procurement process of indirect materials in BATB

## 7.6.2 Projects of Indirect Procurement

There are two projects related with the Indirect Procurement processes, these are described in brief as below:

### 1) Project ISIS

#### Background of Project ISIS

The new procurement environment at BAT Australia commenced in January 2002. The procure-to-pay process for all the expenditures was decentralised with stockholders raising and managers approving, requisition with stakeholders raising and managers approving requisition on-line in SAP. To centralise the process, BAT needs web based software named SRM (supply relationship Management) which is a suit procurement tools from SAP.

Project ISIS was formed in July 2002 following an Aspic GM conference in April 2002 where the learning from Australia were shared

Now, we will discuss the part of ISIS.

- (a) People
- (b) Process
- (c) System

**People:** Human resource is the most important factor for project ISIS. They has some skill and experience for giving advantages to the company. They have ability to give savings and advantages to he company through negotiating with suppliers, evaluating the suppliers and analysing price and quality.

**Process:** ISIS project is an integrated process. At first, if any department requires any products, a nominated person of that department informed the procurement team about their requirements. Then procurement team try to find out suitable suppliers through the supplier's product description like price, colour, previous performance, technical support, after sales service etc.

**System:** To complete the procurement process in correct and professional approach with minimum time and minimum cost, procurement team follow an on-line based software system named SRM. All the process from requisition to product delivery is completed through SRM system.

## 2) Project of SRM (Supply Relationship Management)

**Objectives:** There are lots of reasons behind introducing Supply Relationship Management, these are given below

1. Vendor Rationalization
2. Centralization: There is an integration process. So, it is easy to maintain a process.
3. Wrong Payment: There are listed suppliers on the process of Supply Relationship Management. So it is difficult to pay wrong suppliers.
4. Emphasize on job: Previously, if any department required any products, department would give time for purchasing that products. But now department just inform the procurement team for their required products. That's why they can give more times on their own job.
5. Professional Approach: Deliver a professional approach to procurement of Indirect.
6. Refocus: Refocus Procurement toward decision making and value adding activities.
7. Improve Quality: Improve the quality of services to the business.
8. Enhancing control: Enhancing control for all the business spends and converting this into meaningful data through management reporting.

Three types of catalogue are developed for varieties of indirect items, these are:

**Green:** Procurement has negotiated with the suppliers and for the particular product catalogue has fixed the items available, through suppliers and prices. Stationary is a good example of Green Catalogue.

**Amber:** Used where Procurement have selected a preferred suppliers for a product category but have not fixed the items available or pricing. Amber categories are used where procurement have not yet negotiated a green catalogue with the suppliers or where nature of the services offered might be inappropriate to turn into green.

**Red:** Used where no preferred supplier arrangement

### 7.6.3 BATB Supplier Selection Procedure for Indirect Item

#### 7.6.3.1 Procedure of approved supplier determination

To discuss the preferred supplier procedure, we should know the how important it is to select preferred suppliers. It's main objective is to purchase indirect materials to maximize sustainable benefits from all area of business activities. It also tries to save money, minimize cost and helps the employee's to run the company smoothly through timely supply the indirect materials with competitive price. The policies of enlisted suppliers are:

- BATB enlist suppliers in their SRM by observing their physical set up, financial strength, commitment of top management, eagerness etc.
- Procurement teams also try to find out any other good suppliers whose performance is good but not enlisted .If found they are encouraged to bid for enlistment
- The team evaluate the listed and non listed supplier through previous track record, performance of company, history, and select short-listed or approved suppliers.

#### 7.6.3.2 BATB Procedure of preferred supplier determination

After selecting the approved supplier or short-listed suppliers, procurement team then find out preferred suppliers. According to the needs and specification procurement team sometimes select one or more suppliers.

The procedure is as below:

- Procurement teams visit the approved suppliers along with concerned stakeholders.
- Evaluate their performance, procurement team select preferred suppliers through after quality of sales service, capabilities etc.

Table 7.6 shows the evaluation criteria and marking matrix.

Table 7.6. Supplier evaluation criteria and marking matrix

| Sl. NO | Evaluation Criteria   | Excellent | Very Good | Good | Poor |
|--------|---|-----------|-----------|------|------|
| 1      | Level of Physical Establishment, machineries, equipment, space, skill |           |           |      |      |
| 2      | Timely deliver track record, judgment previous case                   |           |           |      |      |
| 3      | After sales services  |           |           |      |      |
| 4      | Capacity of handle large volume                                       |           |           |      |      |
| 5      | Experience within Industry  |           |           |      |      |
| 6      | Any international certificate   |           |           |      |      |
| 7      | Financial capability of suppliers                                     |           |           |      |      |
| 8      | Range of product  |           |           |      |      |
| 9      | Price competitiveness   |           |           |      |      |
| 10     | Timely response   |           |           |      |      |
| 11     | Professionalism   |           |           |      |      |

Excellent: Point 4  
 Very Good: Point 3  
 Good: Point 2  
 Poor: Point 1

**8.1 Difficulties of Supply Chain at BATB**

In Bangladesh, implementation of supply chain management is not an easy way and BATB facing difficulties in performing the supply chain activities. The problems can be presented in three ways such as:

- A. BATB Internal difficulties
- B. BATB Global issues
- C. External issues

**A. BATB internal issues**

**1. Fragmented leaf planning** This affects BATB supply chain systems adversely. Leafs are developed as prized tobacco based on the grade of different brands and stored in different places around the country. Leaf blenders are strongly involved to maintain tobacco grade according to brand specifications and stored on the basis of tobacco grade. Since the chemistry of the tobacco and ultimate product characteristics are changed due to crop year and tobacco maturity level, the manufacturing of a certain grade of tobacco is affected adversely. Also leaf characteristics are varied from country to country, and season to season. So, sometimes leaf of one grade is required to replace with other grade to achieve acceptable grade of tobacco. In this case, tobacco samples are analyzed and found out a compensation plan of leafs. This compensation plan of leafs affects whole supply chain planning processes.

**2 Lack of complete visibility of cycle plan & new product development activities**

Introducing of new product, there is a high risk and uncertainty, since there is no historical data of that particular product to forecast market demand. Major uncertainties arise with respect to forecast accuracy, materials requirement planning, production planning, working capital management, raw materials and finished good inventory management etc.



### 3. Local Sourcing

Local suppliers are using poor technology in their manufacturing process and unable to supply materials and appropriate services on time. It is also difficult to develop local supplier due to unavailability of raw materials, advanced communication systems, expert of technologist etc. This is one of the major problems in establishing supply chain management.

4. Competition in lower segment & possible entry into mid / premium segment
5. Transparency & visibility of activities & data

#### B. BATB Global issues

Global strategy sometimes restricts local opportunity

#### C. External issues

1. Restriction on vehicle movements in cities. Trucks are not allowed to move in the day across the city, this makes a problem to get right materials in right time to the manufacturing floor. It also affects adversely in the procurement planning, logistic planning and distribution planning.
2. Inconsistent Political Situation Leading to Hartal/Strike

Political crisis is one of the major obstacles of materials procurement planning that ultimately results of long lead time. It further affects on operations planning, distribution, logistic planning processes and the ultimate consequence is customer dissatisfaction.

3. In transit Security of Goods

Goods are not secured during transportation due to poor govt. security.

4. Currency deviation

Continuous inflation in Bangladesh results instability of product price. Because govt. rules and regulation, customs rules are frequently changed due to currency

deviation. It affects in total planning processes of supply chain as well as efficiency of supply chain.

Following issues are also adversely affects in BAITB supply chain performances such as:

- Lack of visibility of firm forward customer orders (3 to 7 days)
- Frequent change of firm orders
- Lack of timely information of new product introduction results in high hidden cost and instability throughout supply chain
- Understanding and application of total supply chain cost
- Finished stock availability as per inventory policy

## **8.2 Risk Management in over all supply chain implementation**

The assessment and management of risks forms a fundamental part of the primary task of supply chain management.

The risks associated with individual materials or group of materials, single supplier or entire supply base, individual process or transactions.

## **8.3 Difficulties of Communication**

In the developing countries like Bangladesh, accomplishment of supply chain processes is difficult due to poor communication systems. In case of any logistic problem such as order shipment, wrong proforma invoice from supplier end, sometimes emergency communication is required to rectify these problems. Also cross enterprise collaboration is not possible due to poor communication systems which is the topmost level of supply chain management.

## **8.4 Global Trends**

Population growth, poverty and related issues, global warming and ozon depletion, resource depletion (water, soil, fossil, fuel, bio-diversity), solid waste, toxic waste and hazardous waste, environment degradation (air, water, land pollution) etc. It is not enough to have the cheapest or more reasonably priced, most widely available, nor even the most stylish or durable product – but that it is equally important to produce a product in most efficient manner possible, that is

more quality goods and services with less costs, less wastes, less material resources and less negative impact to humans and the environment.

### **8.5 Sustainable Development in Supply Chain Management**

Sustainability encompasses three major fronts.... Economic sustainability, social sustainability and environmental sustainability. All these are closely knit to form the web of sustainable development and supply chain management must meet that demand of those sustainability with well-coordinated approaches in defining and realizing the goals

Technology, the environment, and economic growth, and to investigate the challenges involved in over all supply chain management that meet the objectives of sustainable development

### **8.6 Risks of International Sourcing**

International sourcing requires additional efforts when compared with domestic Sourcing. One of the complexities of buying goods and services of foreign origin is the wide variability among the producing countries in characteristics such as quality, service and dependability.

The risks involved in cost, quality services, schedule (long lead time of delivery logistics), capability such as product, process, financial, management, contamination such as packing quality, container quality etc. contingency plan that is plans in case of earth quake, flood, strike, road accident, any kind of catastrophic event, shipping line, shipping agreement, custom clearance, violation and fluctuation of govt. rules and regulations, additional inventories, wrong pro-forma invoice, safety stock management, frequent change of inventory policy etc.

### **8.7 Product and Technology Lifecycle**

Since Bangladesh is one of a developing country, so it cannot adopt improved hi-technology due to shortage of expert manpower in the field of IT and engineering. As products go through their life cycle, the demand characteristics and the needs of the customer segments change. Supply characteristics also change as the product and production technology mature. High-tech products are particularly prone to these life

cycle swings over a very compressed time span. A product goes through life cycle phases from the introductory phases, when only the leading edge of customers is interested in it and supply is uncertain, all the way to the point at which the product becomes a commodity, the market saturated and the supply is predictable.

Problems will arise due to change the life cycle of product or technology:

- demand is very uncertain and supply may be unpredictable
- margins are often high and time is crucial to gaining sales
- product availability is crucial to capturing the market
- cost is often of secondary consideration

### 9.1 Conclusions

The study of 'supply chain' in BATB aimed at understanding the supply chain system and its components. After observing BATB supply chain systems, processes and procedures, it was found that BATB's standing is at stage-3 of supply chain maturity model but not fully established at this level. To become matured at stage-3 BATB needs to develop suppliers in such a manner so that a clear visibility of BATB's deliverables and information must exist to the supplier's suppliers through advanced communication systems and vice versa. Few suppliers were recently developed in this manner like Arbab Polypack who is the supplier of wrapping materials for BATB's cigarette manufacturing. The system is yet to be developed for other suppliers also.

In case of forecasting, it was found that forecasting is always wrong but it should always be kept in mind that the measurement of forecast error gives a direction of product future demand which acts as input of further planning. BATB forecasting process is typically seasonal and updated in each month and forecast prepared for next three months. In reality it requires a lot of input from marketing department, other regional managers, analysis of historical sales data, consideration of different occasions and finally the experience and intellectuality of demand manager. Forecasting accuracy is one of the factors to evaluate the performance of BATB supply chain. It is the bridge of BATB marketing department and procurement department. It also connects all the activities and planning of all the functional departments under the supply chain.

BATB forecast error of few brands found after comparing forecast and actual sales is shown in the table 9.1. Forecast Accuracy of Few Brand at BATB (% error)

| Brand | Range of % error    | Average % of error |
|-------|---------------------|--------------------|
| A     | From - 48% to + 21% | 38.83              |
| B     | From - 6% to + 34%  | 10.33              |
| C     | From 13% to + 48%   | 29                 |

The prime causes of higher % of error are price change, any promotional activities, occasional impacts (Eid, Puja, Ramadan, Flood, earthquake, etc ) etc. for brand A and C as shown in the above table. In case of brand B, the % of error is lower and demand was found gradually increasing which is unusual as commented by demand manager and it is difficult to forecast for such type of unusual demand.

Procurement of BATB divided into sections on the basis of materials category, one section is involved for procuring direct materials (related to cigarette manufacturing) and other one is for indirect (related to the goods and services other than raw materials for cigarette manufacturing). These two types of procuring systems are the outcome of BAT global supply chain management.

In the past BATB used to source the wrapping materials from abroad. Now it is the success of BATB supply chain management that they have been able to develop a local supplier for supplying that materials. So vendor development and supplier relationship management plays an important role on the performance of supply chain management. In addition, BATB leaf procurement is a critical process because leaf is frequently replaced during blending to develop an acceptable grade of tobacco. This process of leaf replacement is required to keep quality of ultimate product (cigarette stick) within acceptable range. So leaf planning is fragmented and created an uncertainty of leaf inventory management.

Since global procurement team handles most of the major direct materials required for cigarette manufacturer, so procurement of indirect goods and services is a new challenge in BATB supply chain management. The portfolio concept of indirect goods and services may enable to find a scope of reducing over all supply chain management cost.

Observing the process of procuring indirect materials in the new environment and compare past and present procurement system, we can say that

- new system is more user friendly and flexible.
- no interruption to get frequently used products
- products are categorised in three different categories viz. green, amber and red indicating the speed at which a product can be procured.

Performance of supply chain is very important with respect of inventory management, sales and operations planning and market forecast. BATB supply chain always focuses on the working capital management through optimizing the inventory and total procurement cost.

There are three basic steps to achieve supply chain goal:

1. Understanding the customer and supply chain uncertainty in terms of quantity of product, response time, variety of product needed, the service level required, price of the product etc.
2. Understanding the supply chain capabilities such as:

- respond to wide ranges of quantities demanded
- meet short lead times
- handle a large variety of products
- meet a very high service level
- handle supply uncertainty

### 3. Responsiveness of Supply Chain

BATB is strongly conscious about their supply chain responsiveness against their planning. If a mismatch exists between what the supply chain does particularly well and the desired customer needs, the company will either need to restructure the supply chain to support the competitive strategy.

## 9.2 Recommendations

BATB supply chain management presently working at stage-3 of supply chain maturity model and it is yet to be established. There is a scope to study the supply chain maturity model in depth and assess the current position of BATB in the supply chain maturity grid. It can be analyzed the gaps to lift up the current position in the supply chain maturity grid and develop an appropriate guide line of what input is required or what further activities are required to establish BATB at stage-3 and move toward stage-4 of supply chain maturity grid.

Demand management is one of the key factors of supply chain management and plays a vital role against the overall success of supply chain management. Since forecast accuracy was found with higher percent of error of few brands in 2004 demand, so there is a scope to study the present forecasting technique of BATB and can be developed a new technique that could be the direction of demand management efficiently and smoothly.

Since fragmented leaf planning creates difficulties of leaf procurement process and logistic planning, there could be the scope to study the leaf procurement processes and develop a guideline to rectify the present process of leaf procurement, so that other functional departments under the supply chain can work smoothly and ultimately enhance the supply chain efficiency with respect to working capital management.

BATB has no electronic database network with its suppliers. But for better performance it should have established its far ago like other well reputed organizations. It should establish it so that the suppliers get all information regarding supply and also make prediction about future.

Indirect procurement process is a new concept of procurement functions that can contribute the overall success of supply chain management. So the study of indirect procurement with details analysis of portfolio of indirect goods and services can give a direction to further success of BATTB supply chain management.



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## APPENDIX - A

### A.1: XXXX - Service Level Agreement for YYYY

This agreement outlines the roles and obligations of XXXX and YYYY as valuable business partner. The inventory management approach will be based on KANBAN based delivery by YYYY. The parties agree to work towards delivering the policies, capabilities and performance level requirements specified in this agreement.

| SLA Item                            | Points of Agreement (Requirements and Characteristics)   | Performance Level Requirements and KPIs  | Ownership (organisation and skills required)   |
|-------------------------------------|--|--|--|
| Forecast for Material Requirements  | <p>XXXX is responsible for providing daily manufacturing plan for the current month materials supply as to the daily requirement at least once in a week. XXXX is also responsible to provide 18 months forecast for supplier's materials planning</p> <p>Forecasts changes will be constrained by lead time of YYYY – any forecasts submitted during the frozen period will not be included in Supply Plan until after the frozen period (6 working days)</p> <p><i>If the forecasts are not supplied by the specified time, default is forecasts from the previous week will be used</i></p> | <p>XXXX will provide daily manufacturing plan at the beginning of every week and will update if there is any change in the plan</p> <p>MRP output will be based on 18 months rolling forecast with first two months daily, next two months weekly and rest 14 months on monthly requirement.</p> <p>Failure to provide timely forecasts is an exception to be reported</p> | XXXX<br>Materials Planner  |
| Metrics for Forecast accuracy       | <p>Key metrics will be tracked to ensure adherence to permissible forecast inaccuracy:</p> <ul style="list-style-type: none"> <li>- Forecast variance = (forecasted MRP Material Requirements – actual usage)/ actual usage</li> <li>- This measure will be used to ensure accuracy is at least 90%</li> <li>- Forecast quantities will always be entered in standard measure</li> <li>- MRP Stability</li> </ul>  | Forecast accuracy $\geq 90\%$  | Material requirements Forecasts - XXXX<br>Material Planner who will track the Forecast accuracy, etc.<br>Exceptions will be reported in the monthly KPI report |
| Daily Material Deliver at XXXX site | Ensure on-time delivery of materials against the daily request from XXXX as to the plan  | 100% Delivery performance to be maintained all time & every time   | XXXX – to ensure daily materials request &<br>YYYY – to ensure on-time delivery  |

| SLA Item                          | Points of Agreement (Requirements and Characteristics)  | Performance Level Requirements and KPIs  | Ownership (organisation and skills required)  |
|-----------------------------------|---|--|---|
| Material stock at YYYY's site     | YYYY will ensure an average of 45 days raw materials and 7 days finished goods inventory at all times. YYYY will also provide their inventory status to XXXX as to the request  | YYYY will provide a monthly inventory statement to XXXX latest by 2nd working day of each month. OITF should be maintained higher than 99% - No stock-out policy is acceptable. At least more than one alternate stock to be readily available at YYYY's warehouse | YYYY Executive Director to ensure   |
| Purchase order and payment system | Purchase order covering one month's requirement will be placed to YYYY. YYYY will deliver as per daily requirement. This Daily requirements will be communicated by XXXX warehouse supervisor Bill will be submitted in duplicate by YYYY along with goods receipt challan and VAT challan to BA1B finance department for necessary bill payment within 7 days of goods delivery  | XXXX is responsible for generating purchase order and hand over to YYYY<br><br>Payment will be on normal terms – 9 days for bill processing time<br><br>Discounted rate (for 11 days) is also available for immediate payment                                      | YYYY Finance and XXXX Finance (invoice and payment) is responsible for invoicing and payment as to the agreed Price |
| Materials rejection handling      | Faulty materials will be rejected and kept XXXX's warehouse in quarantined area. YYYY will take back the rejected materials next day and will destroy the materials. YYYY will replace the total rejected quantity immediately. Discontinuation of production due to faulty materials is not acceptable by XXXX   | YYYY will give a monthly report for destruction of rejected materials to XXXX  | YYYY Executive Director/ XXXX material Planner  |
| Lead Times                        | For existing materials, YYYY will deliver on a daily basis as per KANBAN request from XXXX warehouse<br><br>For a new material to be developed and delivered, 120 days will be required from the date of commitment to the date of delivery. This period includes sourcing of base materials, inks, printing cylinders, emboss cylinders, cutting and creasing tools and trial run. However for any emergency in getting a new job done, to meet the deadline, XXXX & | Existing materials to be delivered as per requirement<br><br>New material delivery time will depend on the complexity of design and involvement of IBG, UK   | YYYY Executive Director, XXXX product and brand development team, procurement function                              |

| SLA Item                         | Points of Agreement (Requirements and Characteristics)  | Performance Level Requirements and KPIs   | Ownership (organisation and skills required)                                      |
|----------------------------------|---|---|---|
|                                  | YYYY will work closely to increase velocity in arranging everything within the deadline wherever & whenever it is possible  |   |   |
| Supply Plan                      | YYYY Supply Planner will send a monthly stock position to XXXX showing finished goods and raw material stock<br>XXXX material planner to review YYYY report and check for accuracy against material requirements  | YYYY to send monthly stock report latest by 2nd day of each month   | YYYY Supply Planner, and XXXX Materials Planner                                   |
| Materials inventory availability | YYYY will have alternate production lot always readily available  | YYYY to mention alternate lots in the stock statement submitted monthly   | YYYY Executive Director and XXXX Material Planner                                 |
| Warehousing and QA procedures    | YYYY will inspect all finished goods before delivering to XXXX. The materials will pass through XXXX's IMI checks before accepting the goods.<br>XXXX will perform regular and random QA checks till YYYY is BEST certified   | QA rejects < 2% of total volumes delivered. No of quality faults will be recorded in quality performance database by XXXX QS which will be discussed in the monthly supplier meeting. | YYYY QA Dept and XXXX QA Dept and Procurement                                     |
| Spot Order Processing            | A spot order is an unplanned order that has not been forecasted. YYYY will endeavour to source materials, schedule production and deliver the spot order on a best efforts basis. There will be no fixed lead time for spot orders. The delivery date will be mutually agreed between YYYY and XXXX (subject to material availability and shipment schedule). Spot orders should only be on an exception) | N/A   | XXXX Materials Planner<br><br>XXXX Materials Planner and YYYY Executive Director. |
| Rush Order Processing            | A rush order is a planned order that needs to be expedited. This may result in changes to the production schedule.<br>There will be no fixed lead time for rush orders. YYYY will make every effort to accommodate the order and manufacture and deliver it 'as soon as is possible' (subject to material   | N/A   | XXXX Materials Planner and YYYY Executive Director.                               |

| SLA Item                           | Points of Agreement (Requirements and Characteristics)   | Performance Level Requirements and KPIs  | Ownership (organisation and skills required)                                    |
|------------------------------------|--|--|---|
|                                    | availability and shipment schedule). Rush orders should only be on an exception basis  |  |   |
| Cancelled Orders                   | The order is cancelled after it was produced but before shipment. In this case, YYYY will discuss and agree with XXXX on storage for the goods. XXXX would be responsible for any charges incurred.  | N/A  | XXXX<br>Materials Planner   |
| Product Specifications Changes     | Specification changes may require YYYY to procure some unique materials to satisfy XXXX requirements. Once agreed upon commitment, these materials are the responsibility of XXXX<br>Lead time and any specific additional operating requirements for these new versions of existing products will be agreed between YYYY and XXXX | All specification changes must be discussed in the monthly meetings at least 4 months before planned change date. Adherence to notice period of 4 months for specification change        | XXXX<br>Materials Planner and<br>YYYY<br>Supply Planner /<br>Executive Director |
| New Product Introductions          | Quantities of unique materials from YYYY required for new product introductions will be agreed between YYYY and XXXX. After agreed upon, these materials are the responsibility of XXXX. Lead time and any specific additional operating requirements for these new products will be agreed between YYYY and XXXX                  | All new product introductions reflected in MRP reports at least 4 months before planned introduction date. Adherence to notice period of 4 months for new product introduction           | XXXX<br>Materials Planner, and<br>YYYY<br>Supply Planner/<br>Executive Director |
| Discontinuing Brands / SKUs (XXXX) | XXXX may decide to discontinue particular products. YYYY Supply Chain requires discontinued brands to be reflected in the stock report and discussed in the monthly meeting at least 100days before planned discontinuation date   | All discontinued brands reflected in MRP Net Requirement reports at least 100days before planned introduction date. Adherence to notice period of 3 months for new product introduction. | XXXX<br>Materials Planner, and<br>YYYY<br>Executive Director                    |

## APPENDIX – B

### B.1 A Portfolio of Indirect Materials A Portfolio of Indirect Materials

|       |          |                |                              | BASIS        |                     |              |
|-------|----------|----------------|------------------------------|--------------|---------------------|--------------|
|       |          |                |                              | Annual Spend | Market Complexities | Group        |
|       |          |                |                              | Hi           | Lo                  | Bottleneck   |
|       |          |                |                              | Lo           | Hi                  | Leverage     |
|       |          |                |                              | Hi           | Hi                  | Strategic    |
|       |          |                |                              | Lo           | Lo                  | Non Critical |
| Sl No | Category | Department     | Activities                   | Annual Spend | Market complexities | Group        |
| 1     | A        | Brand          | Brand Marketing (non-agency) | Hi           | Hi                  | Strategic    |
| 2     | B        | Leaf           | Repairs & Maintenance        | Hi           | Lo                  | Bottleneck   |
| 3     | B        | IT             | Repairs & Maintenance        | Lo           | Lo                  |              |
| 4     | B        | Operations     | Repairs & Maintenance        | Hi           | Hi                  | Strategic    |
| 5     | C        | Trade          | Trade Marketing              | Hi           | Hi                  | Strategic    |
| 6     | D        | Operations     | Distribution Services        | Lo           | Lo                  | Non Critical |
| 7     | D        | Supply Chain   | Distribution Services        | Lo           | Lo                  | Non Critical |
| 8     | E        | Human Resource | Training                     | Lo           | Lo                  | Non Critical |
| 9     | E        | Operations     | Training                     | Lo           | Lo                  | Non Critical |
| 10    | E        | Trade          | Training                     | Lo           | Lo                  | Non Critical |
| 11    | F        | Human Resource | Computer Software            | Lo           | Lo                  | Non Critical |
| 12    | F        | IT             | Computer Software            | Lo           | Lo                  | Non Critical |
| 13    | F        | Operations     | Computer Software            | Lo           | Lo                  | Non Critical |
| 14    | F        | Trade          | Computer Software            | Lo           | Lo                  | Non Critical |
| 15    | G        | Human Resource | Security                     | Lo           | Lo                  | Non Critical |
| 16    | G        | Operations     | Security                     | Lo           | Lo                  | Non Critical |
| 17    | G        | Supply Chain   | Security                     | Lo           | Lo                  | Non Critical |
| 18    | I        | Leaf           | Rent                         | Lo           | Lo                  | Non Critical |
| 19    | I        | Operations     | Rent                         | Lo           | Lo                  | Non Critical |
| 20    | J        | Human Resource | Catering                     | Lo           | Lo                  | Non Critical |
| 21    | J        | Operations     | Catering                     | Lo           | Lo                  | Non Critical |
| 22    | L        | Finance        | Motor Vehicle                | Lo           | Lo                  | Non Critical |
| 23    | L        | Leaf           | Motor Vehicle                | Lo           | Lo                  | Non Critical |
| 24    | L        | IT             | Motor Vehicle                | Lo           | Lo                  | Non Critical |
| 25    | L        | Operations     | Motor Vehicle                | Lo           | Lo                  | Non Critical |
| 26    | L        | Trade          | Motor Vehicle                | Lo           | Lo                  | Non Critical |
| 27    | M        | Brand          | Marketing Agency             | Hi           | Hi                  | Strategic    |
| 28    | N        | Human Resource | Community Services           | Lo           | Lo                  | Non Critical |
| 29    | N        | Leaf           | Community Services           | Lo           | Lo                  | Non Critical |
| 30    | N        | IT             | Community Services           | Lo           | Lo                  | Non Critical |
| 31    | N        | CORA           | Community Services           | Lo           | Lo                  | Non Critical |
| 32    | O        | Human Resource | Fuel                         | Lo           | Lo                  | Non Critical |
| 33    | O        | Leaf           | Fuel                         | Lo           | Lo                  | Non Critical |
| 34    | O        | Trade          | Fuel                         | Lo           | Lo                  | Non Critical |

|    |   |            |                     |    |    |              |
|----|---|------------|---------------------|----|----|--------------|
| 35 | P | Leaf       | Corporate Relations | Lo | Lo | Non Critical |
| 36 | P | CORA       | Corporate Relations | Lo | Lo | Non Critical |
| 37 | Q | Leaf       | Temporary Labour    | Lo | Lo | Non Critical |
| 38 | R | IT         | Computer Hardware   | Lo | Hi | Leverage     |
| 39 | T | Operations | Software            | Lo | Lo | Non Critical |

**B. 2 A Portfolio of Indirect Materials  
Operations and Supply Chain Department**

| A Portfolio of Indirect Materials<br>Operations and Supply Chain Department |              |                                    | BASIS        |                     |              |
|---|--------------|------------------------------------|--------------|---------------------|--------------|
|   |              |                                    | Annual Spend | Market Complexities | Group        |
|   |              |                                    | Hi           | Lo                  | Bottleneck   |
|   |              |                                    | Lo           | Hi                  | Leverage     |
|   |              |                                    | Hi           | Hi                  | Strategic    |
|   |              |                                    | Lo           | Lo                  | Non Critical |
| SI No.  | Category     | Description                        | Annual Spend | Market complexities | Group        |
| 1   | Travelling   | Local travelling                   | Lo           | Lo                  | Non Critical |
| 2   | Travelling   | Overseas travelling                | Hi           | Lo                  | Bottleneck   |
| 3   | Travelling   | Overseas visitors                  | Lo           | Lo                  | Non Critical |
| 4   | Travelling   | Home leave                         | Hi           | Lo                  | Bottleneck   |
| 5   | Training     | Local travelling                   | Lo           | Lo                  | Non Critical |
| 6   | Training     | Overseas                           | Lo           | Lo                  | Non Critical |
| 7   | Training     | Framing center                     | Lo           | Lo                  | Non Critical |
| 8   | Training     | Software training                  | Lo           | Lo                  | Non Critical |
| 9   | Vehicle Pool | Running expenses.                  | Lo           | Hi                  | Leverage     |
| 10  | Vehicle Pool | Repairs & maintenance              | Lo           | Hi                  | Leverage     |
| 11  | Vehicle Pool | Road taxes & licences              | Lo           | Hi                  | Leverage     |
| 12  | Vehicle Pool | Accident repairs                   | Lo           | Hi                  | Leverage     |
| 13  | Vehicle Pool | Drivers wages                      | Lo           | Hi                  | Leverage     |
| 14  | Canteen      | Meal assistance                    | Lo           | Lo                  | Non Critical |
| 15  | Canteen      | Allowance                          | Lo           | Lo                  | Non Critical |
| 16  | Security     | Security                           | Hi           | Hi                  | Strategic    |
| 17  | Security     | Security appliance                 | Hi           | Hi                  | Strategic    |
| 18  | Security     | Fire appliance                     | Hi           | Hi                  | Strategic    |
| 19  | Security     | Security survey                    | Hi           | Hi                  | Strategic    |
| 20  | Security     | Security intelligence              | Hi           | Hi                  | Strategic    |
| 21  | Security     | Counter investigation              | Hi           | Hi                  | Strategic    |
| 22  | Security     | Loss investigation                 | Hi           | Hi                  | Strategic    |
| 23  | Security     | Warehouse security                 | Hi           | Hi                  | Strategic    |
| 24  | Security     | Warehouse fire appliance           | Hi           | Hi                  | Strategic    |
| 25  | Safety       | Safety                             | Lo           | Hi                  | Leverage     |
| 26  | Safety       | Training program                   | Lo           | Lo                  | Non Critical |
| 27  | Utilities    | Transformer & electrical generator | Hi           | Hi                  | Strategic    |

|    |           |                               |    |    |              |
|----|-----------|-------------------------------|----|----|--------------|
| 28 | Utilities | Boiler & steam fittings       | Lo | Lo | Non Critical |
| 29 | Utilities | Air compressor & vacuum       | Lo | Lo | Non Critical |
| 30 | Utilities | Engineering workshop          | Lo | Hi | Leverage     |
| 31 | Utilities | Tools/equipment               | Lo | Hi | Leverage     |
| 32 | Utilities | Nuts & bolts                  | Lo | Lo | Non Critical |
| 33 | Utilities | Bio-filtration                | Lo | Lo | Non Critical |
| 34 | Utilities | Central DRI                   | Lo | Hi | Leverage     |
| 35 | Utilities | Safety                        | Lo | Hi | Leverage     |
| 36 | Utilities | Fuel (oil, gas)               | Hi | Lo | Bottleneck   |
| 37 | Utilities | Water                         | Lo | Lo | Non Critical |
| 38 | Utilities | Lubricant                     | Lo | Hi | Leverage     |
| 39 | Utilities | Electrical energy (factory)   | Hi | Lo | Bottleneck   |
| 40 | Utilities | Electrical energy (generator) | Hi | Lo | Bottleneck   |

