

Internship Report



**BRITISH AMERICAN
TOBACCO**

Internship Report
On
Analysis of Total Quality Management in the
Secondary Manufacturing Department of British
American Tobacco Bangladesh



Prepared For-

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Date of Submission 22nd May, 2016

Letter of Transmittal

22nd May, 2016

Md. Tamzidul Islam
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66 Mohakhali, Dhaka.

Subject: Submission of Internship Report on “Analysis of Total Quality Management in the Secondary Manufacturing Department of British American Tobacco Bangladesh”.

Dear Sir,

With due respect, I am submitting my internship report on the above mentioned title for the fulfillment of the requirements of my Internship (BUS 400) course.

I have taken this report as an opportunity to reflect my learning about corporate life, organizational policy, internal work environment, and different aspects of Operational Management what I have learned from my 4 years long BBA Program. I believe that by collecting information for this report I have learned something very valuable that would help me in my future work field. I look forward to make the optimal use of this knowledge that I have gained from this Internship.

I would like to show my gratitude to you for giving me such a great opportunity to prove my abilities in making a quality report. I realize that my report may not be flawless; there might be some mistakes which were not noticed by me due to my inadequate professional knowledge, and I humbly apologize for that beforehand.

Thank you.

Sincerely yours,

Ayesha Siddiqua
Student ID: 12304014
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Acknowledgement

At the very outset, I am thankful to almighty Allah for giving me strength, courage and ability to accomplish the internship program as well as the internship report in a scheduled time in spite of various complications. It gives me immense pleasure to thank a large number of individuals for their cordial cooperation and encouragement which has contributed directly or indirectly in preparing this report.

Initially, I would like to express my gratitude to internship supervisor Md. Tamzidul Islam. His guidance and feedback made everything crystal clear. At first, I was jumbled that whether I would be able to make a fruitful report but with his assistance, I found a way to do everything accurately and in time. He kept me on track to complete this report and his propositions were vital in making this report as flawless as possible.

Furthermore, I must show my gratitude to my supervisor of British American Tobacco Bangladesh (BATB), Mr. Khairul Anam, who willingly took my responsibility and gave me lot of time and shared his working experiences with me. His guidance showed me a way not only to understand the office culture but also how to deal with all the employees around me.

I would also like to express my sincere thanks to all the employees of Secondary Manufacturing department, Supply Chain Division and Human Resources Division of British American Tobacco Bangladesh who helped me during my work tenure and made my experience a memorable one. And special thanks go to my project managers Mr. Nurul and Mr. Ashraf for their patience and endeavor to help me out throughout this entire journey.

Table of Contents

Executive Summary.....	01
Chapter 01.....	02-07
Chapter 02.....	08-15
Chapter 03.....	16-30
Chapter 04.....	31-54
Chapter 05.....	55-58
Chapter 06.....	59-60

Executive Summary

The aim of this paper is to analyze the internal work environment, effectiveness, efficiency and most importantly the overall operational process of Secondary Manufacturing Department as a sub department of Supply Chain division to create value and contribute to the overall growth of British American Tobacco Bangladesh as an organization. In the first part of the report I have tried to incorporate an effective overview of British American Tobacco Bangladesh as a successful business venture along with its history, offered products, operational organogram and vision for future. The second part talks specifically about SMD the department I worked for, my job responsibility, learnings during this 4 months internship period, challenges that I have faced during this work period, ways through which I have successfully overcome those problems and some recommendations from my limited understanding. The third part includes the theoretical knowledge about the following topics- 5Y, lean manufacturing, total quality management and practically how these tools of operational management is followed in the main production hub of the Supply Chain division of BATB to ensure competency as a renowned and one of the most efficacious multinational corporation operating in Bangladesh. Later on the report ends up with a conclusion and a list of references from where information has been collected for its fruitful completion.

Chapter 01

The Organization

Company Overview

❖ History:

British American Tobacco Group is the world's second largest quoted tobacco group by global market share, with brands sold in more than 200 markets. The business was formed in 1902, as a joint venture between the UK's Imperial Tobacco Company and the American Tobacco Company founded by James 'Buck' Duke. With over 300 brands in its portfolio, BAT holds large market positions in each of the regions it operates its business operation. And with one billion adult smokers around the world, BAT manufacture the cigarettes chosen by around one in eight of them thus making the company market leader in more than 55 markets. In 2015, it sold 663 billion cigarettes, made in 44 factories in 41 countries. On daily basis the company manufactures around 2 billion cigarettes. Although British American tobacco operates in a controversial market yet it has succeeded in achieving one of the most remarkable leading positions in the market. Despite its name, derived from the home bases of its two founding companies, British American Tobacco was established to trade outside both the UK and the USA, and grew from its roots in dozens of countries across Africa, Asia, Latin America and continental Europe. Till 2015 it has employed more than 85,000 people worldwide, with many more indirectly employed through its supply chain. British American Tobacco alone contributed approximately £30 billion to governments worldwide in excise and other taxes in 2015.

BAT has sustained a significant global presence for over 100 years. Its business was founded in 1902 and by 1912 had become one of the world's top dozen companies by market capitalization. BAT operates at a local, as well as global, level. BAT is working appreciably with thousands of farmers internationally in the purpose of tobacco growing. The company provides agronomy support to the farmers for quality crop production as well as they maintain the whole procedure in an environmental friendly way. Though the company doesn't own tobacco farms or directly employ farmers more than 1,000 BAT leaf technicians worldwide support some 90,000 contracted farmers worldwide.

It takes pride in the responsible way that businesses are run. And the recognition and awards it has received over the decades show it's not just BAT who think it is doing the right thing. BAT

is the first tobacco company to be included in the Dow Jones Sustainability Index in 2002 – and it has been included every year since. As a multinational organization BAT knows that in order to continue this success and grow the business it needs to operate sustainably. And that will depend on the company satisfying not only its shareholders, but also many other stakeholders.

BAT always maintains a multicultural workforce. It always tries its best to make almost identical decisions for every local stakeholder following a common framework of principles, standards, policies, strategies and delegated authorities.

BAT Bangladesh began its operations in the sub-continent in 1910 as Imperial Tobacco Company Ltd. After the Partition, Pakistan Tobacco Company (PTC) came into existence with its head office in Karachi in 1949. PTC's East Pakistan office at that time was situated in Armanitola, Dhaka and ultimately moved to Motijheel, Dhaka. After independence, Bangladesh Tobacco Company Pvt. Limited was formed in 1972 with British American Tobacco holding majority shares.

British American Tobacco Bangladesh is one of the largest private sector enterprises in Bangladesh, incorporated under the Company's Act 1913 on 2nd February 1972 and has been operating for over 100 years. Since 1972 BATB is operating as the market leader in the tobacco industry by providing some of the most powerful global and local brands. In March 1998, Bangladesh Tobacco Company changed its name and identity to British American Tobacco Bangladesh pronouncing its common identity with other operating companies in the Group. British American Tobacco Bangladesh is one of the oldest and largest multinational companies operating in Bangladesh. The British American Tobacco Group holds 65.91% share in the Company. The Government of Bangladesh owns 26.57% through several of its agencies, while 7.52% is owned by other shareholders. BATB is a public company listed on the Dhaka and Chittagong stock exchanges. The Board of Directors has nine members – a Non-Executive Chairman, four Non-Executive Directors and four Executive Directors. It is also a leading business organization in the industrial sector employing more than 11,000 people directly and a further 60,000 indirectly as farmers, distributors and suppliers. It has business contracts directly with approximately 45,000 registered farmers who produce high quality tobacco leaf.

In its effort to create an international market for Bangladeshi leaf tobacco the Company has been exporting tobacco to markets in developed countries like UK, Germany, Poland, Russia and New Zealand.

❖ **Products provided by BATB:**

The product comes in three brands: Premium, Medium and Economic brand.

Premium: Benson & Hedges Lights, Benson & Hedges Full Flavors, State Express 555

Medium: John Player Gold Leaf, Pall Mall Full Flavors, Castle, Pall Mall Lights, Pall Mall Menthol, Capstan Filter

Economic: Star Filter, Scissors Filter

❖ **New Innovation in Product:**

GloiFuse: BAT Romania has become the first test market to launch the new innovative electronic tobacco device – "GloiFuse". The GloiFuse is an electronic tobacco device which is designed to work with specifically engineered Kent cartridges (called Kent NeoPods) containing tobacco and a liquid designed to deliver a real tobacco taste and aroma. The Kent NeoPod cartridges consist of three main sections: a heating element, a liquid tank and a tobacco cavity. The heating element atomizes the nicotine containing liquid into an inhalable vapor, which then passes over a tobacco section, releasing tobacco flavored vapor to the consumer. A range of different tobacco flavors and aromas can be achieved by using different types of tobacco.



Image 01: New Innovative Product “GloiFuse”

✦ Structure of the organization

❖ Global Organization Overview:

The following picture shows the flow from the parent company to BATB-

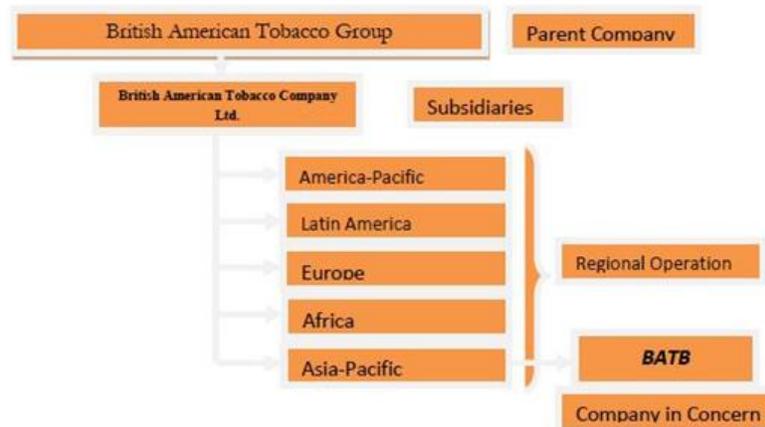


Figure 01: Global Organizational Chart

❖ Local Organizational Overview:

The structure is much decentralized with the parent company retaining authority for overall strategic direction of the Firm and financial control. Overall activities of the company are governed by the "Board of Directors" and Executive. The "Board of Directors" is composed of 10 members headed by a chairman. Chief Executive of British American Tobacco Bangladesh is called the "Managing Director" who is normally appointed by "BAT Holdings". Managing Director of the company is the chairman of the executive Committee. This committee includes the head of all the functional departments. The decision making, infrastructure is participatory to a very high extent. All the plans and decisions that are made are communicated from the top level of the organization and the decisions are made after discussing the issue with the related authority and the grass root level. Every possible input from every relevant level of workforce is taken before getting into any decision.

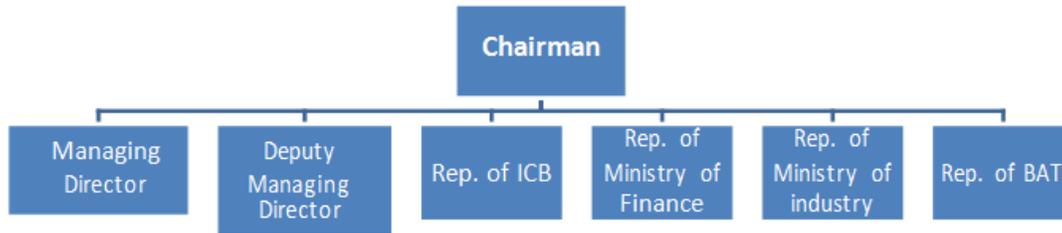


Figure 02: Local Organizational Chart

Motto, Mission and Vision for the future:

- ❖ **Motto of BATB:** "success and responsibility go together".
- ❖ **Mission of BATB:** “We delight our consumer with superior quality product through most flexible operation, and minimum cost at all times.”
 - Delivering the commitments to society, while championing informed consumer choice.
 - Ensures that their consumers are continuously well-informed about the choices they are making when they purchase our tobacco products.
 - BATB recognizes that it has a responsibility to offer a choice of products across the risk spectrum, but it also defends consumers’ right of choice and thus provides them with the products they want.
 - Adapt with the changing environment by facing challenges and making the best use of opportunities. As one of the leading international businesses, BATB has numerous responsibilities: being open about the risks of the products to supporting rural communities in the developing world.
 - Growing company’s shares of total tobacco market
 - Dominating key identified segments
- ❖ **Vision of BATB:** "To extend our leadership through world-class performance".

Chapter 02

Secondary Manufacturing Department Of Supply Chain

Assigned Department

❖ **Supply Chain Department:**

Supply chain department is one of the functional departments of BATB. Supply Chain Management Department is sub divided into other sub departments: Supply Chain Finance, Supply Chain HR, Primary Manufacturing Department (PMD), Secondary Manufacturing Department (SMD), Filter Manufacturing Department (FRD), Engineering Department, Electrical Department, Warehouse Department, Shift Office, Environmental Health and Safety Department (EHS), Product and Quality Control, Assurance Department & Procurement.

The principle tasks of the supply chain department are:

- Entire manufacturing process,
- Product development and quality assurance,
- Production plan and budget, research,
- Factory maintenance and factory employees,
- Financing, product Procurement and managing the suppliers

❖ **Secondary Manufacturing Department:**

The Secondary Manufacturing Department (SMD) is a sub department of Supply Chain. This department is responsible for the production of final products from processed tobacco blends. It uses the tobacco that is blended and conditioned by the PMD along with wrapping materials to manufacture cigarettes. The PMD delivers its final processed tobacco to the Cut Tobacco Store (CTS). The CTS has a 50-ton storage capacity and the tobacco is stored there typically for one and a half days before it is used. The SMD brings in the processed tobacco from the CTS as needed for production along with wrapping material. Moreover, SMD has another sub division under it which is Filter Manufacturing Department (FMD). The job of FMD is to produce filters of cigarettes. After production this filters are also brought to SMD and final production to packaging process are done over here. Finally, SMD delivers it final products ready for delivery to the storages from where logistics department would take the responsibility of loading the products in trucks, making it ready for final delivery to countrywide distribution outlets.

❖ **Machine Summary:**

In SMD, various technologies maker and packer are used:

Maker	
Technology	Number of machines
Protos 90 ER (Mod 10, 11, 15, 16, 17, 19, 20, 21)	8
Protos 100 (Mod 12, 22)	2
Decoufle 3D 85 (Mod 1, 2, 3, 6, 8, 9, 13, 14, 18)	9
Decoufle 3D 100 (Mod 4, 5, 7)	3
MK9	5
Packer	
Technology	Number of machines
Duplex	6
HLP	6
Focke (Mod 11, 16, 19, 20)	4
GDX 2 (Mod 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 17, 18, 21, 22, 23)	19

Table 01: Maker and Packer Machines

❖ **Organizational Structure in SMD:**

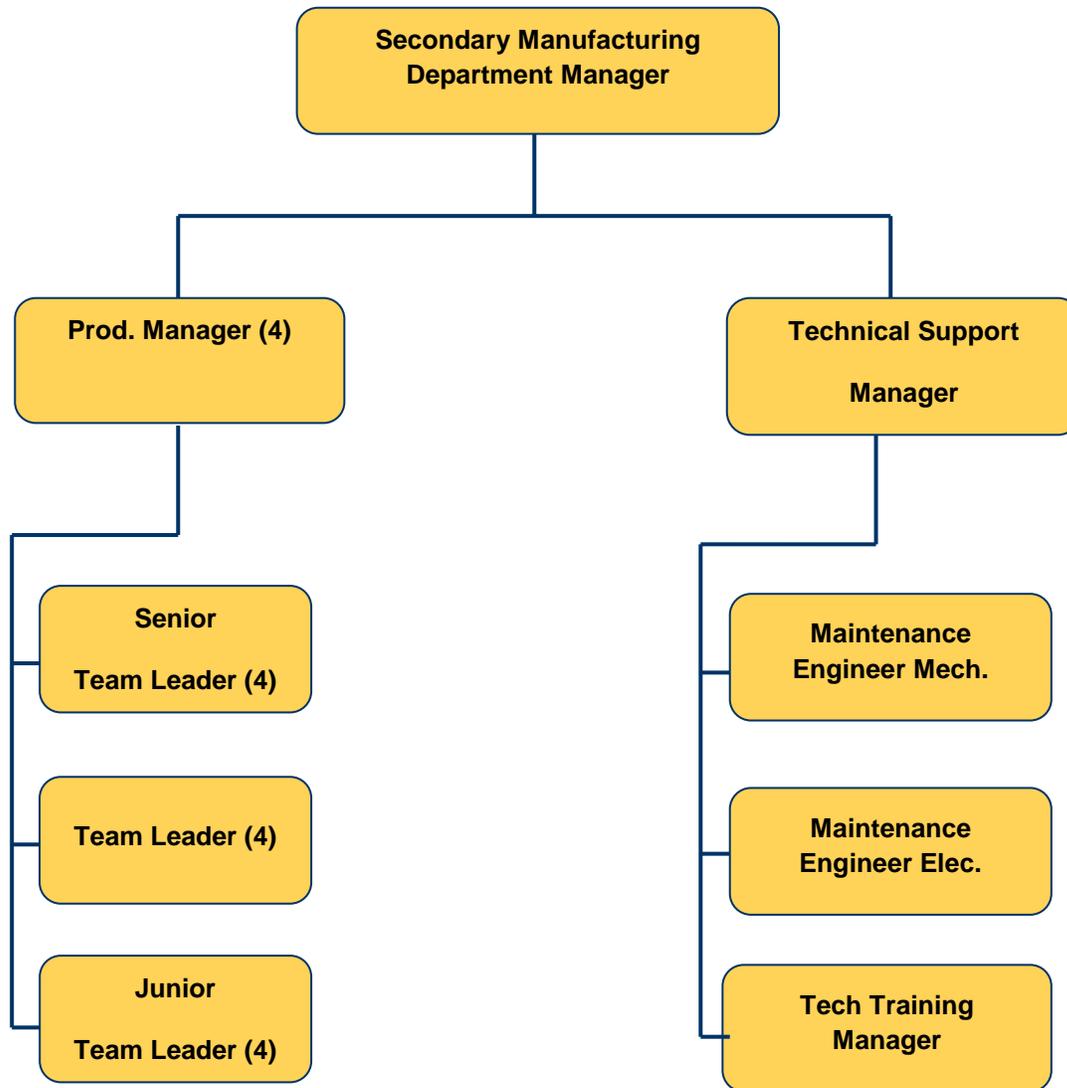


Figure 03: Organogram of SMD

There are 4 shifts in SMD. For each shift, there are one Production Manager, Senior Team Leader, Team Leader and Junior Team Leader.

❖ **Goal of SMD:**

The goal of the department is mainly working on improving the performance of the machines and maintaining the standards. SMD is the department where the final processing of a cigarette takes place. It wraps up the entire cigarette making process started by FRD and PMD respectively. Besides the machinery maintenance, the other goal of the department is to adhere to monthly preventive maintenance and yearly extended maintenance plans of machines. Moreover proper asset management is also one of the crucial goals of the department.

❖ **Role of SMD:**

The role of SMD is to reduce the unplanned downtime of the machine as this hampers the productivity greatly. Through proper asset management, the department ensures reduction in machine breakdown. SMD supports the product team a relative stakeholders which includes the marketing team, production team and Finance team, R&RS (Repair and Renewable Storage). Moreover, the principle role of the department is to achieve manufacturing excellence and the vision of the company.

❖ **Working towards achieving goal:**

- In order to ensure that PED (Production Engineering Department) team achieves their goal, SMD monitors KPI (Key performance indicator) regularly.
- It ensures KPI maintains on time which means the department is allocated a certain amount of delivery at the end of the day. SMD team members ensure that the target is met on regular basis.
- In order to reduce unplanned breakdown regular maintenance of machines are done. Maintenance is when the entire machine is disengaged, ensuring the servicing, cleaning or replacing any necessary parts before engaging the entire machine.
- Conformance to maintenance plan, this means that if the maintenance plan was 16 and the achievement has also been 16 then it is said that the conformance to maintenance plan has been met.
- Comparison between the post maintenance and pre maintenance. If the performance of machines does not improve or fall after post maintenance then it means that SMD has been inefficient in one of its processes. Analysis is carried on at these circumstances.

- SMD works on to maintaining the cost of the company. SMD is the 2nd largest maintenance team as BATB's budget holder. If the budget is not controlled then the entire company suffers. Every month the expenditures are analyzed to compare monthly savings and expenditures. The main objective at this stage is to save which if not possible or if the expenditures exceed then the previous month then analysis is carried on to find out the key factor behind the state.
 - a) In order to support the R&RS SMD performs the following tasks:
It maintains the spare parts' inventory cost within the set target. For example if the cost is more than the previous year then the maintenance coordinator will work on to improving the state.
 - b) The goal of BATB is getting rid of inventories which lays unused for more than 2 years. In R&RS several spare parts remain unused which can be only used when machines breaks down. Getting rid of the spare parts is not the wisest decision as per my manager team. In this state the task known as right of cost, scrapping the cost is done. SMD tries to make use of the spare parts in order to reduce the waste as well as the expenditure. The objective of the department is to lessen the right of cost of the present year than that of the past year.
 - c) Besides this SMD also reviews the safety cost and is involved in the inventory cost management. The objective is to reduce the downtime of the machines.
 - d) SMD helps the marketing team to reach the MPI means gaining the production initiative. For example, if the marketing team wants to change the packaging of the product then SMD and the product team will help the team to achieve the objective by adjusting the machinery parts.

❖ **Maintenance:**

• **Preventive Maintenance**

A preventive maintenance is done once every month. The activity list is prepared basing on communication book, audit jobs. Technical support team, Operator, Operator Technician & contractors take part during the maintenance. This is required to ensure smooth running of the

SMD operation throughout the month. The process flow of the preventive maintenance is given below.

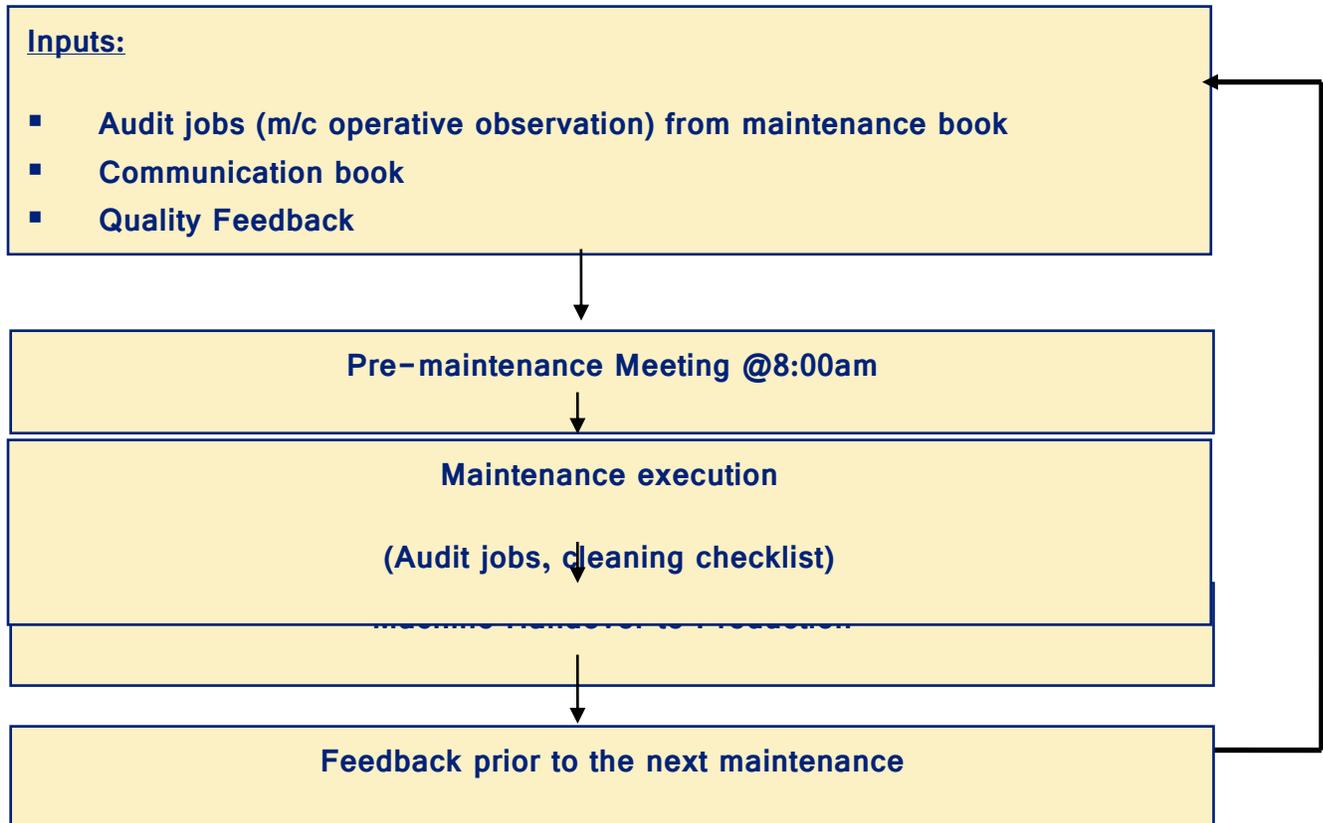


Figure 04: Plan schedule of Preventive Maintenance

✓ Activities:

For 30 days, operative technicians (maintenance pool) and process operatives filled up the communication log with their observations of machine performance. Accordingly a maintenance activity list is prepared & discussed in pre-maintenance meeting one day before the maintenance to be carried out. The machine operator, operator technician and technical support team along with contractors take part during the maintenance.

✓ Execution:

Maintenance starts at 7:00 AM and completed before 7:00 PM. The maintenance activity is recorded.

- **Cleaning**

In each 8 hours shift, 30 minutes is allocated for cleaning which is referred as shift cleaning. The machine operators execute the shift cleaning. If any minor rectification is required, it is also done during the shift cleaning.

- ❖ **Communication:**

There are four tools which are used for communication related to machine performance monitoring and reporting procedures. They are:

- **Communication Board:** Communication board is an effective tool of monitoring machine performance. It contains both general monthly information like production plan and maintenance schedules for the month as well as daily performance measures that include production volume, wastage and quality scores. The boards are updated regularly with appropriate information by the cell teams.
- **Machine History Log Book:** This tool helps in taking decision for critical spare parts replacement and preventive maintenance. Contents of this book includes major jobs done on the machine, major spare replacement, change in PLC (Programmable Logic Controller) program and modification to the machine that changes its capability.
- **Communication Log Book:** Third tool of machine monitoring is the Communication Log Book. In this log book operatives record the major events of a shift that they communicate with the operators of in-coming shift.
- **Hourly Data System (HDS):** Machine operatives enter hourly production data, lost time and causes of down time if the production level goes under a specified trigger level using this software. One computer is allotted for each high speed module to run HDS.

Chapter 03

Work Experience

Duties and Responsibilities as an Intern

❖ **Project SIMPTWW:**

The SMD of supply chain came up with the project known as SIMPTWW. It stands for SIMPTWW: safety issues, material, people, tools, where, when. The objective of the project is to come up with a standard operating procedure using which the operators will be working in the machines. The department is aiming to move from preventive maintenance strategy to autonomous maintenance strategy. In order to implement the strategy we, Aysha (intern) and I, had been assigned to prepare this manual of SIMPTWW. In the preventive strategy, the entire machine is usually disengaged in order to check the parts that are no longer working effectively. This does not cost only money but also time and energy of workers which as a result hampers the overall productivity. Thus in the future, the department would investigate and identify the exact parts that need to be disengaged in order to fix an issue. The objective of the manual is to ensure that all the detailed step in engaging and disengaging machine is recorded so that even a newly joining worker knows how to work on machines.

There are various ways in fixing a machine; however the department has been working on identifying a standard procedure of working on a machine in order to make the operators accountable for the job.

My assigned responsibility was to create the manual which consisted of the steps of engaging and disengaging a machine. Here I was also asked to record the number of people, time required and the tools necessary in fixing the machine.

A machine usually consisted of two parts: packer machine and maker machine. The maintenance coordinator of maker parts was Mr. Nurul and the maintenance coordinator of packer parts was Mr. Ashraf. I had to interact with them regularly in order to learn how to get along with their team of technicians and also to stay on track of the work flow. Additionally they were the experts of the machines thus their feedbacks were highly crucial.

➤ **Job responsibilities:**

- **Taking pictures:** The main objective of the task is to capture a clear picture of the processes of how to work on a machine. Thus in order to bring clear understanding of the task we had to take step wise pictures of the machine. I used to visit the machines that

were having maintenance because it was the only time when the machines were in halt. I used to ask every worker regarding the parts and used to take a picture of the machines. The pictures were mainly taken when maintenance was used to take place.

- **Interviewing the maintenance technicians:** In the manual I had to write down what are the steps in engaging and disengaging the different parts of each of the machines. In order to write them down I had to ask the workers on how they operated. For example, how many screws they had to open with before disengaging a machine using which tools.
- **Elaborating details with the manual:** For the maker machine, we were provided with manuals. Thus I used to go through the manuals in order to take down the steps needed in fixing a machine. Often I had to go to Mr. Nurul to help me find out the details as many machines had many substitute names.
- **Reviewing the task with superiors:** After the end of the day I used to go to Mr. Nabil (a manager working in EHS department) in the hope of getting feedbacks. However often he used to be busy thus the work used to keep piling over in hope to get checked. At the end, Mr Anam (maintenance coordinator of Production Engineering Department, SMD) gave feedback on the tasks. Lately, it is Mr Nurul and Mr. Ashraf who gives feedback on our task.

❖ **Project Safety Map:**

Safety Map is a project which has been conducted basically for EHS (Environmental Health and Safety) purposes. As I have already mentioned every machine has two different parts packer and maker and as obvious each production machine has several parts which can turn out as a hazardous one for the workers operating the machine. Thus, the main objective of the project is to identify the several dangerous parts of the machine so that machine operators can have a prior proper knowledge regarding which part of the machine they are operating can be proven lethal for them if conscious attention is not paid. Along with that, the project was designed in such a way where I was also asked to find out the sources of hazards, already taken preventive measures in the forms of safety guards (guards can be opened while the machine is running but if it gets open the machine will immediately stop), interlocked guards (these guards cannot be opened in a running machine), fixed guards (these guards can only be opened when the entire machine is in halt state) and emergency switches (a switch using which the entire machine can be stopped from

operation) and the PPE (Personal Protection Equipment) workers need to wear while working in the factory area.

One thing to add on here is that Safety Map is an International Project for British American Tobacco as a multinational organization.

➤ **Job Responsibilities:**

- **Taking pictures:** As the first step I was asked to click pictures of different parts of the entire machine both maker and packer sides. Here, one thing can be included that BATB has 23 modules (23 cigarette making machines) and each module has two parts of machine one used for making the cigarette and the other one responsible for the packaging. In the maker part BATB uses 2 types of technology one is Decoufle and the other one is Protos (both machines coming from Italy). Similarly, packer machines also do have two different technology GD (Italian technology packer machine) and Focke (German technology packer machine). I was asked to take pictures of machines operating in 23 different modules because though some modules use the same technology machine but same technological machines also do have some differences within it.
- **Interviewing machine operators:** After taking the pictures my second job was to interview machine operators who helped me to identify different risky machines parts, what can be the sources of hazards (like moving machine parts, running belt and sharp knives, electrical sensors etc.), which type of guards are already fitted over there as a risk prevention tool to cover the running machine parts and which particular PPE (Personal Protection Equipment) should be used by machine operators to work in that particular part of the machine.
- **Reviewing with supervisors:** As the final step 23 different safety modules prepared by me was reviewed by Mr. Nurul, Mr. Ashraf, Mr. Anam and finally Mr. Hasan the head of EHS department in BATB. One thing to be mentioned over here, that while the process was ongoing my line manger Mr. Anam had helped me a lot to guide me what should be the standard operating procedure for the project.

Learning Outcomes

❖ **Learning Experience:**

- **Capacity Planning:** I have a practical knowledge regarding design capacity and effective capacity as mentioned by Stevenson (pp. 179) in his book Operation Management, 2009. The production planning also helped me to understand how actual output could be reduced by unplanned machinery breakdowns.
- **Feedback Importance:** Besides I noticed how the manager, Mr. Anam ensured quality: through regular feedbacks to the team of technicians and different levels of employee. I learnt the importance of inspection during production, the corrective actions (which often meant him going stern to even the most experienced electricians from time to time) and the constant discussions between Mr. Farhad (head of PED) and Mr Anam, on how to improve the quality by overcoming any constraints. The above mentioned steps were also claimed by (Stevenson 2009, p. 447).
- **Adaptive Culture:** Through the internship I had a view on how important can an adaptive culture be. It is very crucial to contribute which motivates everyone to be a team player. Employees are usually rewarded for innovative ideas which encourage others to come up with better plans and contribute from their bit. This was relatable with the theory noted by Hill, Jones and Schilling. (2015, p. 413)
- **Implementation of OSHA (Dessler, 2011-2012):** Safety is the first and foremost priority of BATB. Thus the department EHS ensures workers' safety is taken at every possible stage. I newly viewed the importance of safety in a factory which is rare in Bangladeshi Factories. Starting from safety attire to body language everything is strictly inspected by EHS department to ensure safety of workers. Moreover in order to constantly remind people of safety measures, posters and stickers regarding safety measures are hung all over the factory.
- **Bottleneck production:** Certain steps are regularly taken to avoid the risk of bottleneck production. I learnt through observation on how this leads to unexpected expenditures and decreases the profit. (Stevenson W. J., 2009).
- **Behavior control:** Certain norms are followed by employees of all level in a company. (Hill, Jones & Schilling 2013, 2015) as such, manuals or any sort of application need to

be typed and should be in English. But documents that are prepared for training factory workers must be translated into Bangla for their better understanding of the situation. People are allowed to be flexible but at only condition: the work has to be done.

Seniors should be regarded as Bhaiya or Apu regardless of age.

- **Overcome the barriers of inclusion:** I learnt the importance of regular feedbacks by observing how bottom level employees knock their superiors to observe the results of the tasks. Here, I can relate with Dessler's theory of feedback importance (2011-2012, p. 85).
- **Machine Design:** Besides I also learnt about the modular designs, their connections and their relations. Moreover the use of fixed position layout, where procedures are standardized. (Stevenson W. J., 2009). Many of the machines are involved in both people-aided and computer-aided manufacturing. (Stevenson W. J., 2009)
- **Functional Areas of BATB:** Leaf, Supply Chain/Operations, Finance, Human Resource, Marketing, Legal and Marketing, Legal and Secretarial, Information Technology and Corporate and Regulatory Affairs. Based on common expertise, the employees are grouped. (Hill, Jones, & Schilling, 2013. 2015). I also learnt how departments are closely related with each other as such the Cigarette making in SMD and the relation with the other departments.
- **Packaging of Cigarettes:** The input of logo, pictorial warning of tobacco smoking, symbols and the form of packaging was a practical idea of the theory of packaging learnt from my different marketing courses. Beside this core knowledge, I learnt how to improve photography skills and efficiency on Microsoft office suite.

❖ **Skills development:**

Working in the department helped me develop my people leadership skills. The skills involved-

- **Fact finding:** While working with the workers they threw us a lot of analytical situations on how the machines worked and on what tools to use in what situations. I had to be a keen listener and be able to find the objective of the situation.
- **Negotiation Skill:** Maintenance technicians would be too busy to spare us time. Thus I gained an experience in negotiation. I had to assume them as my stakeholders and thus stick to them to negotiate with them into providing me the relevant information.

- **Stakeholder management:** While working with people of different age groups I had to know what words to use and what ways to choose in approaching them. I had to be patient and prioritize my objective no matter how unwilling the situation turned into. This thing gave me a practical idea regarding what should be the appropriate communication mode (both in terms of verbal and body language) to interact with different level of people working in an organization (starting from worker group to managerial level).
- **Composure:** I could not be rude or impatient whenever the workers kept on being reluctant. Instead I had to be patient in dealing with them.

❖ **Enrichment of capacities:**

- **Inspirational and influential leadership skills:** While working with the bottom line employees of the company it helped me great deal to develop my interpersonal skills. I had to listen intently in order to solve the analytical situations. Moreover it helped me great deal to reach to an appropriate decision. It must be mentioned that workers are highly specialized in their work of engaging and disengaging machines. Thus when asked to elaborate the details theoretically I had to encounter their reluctance due to their nervousness. I had to help them overcome the reluctance by accompanying them to the machines and help them create a bridge between the mechanical skills and theoretical knowledge. For instance I would ask them to show me the parts of the machines they open in series in order to bring out the parts which need fixing. This made the situation easier; they could use their own styles in describing the entire situation. This helped me to solve the problem of gathering accurate information.

Moreover, this task of gathering information needed a strong team. The internship helped me to build team with diverse work groups and has helped me in enriching the capacities in managing the team members. Often there would be slight conflicts among the workers while providing me instructions. Something said by one member would be argued and clarified by the other member; this often led to confusions and cost time. In order to overcome the situations I would ask them to practically sketch me the picture of the situation (sketch of machine and their individual parts) and help me fill in the gaps. They would do so and often it was seen that they both were right. This helped me learn that

work can be done in various ways and that different members have different specialization skills which are equally important in a team work. If all the skills can be matched with the required job objectives then not only an effective team can be built but also an objective can be achieved soon.

- **Verbal and non-verbal Communication:** Even if electricians and technicians are the bottom line employees of the company, it is necessary to consider them as stakeholders. However in order to meet the assigned objectives it is very crucial to build up communication with them. The format of questionnaires provided to us had to be elaborated to them. This involved explaining the objectives in their style so that it does not sound too sophisticated or impractical. This helped me enrich the ability to communicate through words with correct tone and manner.

Moreover I had to be very careful regarding my posture. Workers can be sensitive all of a sudden and thus a calm and patient posture was requisite. For instance, if any workers got impatient or annoyed in answering the questions then I would have restrained myself from not only pushing them further by pressuring and forcing them to answer but also from losing my temper and expressing them through facial expressions. This I noticed helped me in building up an understanding and later helped me in gathering the required details in much accurate shape.

❖ **Team Work:**

Needs of interaction: the main reason to communicate with the colleagues was to build up an effective team. Moreover in order to understand and adjust with the working environment I had to interact with the colleagues. This often involved engaging into a topic on future education plans which allowed the colleagues to open up and be supportive whenever the situation demanded.

It also creates a monotonous environment when I would straight and always drop a work related query; often I confronted their reluctance and impatience in getting over with the situation. However when there was a better communication, the work progressed effectively. They could trust me into giving vital information by aiding me in my work, allowing my professional

development. Moreover a team never reaches its goals if the team members are competing among each other. In order to overcome the tendency a vital role was played by interaction. Moreover, in order to improve the work feedbacks are always necessary and one can be open for giving feedbacks only if there is a mutual understanding. Feedbacks help into strengthening one by improving or by overcoming the weakness.

In order to accomplish 200+ SIMPTWW I needed strong support from the team. One of the barriers in accomplishing the task was encountering differences in perception and viewpoint.

The technicians had a view regarding our task that it is useless because people of the factory are always sent to get trained. A theoretical support is never enough to teach a technician how to work on a machine. Thus they were strongly reluctant into helping us. I soon figured out that a clear discussion on the real objective of the work needs to be done. Initially I depended upon my superiors to get the work done in managing the workers, but I realized this task has to be done by me as I will be interviewing and working with them, not my managers. I interacted with them, listened to their time management problems due to the additional task. I discussed with them the reason behind creating a standard operating procure which was mainly to keep a record on how the task has been usually done. Moreover, that would work as a guide for an expert to come up with effective work steps besides revising the old techniques. From the workers perspective, there were many problems like they were always burdened with the huge tasks of maintenance and thus whenever they got spare time they would be relaxing rather than refreshing their memories into what they have done practically. Thus it would be completely impossible for me to gather all the crucial data if I did not interact with them.

In order to interact with them I used to be present with them in the machines while the maintenance occurred. I agreed and reached to common viewpoint on how tedious the maintenance is. However, I had to fulfill my task thus I looked into an alternative approach. I noted down the ways, they used for disengaging and engaging a machine, through observation. Besides I realized, few workers liked directing us by giving their ideas and emphasizing on their formats which I always kept under consideration and added them in order to motivate them into helping and providing more. Sooner I learnt many of the common terms. It was not long before I could set up a fluent procedure of SIMPTWW, of course I needed further modifications but it was not like before. I could understand what I am typing in the manual, the flow and what steps are crucial in the procedure.

I would share the tasks by communicating with the team without the need of pressurizing them on setting up a formal interview. It was seen that feedbacks and willingness of workers kept coming frequently than before and many of them would be eager in helping this time. This entire process would provide positive reinforcements whenever the work was done well in their terms and I could easily use various ways into improving my task and project.

Work Experience

In the department I had to work with a team of 4 managers initially which later came down to 3, besides I formed a team of two where both of us, interns, split the tasks among us in order to attain the goals.

The main reasons to interact with the managers were to get a perfect guide and get their feedbacks in order to improve the work further. Besides, the entire factory has numerous machines whose SIMTWW cannot be done alone and thus I shared the work load with the intern, Aysha. In order to build an effective team to achieve the goal all the interactions were necessary.

❖ **Intern:**

Team work with the intern, **Aysha Rahman**, was effective. It involved sharing and utilizing all the necessary skills. For instance, she was a detail oriented worker which helped the team to gather and look into details of the task and helped us in avoiding redoing the task. Often the work involved refreshing the memory on Physics where she could easily contribute. This further allowed the team to stay on track.

Moreover she was also a team player. She has been always enthusiastic towards work and was first to step forward whenever help was needed. However, often it is seen that one's enthusiasm masks one's personal interest in gaining individual fame in a team; here the case was not seen. Aysha was careful in not excluding my roles as being a team player as well. This personality helped in building up a strong understanding in the group and took the work a lot further.

❖ **Superiors in Team building:**

The team did not consist of just my colleague but my superiors as well.

- **Manager:** Our line manager was **Khairul Anam** who is a democratic leader. This form of leadership was practiced by the entire team. As the task was entirely new for the department thus besides setting us with some assigned guidelines, the managers encouraged us in providing ideas. This practice motivated us and helped us in coming up with several strategies that were often used. Moreover, this also rekindled the feeling of importance in the department. We were given the objective the rest was upto us on how we wanted to achieve the objectives.

I also noted that the Line manager, Khairul Anam was open minded and was welcoming towards all the diverse ideas in making the work done. As like, initially he assigned the work to a line manager who had a different style of work which later on was handed over to a set of operators, and finally to the team managers of packer and maker machine team. He used all the practices in order to set up the work. There was no autocracy in the work. This is highly important in a team work. One should assign some set of guidelines but rather be open-minded as a team involves the minds of diverse work group.

- **Project Managers:** Both the managers of the packer and the maker team were experts of the team. They have in depth knowledge about machinery parts and have clear knowledge on what standards must be followed in order to create a SIMPTWW. Moreover they have strong interpersonal skills: they knew pretty well how to communicate with the technicians and negotiate with them in getting the work done. Leaders focus on the big picture within an organization and delegate smaller tasks to the team to accomplish goals.

I worked with the manager of the maker machine team, **Mr Nurul**. He was really helpful and welcoming. While working with him I got to learn a number of things. As like, Mr Nurul is a transformational leader he could motivate his team of technicians really well, and his team sees highly of him. He interacts with the bottom line employees in such a manner that it creates a feeling of importance among the members and as a result it

enhances productivity and efficiency among the workers. His style of leadership constantly kept reflecting the fact that how important communication and visibility is in a team in order to attain goals effectively and efficiently.

Mr Ashraf is the manager of packer machines. He even shares similar traits however he looks into his team members' priorities first. SIMPTWW was an additional task for his team of technicians and thus he ensured that the task did not turn into a burden for his team members.

Barriers & Finding Solutions

Challenges:

During my internship period I faced few difficulties initially. Some of them are highlighted below:

- **Lack of proper direction:** On the first day of my internship I was assigned the task of doing floor mapping. Here I was not well instructed on how to start the mapping what to highlight and significance of the mapping. As a result at the end of the task I received negative feedback whereas if instructions in details were provided earlier then work would have been smoother. As the period kept moving on I realized that a number of tasks had to be done by my own. Even though my managers were friendly but biggest problem for them was managing time from their tight packed work schedule, thus they could not manage the time to instruct us (me and my colleague intern) in details. Being inexperienced initially, I was getting frustrated and I started adapting the feeling that I may get fired soon because none of my work was adding value to the organization. This was mainly because there was a communication gap between my managers and me. I learnt that superiors will be busy but not busy enough to answer questions.
- **Task delegation:** As the projects were new thus it needed to be researched well and practiced in a number of ways to reach to a common conclusion. As mentioned earlier that my superiors were time strained thus they could not manager enough time to research on the task thoroughly, they often assigned the task to another manager. In this way the task kept on being delegated from one manager to another. As a result at the end of the way the structure of the work produced were poor in the initial stage.

- **Feedback:** A huge number, 200+ of SIMPTWW was done in a matter of 15-17 days. Each day we used to finish 10-20 SIMPTWW which never received feedback. Initially we used to wait for the work to get it checked as we were new in this project we needed to know our mistakes. However, back then we never received feedback and were told to carry on as the work would be checked once after everything is completed. Finally, after completing the SIMPTWW in the first stage we were given a feedback where as expected a number of problems were identified. Even though it was expected yet it was greatly demoralizing.
- **Difference in field of study and field of work:** I was assigned in a department which needed engineering interns not a business graduate. There were very few things that I could relate with my field of study, marketing and finance. Everything as mechanical, technical and electrical based. Even though it was a great experience by working in a diverse field still I think I could have contributed well if my field of study and work matched.

❖ **Overcoming challenges:**

- **Open communication:** I realized I had to speak up regarding my problems. After all questions are always welcomed by everyone unless it is a repetitive question. Thus, practiced the habit of listening intently and thinking from all angles in order to clear my confusions. My superiors started helping us in all ways they could once I started clearing out my problems.
- **Daily and weekly reporting:** When we understood that completion of our assigned task is actually impossible without receiving feedback from our managers, in order to get the feedback we started sitting with the manager of packer and maker team on a daily basis. Maybe checking all the tasks individually was not possible but we tried to show an overall picture of the day's work. Actually we requested them to give us some time on a daily basis to provide us with feedbacks for further improvements so that we can immediately identify our errors and rectify them instead completing the whole project and then getting an overall feedback about our errors because it would just cost time and money and simply delay our project and divert us from the actual objective of the project.

Moreover, at the end of the week we used to go to our line manager with the work and request him to go through the work. Being a detail oriented person he used to give us ideas on how to receive a much clearer picture.

- **Growing eagerness to think out of the box:** It is always a great opportunity to learn things. One of the most important departments is the SMD. Even though it was not a marketing or HR department yet it had enough in store to learn and practically understand. For example, how a team works, what roles are taken by managers, the links between the cycles of product manufacturing and so on.

Perception

Being a multinational company, BATB was expected to have a lot in store. As a leading organization I expected to learn about marketing strategies pursuing which the company has been standing out. I was expecting to get assigned in human resource or supply chain department's marketing team in order to align my theoretical and practical skills. I expected that the job responsibilities of the department, supply chain, required skills that circulated business background. It was out of my knowledge that these fields are mostly ran by engineering people. I expected to have my capabilities shaped more through practical knowledge rather than through observation. Thus my expectations were to work effectively for a number of projects. However, once I got the project I realized that the tasks involved mostly engineering knowledge and fluency in the field. I expected analytical situations where under pressure I will be expected to come up with innovative ideas. But due to the rules of the environment certain expectation was not met. Moreover, I realized that I have been working with the best engineers whereas I was a business student with not the best performance as I was slow and inept for the field I was working. This was demotivating at the start of the internship.

As the internship period went on I realized that even a different field can have a lot in store which can be related with the academic field. Moreover, it is not necessary to have a negative perception regarding a field that is completely different from the field of one's study. For example, whenever I was sent for observation in machines I could observe more than I was assigned. Again, what steps are they taking in order to keep pace with the marketing team, how are the products tailored based on the new branding strategies and others. Moreover as it involved a team working thus it held an opportunity to learn how a team consisting of top level

management and bottom line employees could be managed. Here, it must be mentioned that I could learn less that was relatable to my field but I could learn a lot through observation, all that was needed was being able to relate to knowledge gained from diverse fields.

To summarize, initially I had the perception that I will not be able to learn much that would be useful in my coming professional career. However, as time carried on I learnt that there was actually a lot to learn through observation. Departments may be specialized differently but they all share one thing in common: people management, team work, coordination and ways of task delegation.

Differences

My expectations were that as the managers have assigned me the task thus all the work related to it has been set up for me. But there were a lot of difference between perception and reality.

I had to negotiate with the workers into helping me to set up a structure. I noticed that working with the technicians is quite difficult because it involved high level of negotiation and time. I had to spend a lot of time in managing them before getting the work done. I also experienced that my academic skills were not of much use here as the field of work was different.

Initially I was completely pessimistic that in my future career, I would not be able to implement the knowledge gained from here as it is an engineering department. Nevertheless, at the end of the day when the work was done it did bring up satisfaction. After all it always feels great to having added value to organization.

Chapter 04

Project Analysis

Origin of the Report

The report, titled “Analysis of Total Quality Management in the Secondary Manufacturing Department of British American Tobacco Bangladesh” has been equipped to satisfy the partial requirement of my Internship of BBA Program of BRAC Business School, supervised by Md. Tamzidul Islam, Assistant Professor of BRAC Business School. I have been attached with the Maintenance Team of Secondary Manufacturing Department, Supply Chain Division of British American Tobacco Bangladesh since January 20, 2016 to May 20, 2016 and I have prepared this report in alignment with my assigned responsibilities.

❖ Objectives:

There are two kinds of objectives behind this report. They are:

- a) General objectives
- b) Specific objectives

➤ General Objective:

This report is generally prepared to complete the Internship course (BUS 400), which is required for the successful completion of my BBA (Bachelor of Business Administration) degree.

➤ Specific Objectives:

- To understand the Secondary Manufacturing Process in the supply chain division of British American Tobacco Bangladesh along with giving some recommendation

In addition to that, the report has a few specific objectives that it has tried to uncover:

- ✓ Understand the importance and efficiency of Production Engineering Department as a main production hub to the entire organization
- ✓ Recognize the role of EHS in various projects of Supply Chain Division to ensure workers safety and a viable production planning
- ✓ Explore the implementation of Total Quality Management approach in Secondary Manufacturing Department of Supply Chain division
- ✓ Understand the work policy of British American Tobacco Bangladesh as a leading multinational organization

❖ **Scope:**

- Information for the analysis was collected from the internal websites, database, research papers, & study materials of British American Tobacco Bangladesh (BATB).
- Geographic scope of the report is limited within BATB Dhaka Factory.

❖ **Methodology:**

Methodology refers to the overall procedures of research in my internship report. To achieve the required results to establish the objectives two basic methods were used-

- a) **Qualitative Analysis:** In-depth interview of several managers, factory workers and Vendor supervisors were conducted to get proper insight on SMD, Supply Chain regulations at BATB.
- b) **Observational Analysis:** Observation of the work environment throughout the tenure of my internship at BATB.

❖ **Limitations:**

- Analysis is completely based upon historical data and experience.
- Because of confidentiality regarding information within the organization all necessary data could not be gathered.

Theoretical Knowledge

❖ 5 Whys:

5 Whys is an iterative interrogative procedure used to investigate the cause-and-effect relationships hidden to a specific problem. The prime objective of the method is to decide the underlying driver of a deformity or issue by rehashing the inquiry "Why?" Every question frames the premise of the following inquiry. The "5" in the name derives from an experimental observation on the quantity of repetitions normally required to resolve the issue.

Not all issues have a single root cause. If one wishes to reveal numerous main drivers, the technique must be rehashed soliciting an alternate set of questions every time.

The technique gives no rigid principles about what lines of questions to examine, or to what extent to proceed with the quest for extra main drivers. Therefore, even when the strategy is nearly trailed, the result still relies on the learning and perseverance of the general population included.

- **History:**

The 5 whys approach first got introduced in Toyota. The framework got presented to simplify the issues confronted on a daily basis and to discover the principle hidden reason for the issue confronted to settle it from the root. As per Taiichi Ohno, pioneer of the Toyota Creation Framework in the 1950s, "We come across problems in all sorts of situations in life but, having no problems is the biggest problem of all." Ohno saw a problem not as a negative, but, in fact, as "a kaizen (continuous improvement) opportunity in disguise." At whatever point one sprung up, he urged his staff to investigate issues directly until the underlying drivers were found. "Observe the production floor without previously established inclinations," he used to say. "Ask "why" five times about each matter."

Toyota takes pride in the excellence of both its produced items and its procedures, and the capacity to take care of issues viably has consistently been important to guarantee this quality. Regardless of the possibility that at first the technique seems tedious, distinguishing the main driver of an issue is imperative, since it permits us to take proper countermeasures to avoid

repetition in the long-term. "The root cause of any problem is the key to a lasting solution," Ohno used to say. He always stressed the significance of 'genchi genbutsu', or heading off to the source, and clearing up the issue with one's own eyes. Though information is, obviously, important in manufacturing however the most prominent emphasis is on facts. This simple yet effective 5 whys technique presented by Toyota has now become a key approach to find out the root cause of a problem and ensure lean manufacturing in various production driven national and multinational companies but if wishes it can also be applied to almost any problem we might be having at work or in our daily life.

- **Example:**

The IPS (Instant Power System) is not working properly.

Why? - Electrical appliances connected with the IPS are malfunctioning. (First why)

Why? - The wiring of IPS is defective. (Second why)

Why? – The battery is dead. (Third why)

Why? – IPS has been used beyond its functional capacity and has not been lubricated properly. (Fourth why)

Why? - The IPS was not maintained according to the recommended service schedule. (Fifth why, a root cause)

It is fascinating to note that the last answer focuses to a procedure. This is one of the greatest crucial traits of the 5 Whys approach - the genuine root cause ought to indicate to a procedure that is not functioning admirably or simply does not exist. Untrained facilitators will habitually observe that answers appear to point towards established answers, for example, insufficient time, insufficient investments, or insufficient labor. These answers might be valid; however they are out of our control. Hence, rather than inquiring the question Why? Inquire as to why did the procedure fail? A key phrase to keep in mind in any 5 Whys exercise is "people do not fail, processes do".

- **How do the 5 Whys process works:**

There is a five steps procedure to perform the 5 Whys approach in business, these are as follows:

- Invite anyone affected by the issue”:** When the problem or circumstance is recognized (and all close concerns are dealt with), welcome anybody at all on the group who was influenced or discerned the issue to be included in a 5 whys meeting.
- Select a 5 Whys master for the meeting:** The 5 Whys expert will lead the discourse, ask the 5 whys and allocate obligation for the solution of the problem the team come up with. Whoever remains in the group will answer those inquiries and talk about. Anybody can be a 5 Whys expert—there are no distinctive required skills and it doesn't need to be the pioneer of the plan or the originator of the issue.
- Ask “why” 5 times:** Go not less than 5 levels profound into the problem with 5 levels of "whys." This appears the easiest part, however in reality can be a difficult one. Getting the right question to begin with, the first why, is so far the most essential strategic decision to take.
- Assign responsibility for solutions:** Toward the end of the activity, critically analyze every why question and think of 5 related "remedial activities" that all team members will concede on. The expert assigns duty on different members in the conversation to come up with the corrective measure.
- Email the whole team the results:** After every 5 Whys process, somebody involved in the meeting will record what was discussed and decided in the simplest language as possible and as the most vital phase of the entire procedure—email the full group with the outcomes.

- **Hindrances to detect the ACTUAL cause:**

There are two rules when using the 5 Whys:

- a) Be tolerant of all mistakes the first time.
- b) Never allow the same mistake to be made twice.

In the book, *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*, Eric Ries has clarified the main guideline which urges us to get used to being considerate about committing errors, because errors are unavoidable and it's the tool through which we learn. The second rule inspires us to do rational investment in counteractive action. As the true fact is once a mistake, twice is a choice.

Only if we can build up a precise comprehension of the underlying causes of our hindrances, we would be able to start bringing rational transformations. So, rather than putting a Band-Aid on issues, we can properly utilize the 5 Whys approach disclosed above to recognize the root cause of any problem we might be having. After that, find a solution to the problem and that's how we will be able to prevent the problem from recurring—and potentially getting worse and more convoluted—in the future.

❖ **Lean Manufacturing:**

The core idea is to boost client's esteem while minimizing waste. Merely, lean implies making more esteem for clients with fewer assets.

A lean association comprehends client esteem and centers its key procedures to constantly expand it. A definite objective is to give perfect value to the client through a flawless quality creation that has zero waste.

To perform this, lean thinking changes the focus of administration from enhancing separate innovative technologies, resources, and vertical offices to upgrade the stream of items and administrations through whole value streams that moves horizontally across advancements, resources, and offices to clients.

Disposing of waste along whole value chain, rather than at segregated focuses, makes forms that need less human exertion, less space, less capital, and less time to make items and administrations at far less expenses and with less defects as a contrast to the conventional business frameworks. Organizations can react to changing client wishes with high assortment, high quality and low cost. Additionally, data administration turns out to be much less complex and more exact.

❖ **Total Quality Management:**

The 7 Quality Control Instruments are simple measurable tools utilized for critical thinking. These tools were either created in Japan or presented to Japan by the Quality Masters, for example, Deming and Juran. These are the most significant and a helpful device to measure the quality of an organization's manufacturing processes. Kaoru Ishikawa has expressed that these 7 instruments can be utilized to take care of 95 percent of all issues. These instruments have been the basis of Japan's astonishing mechanical rebirth after the Second World War.

For resolving quality issues seven Quality Control tools utilized are Flow Charts, Ishikawa Diagrams, Check Sheets, Pareto Diagrams, Histograms, Scatter Diagrams and Control Charts. These instruments are critical tools used broadly at industrial arena to screen the overall operation and constant procedural change. These instruments are utilized to discover underlying drivers and to exclude them accordingly so that production procedure can be made advanced. The methods of flaws in the manufacturing process are examined through direct perception on the manufacturing process and measurable devices.

1. Flow Chart:

A Flow Chart demonstrates the progressions in a procedure where the viewer can simply get an idea regarding the start point of a process, its growth, value creation steps and finally the ultimate end result. This is an important help in examining a procedure yet it must represent the genuine process developed instead of what the procedure administrator considers it is or needs it to be. The distinctions between the real and the proposed procedure are often astounding and give numerous thoughts for enhancements.

Benefits of Using Flowcharts:

- Promote process understanding
- Provide device for preparing
- Identify problematic areas and growth opportunities

"Draw a flowchart for whatever you do. Until you do, you do not know what you are doing, you just have a job."

-- Dr. W. Edwards Deming.

2. Ishikawa Diagrams

Ishikawa charts are named after their innovator, Kaoru Ishikawa. They are additionally called fishbone outlines, after their appearance, or cause and effect diagram after their capacity. A cause and effect diagram is an instrument that shows efficient relationship between an outcome or an indicator or an impact and its conceivable causes. It is a successful device to deliberately produce thoughts regarding reasons for problems and to exhibit these in an organized structure.

Benefits of Using a Cause-and-Effect Diagram:

- Helps decide main drivers
- Encourages team involvements
- Uses an organized, simple to-peruse layout
- Indicates conceivable reasons for variety
- Increases process information
- Identifies ranges for gathering information

3. Check Sheets

Check sheets are devices for gathering information. They are planned particular to the sort of information to be gathered. Check sheets help in deliberate accumulation of information. A few samples of check sheets are daily maintenance check sheets, participation records, production log books, and so forth.

Information gathered through check sheets should be evocatively characterized. Such characterization helps picking up an introductory indulgence of pertinence and scattering of the information so that further investigation can be done to acquire a significant yield. Expressive characterization of information is called stratification. Stratification can be done by group, area, category, cause, indicator and so forth.

Benefits of Check Sheets:

- Record data for further analysis

- Provide historical record
- Introduce data collections methods

4. Pareto Diagram

Pareto Diagram is an instrument that organizes things in the amount of the size of their influence, in this manner it recognizes a couple of things that has the greatest impact. This device is utilized as a part of SPC and quality enhancements for ordering ventures for development, arranging set up of remedial activity groups to take care of issues, distinguishing items on which most objections are gotten, classifying the way of complaints happening regularly, recognizing most common reasons for dismissals or for other related purposes.

The source of the instrument lies in the perception by an Italian Economist Vilfredo Pareto who noticed that a couple individuals controlled the greater part of a country's treasure. He observed that such distribution pattern was common in most fields. Pareto principle also known as the 80/20 rule is used in the field of materials management for ABC analysis. "Pareto's Law" has also been connected to numerous different arenas, including deformities, where an insufficient number of causes are in charge of the greater part of the issues. Isolating the "essential few" from the "insignificant numerous" should be possible utilizing an outline known as a Pareto graph.

Benefits of Pareto Chart:

- Breaks enormous issues into minor parts
- Identifies most critical variables
- Shows where to center endeavors
- Allows better utilization of inadequate assets

5. Histogram

Histograms or Frequency Distribution Diagrams are bar graphs demonstrating the dissemination pattern of perceptions gathered in suitable class interims and organized as per the frequency of occurrences. Histograms are helpful in analyzing the forms of dispersion and in making inferences about the procedure based on the pattern.

Benefits of Histogram:

- Summarize substantial information sets graphically
- Compare estimations to determinations
- Communicate data to the group
- Assist in drawing conclusions

6. Scatter diagram

At the point when resolving an issue or examining a circumstance one needs to know the relationship between two variables scatter diagram can be used as an effective tool. A relationship could conceivably exist between two variables. In the event that a relationship exists, it might be positive or negative; it might be strong or weak and might be straightforward or complex.

Benefit of Scatter Diagram:

- Scatter Diagrams are utilized to examine and recognize the probable relationship between the deviations detected in two distinctive arrangements of variables.

7. Control Charts

Control charts are the most complex of the seven essential devices of Total Quality Management, yet dependent on basic philosophies. The diagrams are made by plotting in succession the deliberate estimations of tests taken from a procedure. For instance, the mean length of a sample of rods from a construction line, the number of deformities in the sample of an item, the miles per gallon of autos tested consecutively in a model year, and so on. These estimations are anticipated to differ haphazardly about some mean with a known fluctuation. From the mean and fluctuation, control parameters can be set up. Control boundaries are values that sample estimations are not anticipated surpassing unless some unique cause changes the procedure. A sample estimation outside the control limit shows that the procedure is no more constant and is usually reason for remedial activity. Further reasons for restorative activity are non-arbitrary conduct of the estimations within the control limit. Control parameters are set up by factual techniques relying upon whether the estimations are of a parameter, trait or rate.

Benefits of Control Chart:

- Monitor process variety after some time
- Differentiate between uncommon cause and regular cause variety
- Assess efficiency of changes
- Communicate process performance

Above seven basic quality tools help to address different concerns in an organization. Therefore, use of such tools should be a basic practice in the organization in order to enhance the efficiency. Trainings on these tools should be included in the organizational orientation program, so all the staff members get to learn these basic tools.

Practical Implementation

❖ 5Y Process in BATB:

5Y process is basically used to do the root cause analysis of a problem. The process hints that to determine the underlying main reason fueling behind a problem we need to ask the ‘WHY’ 5 times to get to the root. British American Tobacco is also not an exceptional one in this regard. In SMD the maintenance and electrical team also repeat the question ‘Why’ 5 times to identify the origin of the issue. A simple example of that 5Y process followed by BATB is given below:

Cigarette Hopper Area is not working properly:

1st Why: Inexperience workers handling that area.

2nd Why: Loosen electrical sensor in that area.

3rd Why: Improper defect identification during preventive maintenance.

4th Why: Incompetency to recognize the Critical Spare Parts Replacement Alarm.

5th Why: Failure to comply with the machine’s regular maintenance manual.

This is just a simple example of 5Y process maintained by the organization. But in most of the cases the situation get further complicated to determine the root cause and in those circumstances

to get to the core issues the maintenance team has to ask the question Why 5 times, 7 times or even more. In that case the process is recognized as “YY” in British American Tobacco Bangladesh.

❖ **Lean Manufacturing in BATB:**

To make the production process more efficient there is no other alternative rather following the process of lean manufacturing. Lean focuses on creating more value for the customers while minimizing the waste. British American Tobacco Bangladesh is currently running to projects to minimize wastage level. The 1st one is Wrapping Material Waste reduction and the 2nd one is Tobacco utilization assessment.

- **Wrapping Material Waste Reduction:**

To wrap on the cigarette packets different types of wrapping material are being used like- Blank, Slide, Stamp, Inner Frame, Foil, Inner Wrapper (BOPP), Outer Wrapper, Tear of ribbon, glue etc. And it is often seen that a huge waste occurs in wrapping materials. From my personal observation I have seen that the machine operators are not at all conscious on making the best efficient use of those wrapping materials. It is often seen that the machine operators changes the pallet of wrapping materials while it still can be used to wrap out more packets. But sometimes, it becomes necessary to change on the pallets as some pallets are identified with having quality problems. All these issues cause huge loss for the organization. For an example, the company needs to be more efficient in terms of using cigarette tax stamp. As tax stamp comes from the government of People’s Republic of Bangladesh there is a rule by the government that the wastage rate of tax stamp should be less than 1% otherwise the company will have to incur additional charges. So, in this regard to minimize the wastage of wrapping material BATB has now started keeping detailed data of its uses of wrapping materials to determine the wastage rate in terms of quantity and monetary value. A sample Wrapping Material Wastage analysis report for the month December, 2015 is given below:

TaO Material Description	Standard Wastage (%)	Actual Wastage (%)	Perfect Usage Qty	Scrap Factor	Actual usage Qty	Perfect Usage Value	Actual Usage Value	Usage Variance (BDT)
Total Tow Wastage	1.00%	0.38%	160,337	1.00%	160,945	83,159,655.20	83,474,847	315,192
Total Triacetine Wastage	8.00%	11.00%	14,751	8.00%	16,575	2,231,011.24	2,506,868	275,857
Total Plugwrap Wastage	3.00%	-10.48%	5,629	3.00%	5,050	7,745,504	7,010,819	(734,684)
Total Adhesive Wastage	2.00%	0.53%	29,141	2.00%	29,396	6,869,031	6,905,840	36,809
Total BOPP Wastage	1.30%	20.60%	5,553	1.30%	5,986	15,160,130.90	19,093,010	3,932,879
Total Blanks Wastage	1.10%	0.53%	118,455	1.10%	119,578	83,351,779	83,792,688	440,909
Importe Filter rod	2.00%	0.00%	-	1.10%	-	-	-	-
Total CBC Wastage	0.40%	0.34%	156,771	0.40%	157,294	5,973,545	5,993,658	20,113
Total CP Wastage	3.00%	2.91%	15,862	3.00%	16,338	25,003,894.50	25,754,011	750,117
Total CTP Wastage	3.00%	2.91%	6,106	3.00%	6,289	17,507,772.62	18,033,006	525,233
Total FOIL Wastage	1.40%	1.38%	10,244	1.40%	10,387	22,159,140.18	22,469,368	310,228
Total IFB Wastage	1.40%	1.38%	3,634	1.40%	3,685	8,889,938.14	9,014,397	124,459
Total Ink Die Wastage	3.00%	2.91%	85	3.00%	87	1,362,038.47	1,402,900	40,861
Total Flavour Wastage	30.00%	23.08%	44	30.00%	57	616,582.04	801,557	184,975
Total Tape Wastage	1.00%	0.99%	5,526	1.00%	5,582	210,357.18	212,461	2,104
Total Tear off Ribbon Wastage	2.00%	1.96%	367	2.00%	375	216,983	221,323	4,340
Total Sticker Wastage	0.00%	0.00%	6	0.00%	6	5,019.71	5,020	-

Figure 05: Analysis of Wrapping Material Waste for the month December, 2015

The above given figure shows a analysis between standard wastage percentage and actual waste percentage, perfect usage quantity and actual usage quantity, perfect usage value and actual usage value and finally the usage variance in BDT. From this chart easily an idea can be generated how much in terms of monetary value the company in losing each month on an average due to wastage. And to fight against this wastage company is now planning for machine modifications and trying to develop a sense of lean among its root level machine workers to have the best possible outcome.

- **Tobacco Utilization Assessment:**

Through this project the company tries to minimize the wastage of tobaccos. There is a standard rule followed in the company which shows how many cigarette filters should made of using a tray of tobaccos. But in reality if the tobacco consumption goes up or down, not complying with the standard it indicates that there is a quality issue either for less consumption or for wastage of tobaccos.

❖ Total Quality Management in BATB:

1. Flow Chart:

Production Engineering Department's Maintenance division is basically responsible for all sort of maintenance related servicing of the machines. But to conduct the maintenance the first thing needed to do is to identify the problems occurred in the machine and letting it know to the respective authority. Here, one thing to be mentioned that BATB has 23 modules and all these modules are divided in 4 different cells. Each cell consists of 7 members- 1 cell manger, 2 team leaders and 4 shifts managers. So, it becomes the responsibility of each team leaders and shift managers to inform their respective cell managers about the problem machines under their cells are facing. Then the cell manager will directly contact with the Maintenance coordinator. After that the maintenance coordinator will discuss the issue with the coordinators of both maker and packer team and divide the responsibility upon them to assign the task to their team's maintenance technicians who will practically perform the maintenance task. Moreover, it is also the responsibility of the coordinator of maker and packer team to contact with the R&RS department to confirm the availability of the spare parts necessary for the maintenance purpose. Then the maintenance team will select a date based on their pre-planned Preventive Maintenance schedule to attend the issue. Later on the maintenance team will also keep an information file where the last critical spare parts replacement hour will be updated, which will eventually help the department to get an alarm about after how many hours they need to go for next maintenance for that particular module. This data will also help the department to plan the Preventive Maintenance Schedule for a whole year. This is the overall process of identifying a problem and solving it with proper maintenance. The flow chat of the whole process described above is given below.

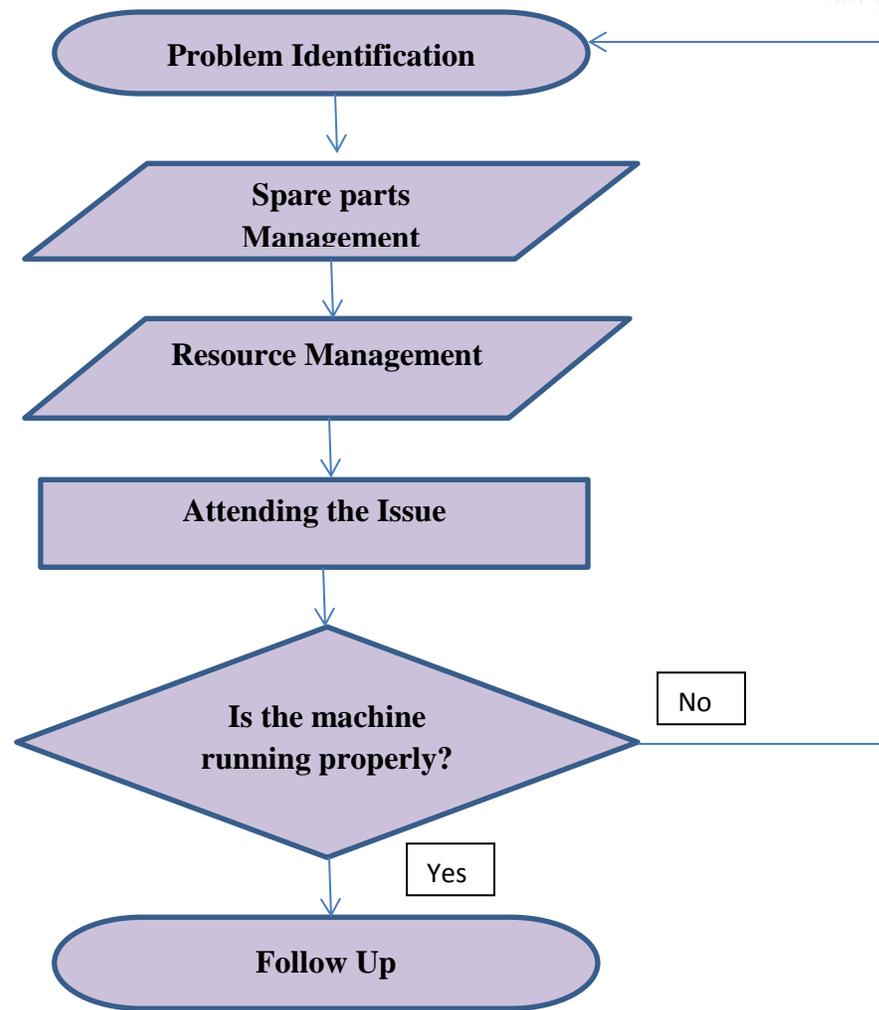


Figure 06: Flow Chart

2. Ishikawa Diagrams:

Here, the underlying causes of machine breakdown and its probable effects will be highlighted. From my analysis of the situation some of the major reasons of machines breakdown are spare parts failure, poor CIL (cleaning, inspection and lubrication), CSRP failure, electrical problem, ignoring warning alarm, irresponsible personnel operating the machine etc. These causes also do have some further sub-causes which are shown in the figure below. As Secondary Manufacturing Department is the main production hub of the final product so if due to any reason machine breakdowns production get delayed or stopped and thus bound the entire company to suffer for it.

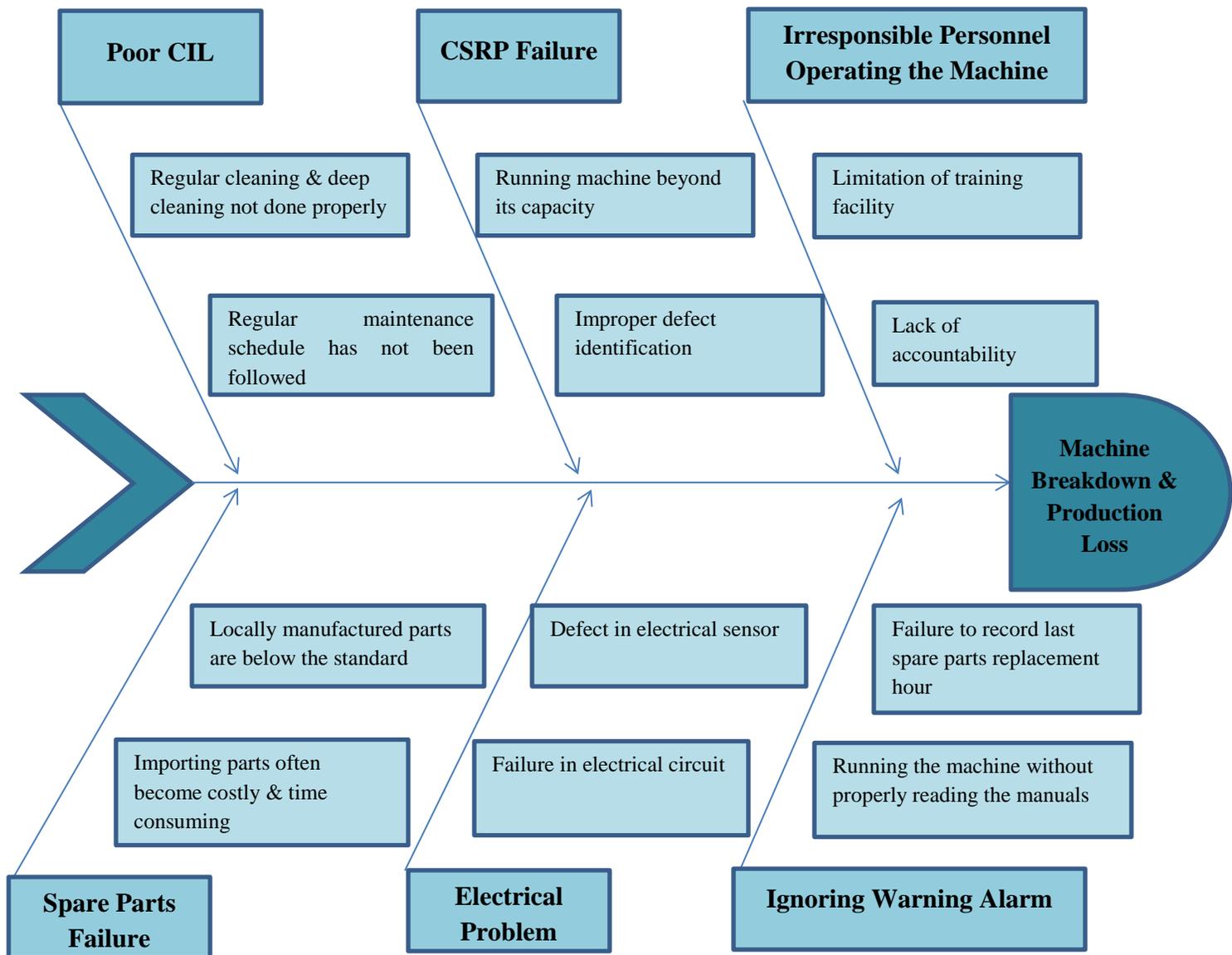


Figure 07: Cause and Effect Diagram

3. Check Sheets:

Check sheets is a very important tool used for information gathering. Using the check sheets numerous number of necessary information can be collected and presented in a concise manner which can easily grab the attention of the information seeker and also helps them in understanding the whole issue at a glance. There are several types of check sheets maintained by

organizations as per their requirement. But in this case the SMD department of Supply Chain in BATB maintains two types of check sheets- Maintenance cleaning Check sheets and Maintenance CSRP Check Sheets. A simple sample of those check sheets are given below:

Maintenance Cleaning Check Sheet

Maintenance Cleaning - VE

[Back To Title](#)

SL No	Component	Operations	MTC	Contractors	Existing (Yes/No)
			✓	Activity Stays as is	
			Ashraf Tools	Activity of Asraf Tools	
			Nero Engg.	Activity of Nero Engg.	
			+	Suggested New Activity	
1	Tobacco Reservoir Unit	Press Kluber grease into the grease nipples on the pivot bearing	+		No
2	Steep Angle Conveyor	check that all combs are present in the steep-angle conveyor and that they are positioned at the correct angle to the belt. Replace combs if necessary	+		No
3	Steep Angle Conveyor, Conveyor Worm, Star Wheel Roller	Check all toothed belts and V-belts for wear, replace as necessary	+		No
4	Fluidized Bed	Remove the air-jet rails and use suction air to clean out the hollow space, Clean the primary & secondary separator air jet rail with suction air and compressed air, Clean feeder side panels	+		No

Figure 08: Maintenance Cleaning Check Sheet

From the above shown maintenance cleaning check sheet it can be analyzed that the 1st column shows the serial number, the 2nd column describes the specific component name where cleaning process is required or in other words it helps to identify in which part of the machine cleaning need to be done. The 3rd column shows what type of cleaning operations to be carried out. The 4th column MTC (Maintenance cleaning) shows for that particular component do we need suggestions to add on new activity or the current status or the currently ongoing process to clean

up the machine is enough and nothing more is to add on. The 5th column contractors will indicate for that particular cleaning purpose which contractor to be contacted. Here, it is to be mentioned that for the cleaning purpose BATB depends solely on contractual employees and they do have a contractual a contractual agreement sign up with four different contractors. For our given sample here on two contractors Ashraf tools or Nero engineering will be considered. Finally, the 6th column indicates are the newly suggested maintenance cleaning activity is existent for that particular module or not. The YES indicates to the existence of that newly suggested activity in that particular module and a NO indicates that new activities or facilities should be add on for the cleaning purpose in that module.

Maintenance CSRP Check Sheets					
Preventive Spares Replacement Plan - VE					
Back To Title					
			√	Activity Stays as is	
			↑	Frequency Increased	
			↓	Frequency Decreased	
			+	Suggested New Activity	
SL No	Component	Operations	CSRP	Hours (Months)	Existing (Yes/No)
1	Steep Angle Conveyor, conveyor worm, star wheel roller Belt Replace	Replace all toothed belts and V-belts for wear, replace as necessary	√	5820 Hours (12 Months)	Yes
2	Spreader Roller Pins Replace	Check the pins. Remove stem Deposits. Replace broken pins	+	7596 Hours (18 Months)	No
3	Needle Roller (Carded Drum Staves) Check. Replace Bearings	Check the needle plates. Remove stem deposits. Replace broken pins	√	7596 Hours (18 Months)	Yes
4	Picker Roller Pins Replace	Check the pins. Remove stem Deposits. Replace broken pins	↑	7596 Hours (18 Months)	Yes
5	Air Circulation Fan (LP Fan)	Check all the belts, impeller, casing & bearing. Replace as necessary	√	5820 Hours (12 Months)	Yes

Figure 09: Maintenance CSRP Check Sheet

Here, also the 1st three columns indicate to the same information as described in the maintenance cleaning check sheet. But the 4th column shows on the currently ongoing CSRP activity is enough for that particular component or not. If the current CSRP is OK the column will show a (√) sign, if anything extra need to be add on a (+) sign will be shown up. Moreover, (↑) indicates that frequency of CSRP required for that particular component has gone up. On the other hand (↓) indicates the vice versa. The 5th column Hours (Months) shows up after how many hours or months next CSRP will be taken for that particular component. Finally, the 6th column shows up the same information as mentioned in the description of maintenance cleaning check sheets.

4. Pareto Diagram:

The main rule of Pareto diagram is that though an organization goes through several different types of problems but in majority of the cases we often fail to identify the main root cause of the problem we are facing. If we analyze the situation in a more better way we will get to see that normally the main root cause contribute to a problem is limited to a few numbers will the thousand other issues which we consider as a problem is not an issue at all rather the symptoms of the main root problem. So, as be the principal of Pareto 80% of our problems can easily be sorted out by solving only 20% of it as this 20% indicates the root cause of the problem and by solving so other symptoms can also be eliminated. A sample Pareto Diagram of a module's breakdown analysis is given below:

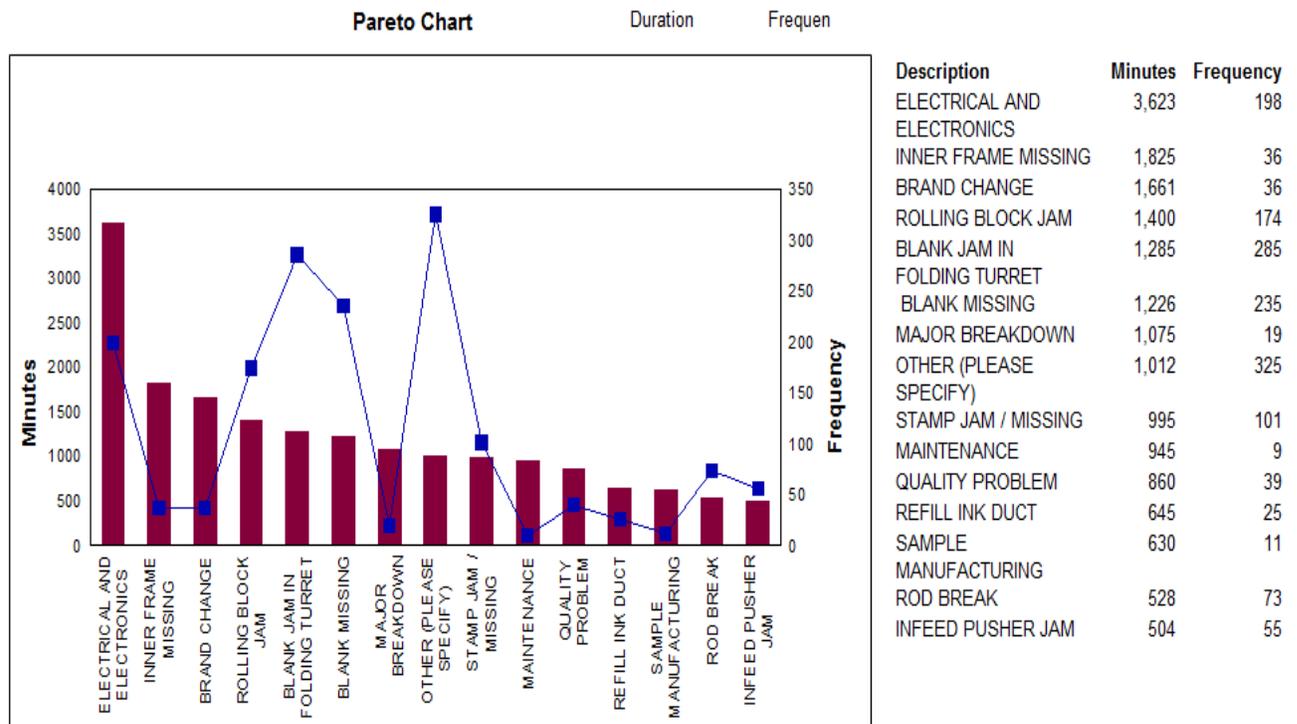


Figure 10: Pareto Diagram

One thing here to cleared out the SMD has two parts one is mechanical and the other one is electrical. So, from our above sample it can easily be understood that among all those factors contributing to the breakdown of a machine if we simply focus on solving the key 20% issues in our case the that means the 1st 3 problem the rest 80% issue will also get eliminated as all those problems are occurring as a symptoms of that key major issues.

5. Histogram:

In the histogram analysis of the efficiency of maintenance team in term of completing the pre assigned CSRP jobs on the scheduled date will be done. In this given example, I have tried to analyze the work efficiency of maintenance department for the entire year 2015.

Months	CSRP Job Completion Rate (%)
January-February	98
February-March	95
March-April	88
April-May	96
May-June	78
June-July	100
July-August	100
August-September	94
September-October	100
October-November	88
November-December	97

Table 03: Month wise CSRP Job Completion Rate

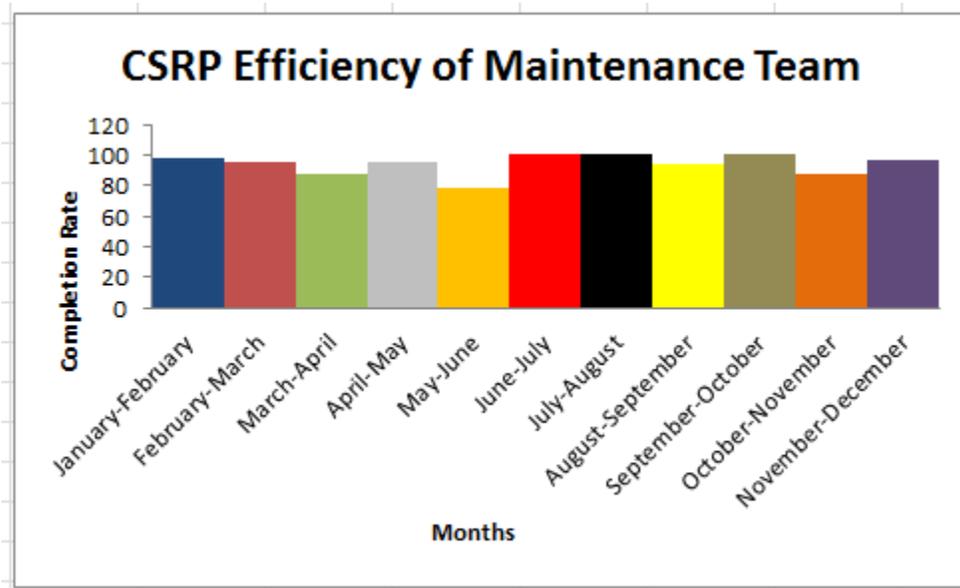


Figure 11: CSRP Efficiency of Maintenance Team (Histogram)

From the above chart it is clearly seen that in most cases the maintenance department failed to achieve the 100% CSRP completion rate as per the planning. The underlying reason behind this

incompetency can be unavailability of necessary resources such as spare parts, maintenance technicians etc. From my personal observation I have seen in most cases the maintenance team fails to achieve its success due to the shortages of spare parts in R&RS stores. Though BATB depends on locally manufactured spare resources and local technicians but to some extent it needs to rely on imported spare parts and overseas technicians for quality which sometimes delay the process. For example, right now BATB is changing a module to produce 10's packet of cigarette rather than previously made 20's packet. And to do the conversion BATB is largely dependent on the technicians coming from overseas as local technicians are not experienced enough to serve the purpose. But as the company has less control on technicians coming from abroad the process is getting delayed to some extent causing loss of production for the company.

6. Control Charts (PM Card):

Rather than following a control chart format BATB uses its own Preventive maintenance chart. Preventive maintenance chart also serves the same purpose like control chart. It is basically a chart where the monthly maintenance schedule of all modules in Dhaka factory get planned based on the availability of resources such as spare parts and technicians. The company tries to solve the entire mechanical and electrical problem occurring in the machine in the day of scheduled preventive maintenance to lower down the rate of machines unplanned breakdown. And if the maintenance department sees that after their preventive maintenance the unplanned breakdown rate for that particular module has gone down then it means the whole situation is within their control limit. But even after carrying out the preventive maintenance if machine break downs frequently that means the situation is out of control and it's high time to take some quality prevention measures to solve out the problem of poor production for that particular module. A sample PM Card is shown below:

Chapter 05

Recommendations

And

Conclusion

Areas to Improve

- **Coordination with R&RS Department:**

From my personal observation I have seen that in many cases the maintenance process get delayed due to unavailability of spare parts in the R&RS department. That means here still prevail a lack of proper and on time communication between the two departments SMD & R&RS but these two departments are supposed to complement each other. The case gets often worse when R&RS get stuck with some spare parts which are no longer in use for the machines. The list of necessary spare parts gets updated by the SMD department and then sends to R&RS for the requisition. Here, one thing to add on that it is the maintenance technicians who update the files. So, as an obvious thing as they remain so tired after day long maintenance it took some extra time for them to refresh themselves and then concentrate on that hectic and time consuming job. After that R&RS again analyze the actual situation and place purchase order. So, to make the overall process more effective and less time consuming both the departments can work together by sharing their responsibilities from the very beginning.

- **Bridge the GAP between Management and Workers:**

The most discrepancy I have seen working over there to some extent there prevails a communication gap between the management level and worker level in the SMD department for some projects. For example, the project which I was handling is about making the machine maintenance manuals for CSRP job. The project is quite important as will help the organization to move on to autonomous maintenance from preventive one and that manual are objectified to help on the maintenance technicians. But as far the technicians our project was and valueless. That took as it would not come in any further use and were highly reluctant to provide us with the necessary information. But instead if the management committee bothered enough to make those workers understand how important the project is for the organization and for them also then the situation had been far more better and work friendly. So, I strongly believe that the management level should take this issue in their important consideration.

- **Maximize Customers' Value → Minimize Waste to Zero:**

The company goes through millions taka losses each day in terms of defective or low quality tobacco filter and cigarette production. BATB is highly conscious about the quality of its each product delivered to final customers. So, whenever the quality department sees any quality issues in cigarettes they simply reject those cartoons of cigarettes out. Moreover, one thing to add on is the quality department goes for checking in the final stage when the product gets packed for final delivery. So, rather than following this process if quality department simply check on the quality of the products while production process is going on and give immediate feedbacks for improvement the company can minimize millions taka losses each day thus adding more value to the parent company.

- **Change in Mentality:**

Finally to minimize the loss of cigarette wrapping material, filter tows and most important to emphasis on the proper and careful handling of cigarette production machines the company should focus more on employee training and work on to improve their motivation level. In that case BATB can go for special commission facility, as it do for workers being able to come up with highest productions in terms of numbers, for those maintenance workers and machine operators who can run their module with less number of unplanned breakdowns and can make most effective use their cigarette wrapping materials and filter tows.

- **Aiming to Skill Development:**

During my work tenure in BATB I have seen that though the maintenance team tries to successfully maintain and update the CSRP alarm file, in most cases even after getting the alarm they fail to take the job in their CSRP activity. The main fact contributing behind this situation is lack of skilled works. For instance, for a month the department has got 100 CSRP job alarms but due to lack of skilled technicians the maintenance team prioritizes their job and tries to complete 78 alarmed jobs. That clearly indicates that the left 22 CSRP jobs bounds to run the machine beyond its capacity without the much needed maintenance and hence contributing to low quality, less volume production and fueling the chances to have a major breakdown in the machine for future. So, if BATB can successfully implement workers skill development training program in a much interactive way, in that case workers will at least be skilled enough to identify the exact

problem of the machine. To be more specified will get to the root cause within the shortest possible time. It is true that by doing so all workers or machine operators will not be trained enough to directly help the maintenance team in the day of maintenance but indirectly they will be able to assist the maintenance team in finding out the root cause of the problem in the shortest possible time thus enhancing the time efficiency of the maintenance technicians team and the possibility to take on more CSRP job for completion on a monthly basis.

Conclusion

Secondary manufacturing department of Supply Chain is one of the most crucial departments for BATB as an organization. This thing again gets proved from the annual budget allocation as this department has the 2nd highest budget amount allocated for this operational year. Thorough out this entire report I have tried to analyze the different aspect for the following department, its work effectiveness, efficiency level and the implementation and adherence to total quality management theory. From the analysis I have found out how efficient the production process is in BATB as a multinational organization and few areas where the company can work on to be more efficient. Though BATB faces some sort of discrepancies in its production process due to unplanned machine breakdown and some other waste related issues, still the company can proclaim itself as a successful production hub as information says that the Dhaka factory of British American Tobacco had the third highest amount of cigarette production among all production hubs operating throughout the world after Japan and Russia in the last year. Moreover, the Dhaka factory of BATB is efficient to produce 1.6 million cigarettes per day. But still BATB has a long way to go because it should always remember the fact that being perfect of improving efficiency should always be a never ending journey rather than a destination. So, British American Tobacco Bangladesh should dream big to proclaim itself as the highest production hub adding more and more value to its parent company British American Tobacco and throughout this whole journey following the process of 'Kaizen' is a must to be successful.

Chapter 06

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