"EFFECTIVENESS OF TQM IN HLL Lifecare Ltd. PEROORKADA PLANT, THIRUVANANATHAPURAM"

Project Report

Submitted to the University of Kerala in partial fulfillment of the requirement for the award of

Master of Business Administration

Submitted by

ARJUN RAJEEV WARRIOR

Register Number: 59514460005

Under the Guidance of

Mr. Amal Manilal

Assistant Professor, DCSMAT

DC SCHOOL OF MANAGEMENT AND TECHNOLOGY

KINFRA Film and Video Park, Sainik School P.O, Kazhakoottam, Trivandrum - 695585

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2016

Company certificate

College Certificate

DECLARATION

I hereby declare that the project report titled **"EFFECTIVENESS OF TOTAL QUALITY MANAGEMENT OF HLL PEROORKADA PLANT, THIRUVANANTHAPURAM"** submitted by me to the University of Kerala is based on the project work undertaken by me, under the guidance of **Mr. Amal Manilal** and it is not submitted to any other University or Institution for the award of any degree, diploma, certificate or title earlier.

Place: Trivandrum

Date:

ARJUN RAJEEV WARRIOR

Reg. No. 59514460005

IV Semester MBA

ACKNOWLEDGEMENT

I express my sincere thanks to one and all that helped for the successful completion of my project work. First and foremost, I praise and thank **God Almighty** form the depth of my heart, which has been the source of strength in the completion of the project work.

I would like to express my sincere gratitude to the **HLL Management Academy at Kowdiar** as well as the **management of HLL Peroorkada Plant** for allowing me to conduct the project in their esteemed organization. I would like to acknowledge my gratitude to **Mr.Venugopal S, Deputy General Manager (P, S&E)** for the guidance and useful help in completing this project. I am deeply obliged to all the employees of HLL for their cooperation, support and help in my endeavor. My special thanks to one and all in the production and quality control department for their valuable support and suggestions.

I sincerely thank and record my gratitude to my **faculty guide Mr. Amal Manilal** for his enthusiasm and interest as well as our **director Dr. S Narayanen Nair of DC School of Management and Technology, Trivandrum** for guiding me through the project, offering valuable suggestions, encouragement and providing a wonderful opportunity for learning.

EXECUTIVE SUMMARY

This report is a problem-oriented study conducted in HLL Life care Ltd for a period of 45 days. As the name implies HLL Life Care Ltd produces Life Care products. Their main product is a condom. The corporate office of HLL Life Care Ltd is situated in Poojapura, Trivandrum. This study is conducted in their first plant, which is situated in Peroorkada Plant, Trivandrum.

The identified area in this organization is the relationship between the various factors associated to the quality management system from the perspective of the employees. Thus the report is titled as "A Study on effectiveness of Total Quality Management of the HLL, Peroorkada Plant from the perspective of the employees". There is 1 primary and 3 secondary objective behind the study. The main objective is to determine the effectiveness of total quality management in HLL, Peroorkada Plant from the perspective of the employees working in the organization. For this study a sample of 60 employees were taken from a population of 600 employees through questionnaire and schedule. Statistical tools used for the study is mainly Chi-Square test, charts and percentage analysis.

From the analysis of the reports it is concluded that the effectives of various factors associated to the quality management from the angle of the employees is appreciable to some extent thus has room for further improvement in the organization. The possible suggestion for further improvements is mentioned towards the end of the report.

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RESEARCH METHODOLOGY

RESEARCH DESIGN

In this study, the researcher has used descriptive design as well as hypothesis for studying the effectiveness of Quality Management of HLL, Peroorkada Plant. This research design focuses attention on the following:

a) Formulation of the objectives
b) Identification of the methods of data collection
c) Selecting a valid sample using suitable sampling technique
d) Collection of data by using a reliable instrument
e) Analysis and Interpretation of the data
f) Preparation of a detailed report

SOURCES OF DATA

The sources of the project were collected through two main sources namely primary and secondary sources.

PRIMARY DATA –

Questionnaire Method – Primary data was collected through a non-distinguish structured questionnaire. Questionnaires were issued to the employees for acquiring the data. With the help of questionnaire it was easy to determine the preference, attitude and satisfaction level of the employees that were working in HLL.

SECONDARY DATA –

The following were the secondary methods used for data collection which are as follows –

a) Company Corporate Family Magazine
b) Company Magazines & Section Journals
c) Internet
d) Discussions and Personal Interaction with employees

PICTORIAL REPRESENTATION –

The pictorial representation was made mainly by Histogram during the data analysis of the project. The main factors relating to Total Quality Management focusing on Quality System identified are – a) Increase Quality Awareness, b) Employee Effectiveness, c) Labor Turnover, d) Improve team work, e) Reduction in Rejection/Defect Levels from which the same factors were incorporated in the questionnaire. From the above factors five variables have been identified in the study and two have been used for analysis.

SAMPLE DESIGN

A sample design is a definite plan for obtaining a sample from a given population. It refers to the technique or the procedure the researcher would adopt in selecting items for the sample. Sample design has to be determined before the data collection.

POPULATION OF STUDY

600 employees of HLL Peroorkada Plant, Thiruvananthapuram

SAMPLING SIZE

The sample size collected for the study is 60

SAMPLING TECHNIQUE

The sampling technique adopted for selecting the representative units is Simple Random Sampling

SAMPLE FRAME –

Sl.No	Population	Sample Size	Department			Category
1	600	60	Production			4
2			Electronic Testing Department			7
3			Packaging			4
4			Quality			7
5			Material Testing and Research & Development			6
6			Finance			4
7			Human Resource			4
8			Engineering	Utility	2	9
				Mechanical	2	
				Electrical	2	
				Instrumentation	3	
9			Safety			2
10			Purchase			3
11			Sales			3
12			Stores			5
13			Others			2

PERIOD OF STUDY The period of study was 45 days i.e. from 17.05.2016 to 01.07.2016

LIMITATIONS OF STUDY

- The subject of "Effectiveness of Total Quality Management" is quite vast and to do justice to the subject, much more time will be needed.
- Notwithstanding the above limitation, a sincere effort has been made to obtain and observe as much information and knowledge as was possible. This has been achieving by undertaking detailed discussions with a number of persons at various levels in the organization so as to see the practical implementation of quality measures on the ground.

INDUSTRY PROFILE

INDUSTRY PROFILE

Introduction

Healthcare has become one of India's largest sectors - both in terms of revenue and employment. Healthcare comprises hospitals, medical devices, clinical trials, outsourcing, telemedicine, medical tourism, health insurance and medical equipment. The Indian healthcare sector is growing at a brisk pace due to its strengthening coverage, services and increasing expenditure by public as well private players.

Indian healthcare delivery system is categorized into two major components - public and private. The Government, i.e. public healthcare system comprises limited secondary and tertiary care institutions in key cities and focuses on providing basic healthcare facilities in the form of primary healthcare centers (PHCs) in rural areas. The private sector provides majority of secondary, tertiary and quaternary care institutions with a major concentration in metros, tier I and tier II cities.

India's competitive advantage lies in its large pool of well-trained medical professionals. India is also cost competitive compared to its peers in Asia and Western countries. The cost of surgery in India is about one-tenth of that in the US or Western Europe.

Market Size

The overall Indian healthcare market today is worth US$ 100 billion and is expected to grow to US$ 280 billion by 2020, a Compound Annual Growth Rate (CAGR) of 22.9 per cent. Healthcare delivery, which includes hospitals, nursing homes and diagnostics centers, and pharmaceuticals, constitutes 65 per cent of the overall market.

Deloitte Touche Tohmatsu India has predicted that with increased digital adoption, the Indian healthcare market, which is worth US$ 100 billion, will likely to grow at a CAGR of 23 per cent to US$ 280 billion by 2020.

There is a significant scope for enhancing healthcare services considering that healthcare spending as a percentage of Gross Domestic Product (GDP) is rising. Rural India, which accounts for over 70 per cent of the population, is set to emerge as a potential demand source.

India requires 600,000 to 700,000 additional beds over the next five to six years, indicative of an investment opportunity of US$ 25-30 billion. Given this demand for capital, the number of transactions in the healthcare space is expected to witness an increase in near future. The average investment size by private equity funds in healthcare chains has already increased to US$ 20-30 million from US$ 5-15 million, as per Price, Water, House and Coopers.

A total of 3,598 hospitals and 25,723 dispensaries across the country offer AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy) treatment, thus ensuring availability of alternative medicine and treatment to the people.

The Indian medical tourism industry is pegged at US$ 3 billion per annum, with tourist arrivals estimated at 230,000. The Indian medical tourism industry is expected to reach US$ 6 billion by 2018, with the number of people arriving in the country for medical treatment set to double over the next four years. With greater number of hospitals getting accredited and receiving recognition, and greater awareness on the need to develop their quality to meet international standards, Kerala aims to become India's healthcare hub in five years.

Investments

The hospital and diagnostic centers attracted Foreign Direct Investment (FDI) worth US$ 3.41 billion between April 2000 and December 2015, according to data released by the Department of Industrial Policy and Promotion (DIPP).
Some of the major investments in the Indian healthcare industry are as follows:

- Versante Software Technologies, an Indian subsidiary of US-based IT consulting and software engineering services company Versante Technologies LLC, is in the process of raising US$ 1 million in its first round of external funding by March 2016, the proceeds of which would be used for initial promotion, and pan-India marketing and distribution of hand-held and portable patient care devices.

- Abraaj Group, a Dubai based Private Equity (PE) investor, has planned to buy a majority stake in an Indian firm Quality CARE India Ltd, which runs CARE Hospitals.

- Qatar-based Non-resident Indian's (NRI) including medical professionals and businessmen, are planning to set up a huge world-class healthcare project in Kochi worth Rs 1,300 crore (US$ 190.74 million)

- American multinational technology and consulting corporation, IBM has announced that Manipal Hospitals' corporate and teaching facilities will adopt 'Watson for Oncology', a cognitive computing platform trained by Memorial Sloan-Kettering that analyses data to identify evidence-based treatment options, helping oncologists to provide cancer patients with individualized healthcare.

- Apollo Hospitals Enterprise (AHEL) plans to add another 2,000 beds over the next two financial years, at a cost of around Rs 1,500 crore (US$ 220.08 million).
- Malaysia-based IHH Healthcare Berhad has agreed to buy 73.4 per cent stake in Global Hospitals Group, India's fourth-largest healthcare network, for Rs 1,284 crore US$ 192.84 million.

- Temasek Holdings Pte Limited acquired the entire 17.74 per cent stake of Punj Lloyd Limited in Global Health Private Limited, which owns and operates the Medanta Super Specialty Hospital in Gurgaon.

- CDC, a UK based development finance institution, invested US$ 48 million in Narayana Hrudayalaya, a multi-specialty healthcare provider. With this investment, Narayana Health will expand affordable treatment in eastern, central and western India.

Government Initiatives

India's universal health plan that aims to offer guaranteed benefits to a sixth of the world's population will cost an estimated Rs 1.6 trillion (US$ 23.48 billion) over the next four years.
Some of the major initiatives taken by the Government of India to promote Indian healthcare industry are as follows:

- Provisions made in the Union budget 2016-17:

- National Dialysis Services Program to be initiated to provide dialysis services in all district hospitals to accommodate the increasing demand for dialysis session
- A new health protection scheme for health covers up to Rs 1 lakh (US$ 1,470) per family.
- Setting up 3,000 medical stores across the country to provide quality medicines at affordable prices.
- Senior citizens will get additional healthcare cover of Rs 30,000 (US$ 441) under the new scheme
- Pradhan Mantri Jan Aushadhi Yojana to be strengthened, 3000 generic drug store to be opened

- Government of West Bengal has introduced G1 Digital Dispensary, which aims to provide people from rural areas access to primary healthcare services.

- A unique initiative for healthcare 'Sehat' (Social Endeavour for Health and Telemedicine) has been launched at a government run Common Service Centre (CSC) to empower rural citizens by providing access to information, knowledge, skills and other services in various sectors through the intervention of digital technologies and fulfilling the vision of a 'Digital India'.

- India and Sweden celebrated five years of Memorandum of Understanding (MoU). The cooperation in healthcare between India and Sweden will help in filling gaps in research and innovative technology to aid provisioning of quality healthcare.

- Mr. J P Nadda, Union Minister for Health & Family Welfare, Government of India has launched the National De-worming initiative aimed to protect more than 24 crore children in the ages of 1-19 years from intestinal worms, on the eve of the National De-worming Day.

- Under the National Health Assurance Mission, Prime Minister Mr. Narendra Modi's government would provide all citizens with free drugs and diagnostic treatment, as well as insurance cover to treat serious ailments.

Road Ahead

India is a land full of opportunities for players in the medical devices industry. The country has also become one of the leading destinations for high-end diagnostic services with tremendous capital investment for advanced diagnostic facilities, thus catering to a greater proportion of population. Besides, Indian medical service consumers have become more conscious towards their healthcare upkeep.
India's competitive advantage also lies in the increased success rate of Indian companies in getting Abbreviated New Drug Application (ANDA) approvals. India also offers vast opportunities in R&D as well as medical tourism. To sum up, there are vast opportunities for investment in healthcare infrastructure in both urban and rural India.
Exchange Rate Used: INR 1 = US$ 0.0147 as on March 01, 2016

The Indian healthcare sector is expected to register a compound annual growth rate (CAGR) of 22.9 per cent during 2015-20 to US$ 280 billion. Rising income level, greater health awareness, increased precedence of lifestyle diseases and improved access to insurance would be the key contributors to growth.

The private sector has emerged as a vibrant force in India's healthcare industry, lending it both national and international repute. It accounts for almost 74 per cent of the country's total healthcare expenditure. Telemedicine is a fast-emerging trend in India; major hospitals (Apollo, AIIMS, Narayana Hrudayalaya) have adopted telemedicine services and entered into a number of public-private partnerships (PPP). The telemedicine market in India is valued at US$ 7.5 million currently and is expected to grow at a CAGR of 20 per cent to reach US$ 18.7 million by 2017.Further, presence of world-class hospitals and skilled medical professionals has strengthened India's position as a preferred destination for medical tourism.

The Government of India aims to develop India as a global healthcare hub. It has created the National Health Mission (NHM) for providing effective healthcare to both the urban and rural population. The Government is also providing policy support in the form of reduced excise and customs duty, and exemption in service tax, to support growth in healthcare.

Investment in healthcare infrastructure is set to rise, benefiting both 'hard' (hospitals) and 'soft' (R&D, education) infrastructure.

COMPANY PROFILE

COMPANY PROFILE

INTRODUCTION

As a condom-manufacturing company, HLL Life care started small, but dreamed big. That dream changed lives in ways unimaginable. Soon, HLL became the go-to brand for various contraceptives. It was only a matter of time before diversification followed, bettering the brand with healthcare products and services. After more than 30 years of consistent quality performance, HLL Life care now takes on an even bigger responsibility – the vaccine security of the nation. No wonder then, at HLL work is about 'innovating for healthy generations', every day.

HISTORY

HLL's first plant began operations on April 5, 1969 at Peroorkada in Thiruvananthapuram district of Kerala. The plant was established in technical collaboration with M/s Okamoto Industries Inc. Japan.

Today, seven manufacturing plants later, HLL has grown into a multi-product, multi-unit organization addressing various public health challenges facing humanity. In 2003, when HLL had a turnover of a mere INR 163 crores, it had set its sights on becoming a INR 1000 crore company by 2010. HLL not only surpassed this figure by 2010 but also drew a clear road map to achieve ten-fold growth by 2020.

Now, HLL is a Mini Ratna, upgraded as a Schedule B Central Public Sector Enterprise. The company received the Prime Minister Award for being the best public sector enterprise in India. It is also the only company in the world which manufactures and markets such a wide range of contraceptives. Today, HLL produces 1.316 billion condoms annually, making it one of the world's leading condom manufacturers, accounting for nearly 10 percent of the global production capacity.

Over the years each of the initiatives taken up by HLL have been aimed at providing quality healthcare to every family. HLL's associate institutions, Hindustan Latex Family Planning Promotion Trust (HLFPPT) and Life Spring Hospitals, have ensured this to the nation's underserved and vulnerable populace, at an affordable cost.

With a vast array of innovative products, services and social programs to meet the country's healthcare needs, HLL Life care Limited is firmly on track, with its motto of 'Innovating for Healthy Generations'.

HLL continues to make its mark by setting new goals and taking on challenges others often view as impossible.

COMPANY VISION

Our vision is to become a INR 10,000 crore global healthcare company by 2020.

HLL will establish itself as a leader in its core activities through a process of continuous innovation and technology as well as quality to be internationally competitive participatory approach in order to:

a) Provide best value to the customer.
b) Be an employer of choice.
c) Promote the cause of family health in general and women health in particular.

COMPANY MISSION

To accomplish the corporate vision, HLL has outlined a mission to be a world class health care company by the year 2020 with focus on five key areas namely:

a) Business
b) Customer
c) Innovation
d) Employee Satisfaction
e) Social Sector initiatives.

COMPANY PURPOSE

The very purpose of business at HLL is to provide high-quality products and services at affordable prices.

COMPANY VALUES

HLL has a Value Charter – TTT– Trust, Transparency and Teamwork. It symbolizes the philosophy of HLL; its reason for existence, values and principles it follows in its daily activities. It also provides a common direction for all employees of HLL; the way to conduct in personal and professional life.

Trust

- We shall practice what we profess and thereby build trust among all our stakeholders and ourselves.
- We believe that trust creates an atmosphere of mutual respect and support.
- We shall never compromise doing the right things at the right time consistently.

Transparency

- We shall exhibit honesty and accountability in all our activities.
- We shall encourage active participation of all stakeholders in our decision-making process.
- We shall practice Equity, Fairness and Justice at work.

Teamwork

- We believe that excellent outcomes can be achieved only through teamwork.
- We shall build teams committed to company goals.
- We shall foster friendliness, camaraderie and selflessness.

HLL Life care Ltd. has adopted a Code of Business Conduct & Ethics for Board Members and Senior Management, Enterprise-wide Risk Management Policy and has constituted a qualified and independent Audit Committee of the Board of Directors. It also has a formal statement of Board Charter that sets out the role, structure, responsibilities and operation of the Board of HLL and its delegation of authority.

HLL GROUP COMPANIES

a) HITES (HLL Infra Tech Services Ltd)
b) HBL (HLL Biotech Ltd)
c) HLFPPT (Partners for Better Health)
d) GAPL (Goa Antibiotics and Pharmaceuticals)
e) HMA (HLL management academy)
f) Life Spring (Maternity Hospital)

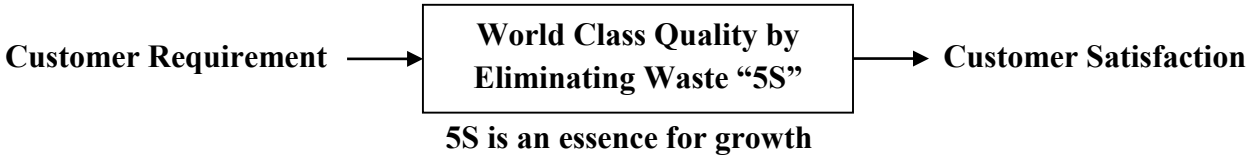
QUALITY MODEL IN HLL PEROORKADA PLANT

5S - 5S engages people through the use of 'Standards' and 'Discipline'.

It is not just about housekeeping, but concentrating on maintaining the standards & discipline to manage the organization - all achieved by upholding & showing respect for the workplace every day.

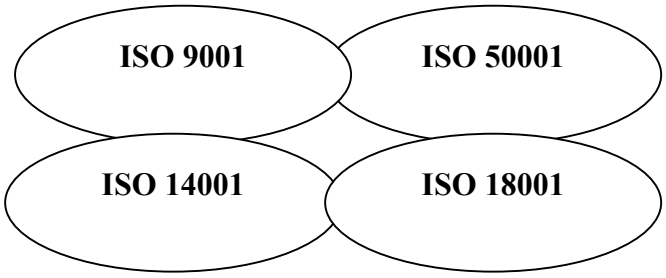
The 5 Steps in 5S are as follows:

- **Sort**: Sort out & separate that which is needed & not needed in the area.
- **Straighten**: Arrange items that are needed so that they are ready & easy to use. Clearly identify locations for all items so that anyone can find them & return them once the task is completed.
- **Shine**: Clean the workplace & equipment on a regular basis in order to maintain standards & identify defects.
- **Standardize**: Revisit the first three of the 5S on a frequent basis and confirm the condition of the workplace using standard procedures.
- **Sustain**: Keep to the rules to maintain the standard & continue to improve every day.



INTEGRATIVE SYSTEM

The company follows the concept of an integrative system which is:



The ISO 9001, ISO 50001, ISO 14001 and OHSAS 18001 are integrated with triple bottom line approach of Total Quality Management, which is people, plant, and profit.

QUALITY POLICY

g) Provide affordable healthcare solution focusing on inclusiveness, conforming to international standards, enabling people to lead healthy and happy lives.
h) Achieve organizational excellence through continual improvement by adoption of best technologies and practices in all areas.
i) Market products and services globally delivering highest value for customers through focus on innovation, quality, R&D relationship management.
j) Be an organization meeting highest standards in Corporate Governance and Corporate Social Responsibility.

PRODUCTION FACILITIES:

- **Peroorkada Factory, Trivandrum (PFT)**

The manufacturing unit at Peroorkada, in Thiruvananthapuram district of Kerala was set up in 1969 in technical collaboration with M/s Okamoto Industries Inc., Japan. The plant has undergone continuous modernization over the years and has an annual production capacity of 1600 million pieces of condoms. The facility is equipped with modern machines and equipment for production, inspection and quality testing, conforming to GMP and meets international standards. The unit produces many variants of condoms with different flavors and textures. Condoms manufactured in this facility have product certifications such as CE, KITE, SABS, NF, CMD CAS and meets a range of international quality specifications and standards such as: WHO 2003, 510K, ISO 4074:2002, SANS ISO 4074, ASTM D 3492 and GOST - 4645-81. The facility has certifications under ISO 9001:2008, ISO 14001:2004, ISO 13485:2003, OHSAS 18001:2007, WHO GMP and NABL as per ISO 17025:2005.

- **Akkulam Factory, Trivandrum (AFT)**

Akkulam Factory in Thiruvananthapuram district of Kerala is the state of the art facility for manufacture of Blood Bags and other medical devices namely Surgical Sutures (Absorbable & Non Absorbable), Intrauterine Devices (Copper T) and Mesh Implant for Reinforcement of Connective tissue structure.

The above products are manufactured in class 10000 and class 100 Clean room facilities maintained in a centrally air-conditioned atmosphere. The products have C E International Quality Certification and the manufacturing facility has been certified for conformity with international quality standards-ISO 9001,WHO GMP, ISO 13485, OHSAS 18001 and ISO 14001.

The annual production capacity of blood bags at the factory stood at 11.5 million pieces, copper IUDs - 5.5 million pieces, surgical sutures - 1,25,000 dozens and tubal rings - 2.5 million pairs.

- **Kanagala Factory, Belgaum (KFB)**

The Kanagala plant in Belgaum in the state of Karnataka commenced operations with the production of condoms in 1985 using Japanese technology. This unit underwent diversification in 1992 with the tableting facility for birth control pills - Mala-D/N and the formulation and tableting of Saheli (Centchroman) the indigenous, non-steroidal once-a-week pill. The tableting of Emergency Contraceptive pills started in 2003. Commercial manufacturing of women healthcare products commenced in 2006. KFB has also added a world-class hormonal/steroidal formulation plant – UNIPILL Block in 2012. The manufacturing unit has GMP and quality management systems (QMS) like ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007 and ISO 13485:2003.

- **Kakkanad Factory, Cochin (KFC)**

HLL's female condom manufacturing facility at Cochin Special Economic Zone, Kakkanad in Kerala has been set up in technical collaboration with M/s. Female Health Company (FHC), US. It is the second generation of female condoms made from Synthetic Nitrile latex, the product generically being termed FC2. The installed capacity of the plant is 7 million pieces of FC2 per year. In addition, KFC has a fully automatic testing and packing facility for male condoms with an annual capacity of 150 million. This facility mainly caters to the export market. KFC has the ISO 9001:2008, ISO 13485:2003, CE Mark and WHO GMP certification for manufacturing female condoms (FC2) certified by M/s DNV and ISO 9001:2008,ISO 13485:2003, CE Mark and WHO GMP for male condom facility certified by M/S DNV.

KFC has also received the NF Mark certification from M/s LNE for male condom facility and is also approved by many institutional buyers like IDA, Mission Pharma and UNFPA for the supply of male condoms.

In addition to the product certification, M/s TUV, with ISO 18001:2007 and ISO 14001:2004 certifications for safety, also certifies KFC health and environment compliance.

- **Manesar Factory, Gurgaon (MFG)**

  HLL has its in-vitro immuno diagnostics kit manufacturing facility at Manesar in Gurgaon. It has an installed capacity to manufacture 26 million rapid pregnancy test kits per year. The unit commenced operations in November 2007. The unit manufactures rapid test kits for detection of metabolic hormones such as human chorionic gonadotropin (hCG) in urine and prognosis of diseases such as Dengue, Malaria (different strains), Kala-azar (leishmaniasis), TB, Chikungunya and other infectious diseases. The facility has Quality Management Systems like ISO 9001:2008, ISO 13485 and CE mark according to IVD 98/79/EC directive for pregnancy test cards for professional use brands like Makesure, P-Test and Nishchay.

- **Pharma Factory, Indore (PFI)**

  Indore, the commercial capital of Madhya Pradesh opened its doors to a pharma production facility in 2010. The facility manufactures a range of pharma products which include formulations such as tablets, capsules and Oral Rehydration Salt. PFI also supplements the existing production facility of KFB in the area of women's healthcare products.

- **Irapuram Factory, Cochin (IFC)**

  Irapuram Factory, Cochin (IFC) is located at the Rubber Park near Perumbavoor, Kerala. IFC facility is the molding hub for male and female condoms. The installed capacity for male condom molding is 240 mpcs/ year and for the female condoms is 25 mpcs/year. The total constructed area in the 306 cents plot is 4650 square meter.

CERTIFICATIONS IN HLL

a) Facility Certifications

- ISO 9001 – Quality certification
- ISO 13485 – Medical Devices Standard
- ISO 50001 – Energy Management System
- ISO 14001 – Environmental safety standard
- ISO 18001 – Laboratory standard (sample testing and calibration)
- ISO 170025 – NABL (National Accredition Board for Laboratory)

b) Product Certifications

- CE-Mark – for selling in European
- KITE Mark – for selling in United Kingdom
- SABS – for selling in South Africa
- NF – for selling in France
- CMDCAS – for selling in Canada

SAFTY, HEALTH and ENVIRONMENT POLICY (SHE POLICY)

HLL lifecare limited is committed to protect environment, eliminate occupational hazards and ensure safety of employees and subcontracts through:

a) Monitoring and control of the impact of its activities, products and services on a continual basis.
b) Compliance of applicable legal and other requirements.
c) Adopting safe operating practices with an emphasis on social accountability.
d) Facilitating employee training and their involvement.
e) Pollution mitigation through adoption of best practices.
f) Conserving materials, energy and reducing waste at source and encourage usage of renewable energy sources.
g) Periodic review of safety, health and environment management system.

MAJOR CSR INITIATIVES DURING THE LAST DECADE

a) Benson Aid – GLL supports HIV affected Benson with nutritious food supplements, medicines and other care.
b) Village adoption – Adopted two villages in Karakulam in Thiruvananthapuram and Kanagala in Karnataka.
c) Renovates and maintains two parts in Kowdiar and Poojapura in Thiruvananthapuram.
d) Rest House for headload workers in Akkulam.
e) Health awareness camps at various locations in the country.
f) Regular blood donation camps.
g) Distribution of clothes and teaching aids to poor students of government schools.
h) Life skill training programs.
i) General health check-up at Government schools.
j) Installation of solar street lights.
k) Adolescent – wellbeing interventions like distribution of sanitary napkins, awareness programs, counseling services.

OUR PARTNERS

In its search for becoming a truly world-class provider of healthcare products and services, HLL has been seeking to adapt knowledge from its partners. HLL has over the years been networking with various corporate organizations, development agencies and NGOs by combining strengths and capabilities of several world leaders. Some of them are listed below:

- Okamoto Industries Inc. for male condoms.
- Female Health Company (FHC) for manufacture of Female Condoms and its promotion.
- Finishing Enterprises, USA for Copper T IUD.
- Helm, Germany for distribution of DMPA (Depot Medroxyprogesterone Acetate) in India.
- Arya Vaidya Sala (AVS), Kottakkal, Kerala, for Natural Ayurvedic products.
- Bharat Biotech International Ltd., Hyderabad for Hepatitis B and Typhoid Vaccines.

- Chengdu Institute of Biological Products, China for supply of JE Vaccines to Government of India.
- Cheng Da Biotechnology (CDBIO), China for marketing of Human Anti-Rabies Vaccine in India.
- Cycle Technologies Inc., USA for manufacture and distribution of Cycle Beads in India and abroad.
- More than 300 NGOs for implementing population stabilization and HIV/AIDS prevention and control programs.

MAJOR EXPANSION IN THE LAST DECADE

a) Marked entry into Infrastructure Development and Procurement Consultancy in healthcare industry and floated subsidiary HITES (HLL Infra Tech Services Limited).
b) Forayed into vaccine production, floated HLL Biotech Ltd which is implementing Integrated Vaccine Complex in Chengalpatto, Tamil Nadu.
c) Opened State of the art world class corporate R7D centre (HLL RDC).
d) Entered into the field of education and floated HLL Management Academy (HMA).
e) Opened 'HLL Bhawan', HLL regional offices in New Delhi and Mumbai.
f) Rapid Diagnostic Kits manufacturing unit at Manesar.
g) Started LIFESPRING mother and childcare hospital chain for the low income population.
h) Opened new manufacturing facility for male and female condoms in Kochi.
i) Forayed into retail marketing and opened exclusive condom shops under the name MOODS planet.
j) Investment in Pharma – WHO prequalified pharma-manufacturing facilities in Kanagala and acquired GAPL (Goa Antibiotics and Pharmaceuticals Ltd).
k) Investment in diagnostic services – Hindlabs MRI Scan Centers.
l) Investment in retail outlets in pharmaceuticals and ophthalmic products- HLL pharmacy and surgicals, HLL Opticals, AMRIT Pharmacy and AMRIT Clinic.

GLOBAL PERSPECTIVE

With the changing socio-political climate, global health programs are constantly seeking diverse solutions in the areas of medicine and healthcare. HLL provides the perfect answer to many questions that the world faces in healthcare, thanks to its extensive experience, innovative technologies and ample resources which today reach over 115 countries spanning the seven continents. Its consultancy services and products are part of the global healthcare packages of international agencies such as UNPFA, UNOPS, UNHCR, WHO, PSI and IDA.

GLOBAL COMPETITORS

a) US surgical (USSC), which is relatively new into the industry.
b) ANTZ Latex Private Limited, Singapore.
c) ANSELL Ltd, Australia.
d) Sinochem Nimbo Medical Company Ltd, China.
e) Green Mate Corporation, South Korea.

PRODUCT PROFILE

PRODUCT PROFILE

DETAILED PRODUCT PROFILE

PRODUCT	BRAND	VARIETY
Contraceptive	Moods	Ultrathin Supreme Dotted All Night Extra Long Scented (Rose, Musk, Jasmine) Chocolate Flavor Banana Flavor Strawberry Flavor Ribbed Colored Glow
	Share	Share 3S
	Nymph	Nymph 3S
	Nirodh	Deluxe Nirodh New Lubricated Nirodh Super Deluxe Nirodh
	Rakshak	SIPPSA Telungu
	Ustad	Ustad 3S
	Crezendo	Crezendo
Non-Steroidal Contraceptive	Saheli Novex	Saheli Novex
Oral Re-Hydration Salt	Jal Jeevan	Jal Jeevan
Blood Transfusion and Intravenous Set	HLL HEAMOPACK Preventol	HLL HEAMOPACK Preventol
Intra-Oterine Device	T-Care	T-Care
Medical Plaster	Plaster Aid	Plaster Aid
Surgical Sutures	Hicon Hisil Hinsurg Hincryl	Hicon Hisil Hinsurg Hincryl
	Hincocryl Hindox Hinglact	Hincocryl Hindox Hinglact
Hi-tech Hydrocephalus Shut	Ceredrain	Ceredrain
Needle Destroyer	Needle Destroyer	Needle Destroyer
Tube Sealer	Tube Sealer In Care	Tube Sealer In Care
Tissue Expander	HL SUB CUTEX	HL SUB CUTEX

Instant Needle and Syringe Destroyer	Instant Needle and Syringe Destroyer	Instant Needle and Syringe Destroyer
Blood Collection Monitor	Hi Care	Hi Care
Female Condom	Confidom Velvet	Confidom Velvet
Tubal Rings	Tubal Rings	Tubal Rings
CBD Herbs Berries	Chyauanules	Chyauanules

They can be further explained as follows:

HLL lifecare limited is providing wide range of products for different sections of market. The details are given below as follows:

1. **Condom –**
   Condoms are major profit earning components of HLL Lifecare Ltd. Condoms products are meant to prevent against sexually transmitted disease (STD) like Acquired Immune Deficiency Syndrome (AIDS).
   Different brands of condoms produced by HLL Lifecare limited are:-
   - Nirodh
   - Deluxe Nirodh
   - Super Deluxe Nirodh
   - Moods
   - Moods Supreme
   - Rakshek
   - Gay
   - Ustad
   - Share

2. **Contraceptive Tablets –**
   Contraceptive tablets are taken by women to avoid unwanted pregnancy. Different brands of contraceptive tablets produced by HLL Life are:-
   - Saheli
   - Mala-D

3. **Blood Bags –**
   During earlier years blood bag were imported, but HLL Lifecare started manufacturing of blood bag from 1995 with the technical knowhow from 'Sree Chithra institute of Medical Science and Technology' Trivandrum. A blood bag per annum is up and running at the Akkulam Factory. Different types of blood bag produced in HLL Lifecare Ltd are:-
   - Single
   - Double
   - Triple
   - Pediatric

- Transfer bag

4. **Copper – T Intra-Uterine Device –**
   Copper – T is an IUD device used by women to protect against unwanted pregnancy. Use of Copper-T leads to lower fertility rates in women. Commercial production of Copper-T is installed. It has been useful for a period of 5 years.
   Two brands of Copper-T products of HLL Lifecare Ltd are:-
   T- Copper 200B
   T- Copper 380A

5. **Hydrocephalus Shunt –**
   Hydrocephalus Shunt is used to regulate the pressure inside the head of children having abnormal brain fluid condition. HLL Lifecare started the manufacture of hydrocephalus shunt in the year 1994 at Akkulam factory.

6. **Surgical and Examination Gloves –**
   Need of total sterility is necessary in today's world of medical science. With a view of providing this HLL Lifecare Ltd entered in to the production of surgical and examination gloves, both sterile and non-sterile. The gloves are of export quality and subject to ASTM and ISO standard. It also manufactures produce free and chrome therapy gloves.

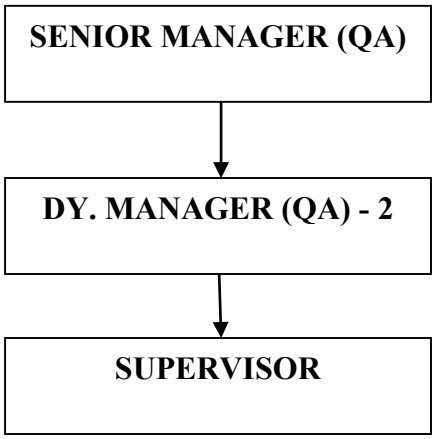
7. **Survival Sutures –**
   Aiding the heading process is a special type of thread called surgical sutures. HLL Lifecare Ltd planned to make available the sterile eyeless needled surgical sutures which are synthetic and surgical catgut sutures that will come in two types. Brand name, HINCON.

8. **Additional Products –**
   - Intra-Uterine-Device
   - Oral Rehydration Salt
   - Iron and Folic Acid
   - Medicated Plaster
   - Structures
   - Needle Destroyer
   - Blood Collection monitors tissue expander
   - Mediguard Surgical Gloves (Sterile)
   - Blood bag tube seater

FUNCTIONAL DEPARTMENTS

QUALITY ASSURANCE DEPARTMENT

Hierarchy of Quality Assurance Department



The quality department is divided into two main departments which are:

a. Half Product Quality Assurance
b. Full Product Quality Assurance

Half Product Quality Assurance

Production time for a lot of 6000 pieces is 45 minutes. These lots then go for half product testing. Half product is the product that comes out of vulcanizing machine. This type of testing mainly consists of visual checking. A sample of 40 randomly selected condoms from each lot is tested for the following:

- Oil
- Dust
- Folding
- Breakage
- Wrinkle
- Inside Sticking
- Not Uniform
- Bump
- Weak Spot
- Scratch

- Visible Hole
- Edge roll
- Printing not proper
- Nipple cream
- Foam
- Water dripping
- Improper Vulcanizing

Full Product Quality Assurance

In this section various tests are conducted to measure strength of the condoms, presence of holes, etc. Different types of tests are conducted in these sections which are:

- Burst Volume & Burst Pressure Test
- Water Leakage Test
- Package Integrity Test
- Lubricant Quantity Test

Thereafter send for quality checking. The qualities checking in HLL are of two types:-

1. Sample Check
2. Random Check

1) Sample Check:

In sample check 60 pieces of samples are taken and checked for quality.

2) Random Check:

In random checking 40 pieces are taken and checked visually. The passed lots are sending for 100% quality check such as:

a) Water Leakage Test
b) Burst Volume & Burst Pressure Test (Inflation Test)
c) Integrity Test
d) Lubricant Testing
e) Electronic Pinhole Testing

a) Burst Volume Burst Pressure Test

In this test the condoms are subjected to pressure. The pressure and volume will be determined in advance normally the pressure is chosen as 1 kilo Pascal and volume is 18.51 for 53 mm and 14.81 mm condoms. If more than 8 pieces of 310 samples are failed in this test, then the batch will be discarded.

b) Water Leaking Test

Here 40 samples are taken from each lot and 300ml of water is taken in each sample and kept for some time. If more than 20 defects are found information given to the inspection supervisor and information is passed to the production department. There are mainly two types of water leakage test:

- Hang and Squeeze Method
- Hang and Roll Method

c) Integrity Test

Here 30 condoms are taken randomly from a pack and kept in a jar and applying a pressure of 50+/10 Kpa. If the packs swell, it indicates that there is no air in the pack. This means a good one if the pack doesn't swell, it indicates that the packing is not good.

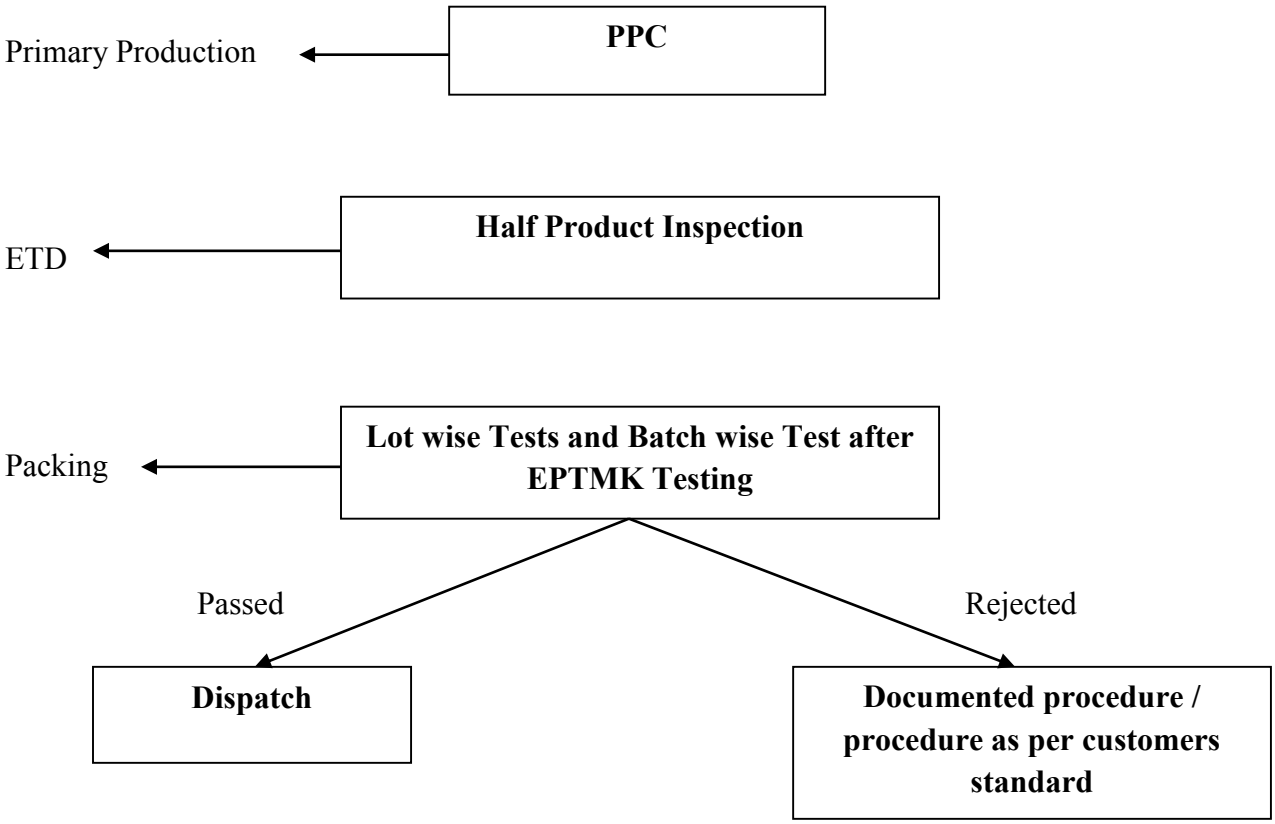
d) Lubricant Testing

Each condom should contain minimum 200mg of lubricant, if the oil content is less than prescribed amount, then the whole lot will be rejected.

e) Electronic Pinhole Testing

After maturation period, each condom from the lot is manually covered on the steel moulds provided in the automatic electronic pinhole testing machines. The steel moulds are fixed in a continuality-moving conveyor. Here the electrical resistance of the film is measured to examine the products, which are subjected to 100% electric testing to separate them with pinhole and weak spots. The good condoms are then subjected for further quality checks.

Schematic Diagram of Quality Control



Quality Assurance department of Peroorkada Factory is engaged with in-process Inspection, finished product inspection, control of non-conforming product and assignment of product identify and maintaining the quality system at department as per requirement of various quality system standards.

In process inspection includes half product inspection for giving feedback to primary production department, online testing after EPT machine checking to give feedback to Electronic testing department.

In finished product inspection each of production is tested.

INSPECTION DEPARTMENT

Inspection

Actually Inspection Department comes under the QC department but for ensuring better quality the company management keeps the inspection department a separate wing.

This department is in charge of inspecting the quality and durability of the product. They check the product in the time of manufacturing and in the idle of process. The samples were taken in random basis from the whole serial of production.

At the last the products are sent to final inspection department and there is 100% guaranteed electronic pinhole testing and is done through most modern Japanese machines.

There are two types of testing for the final product:

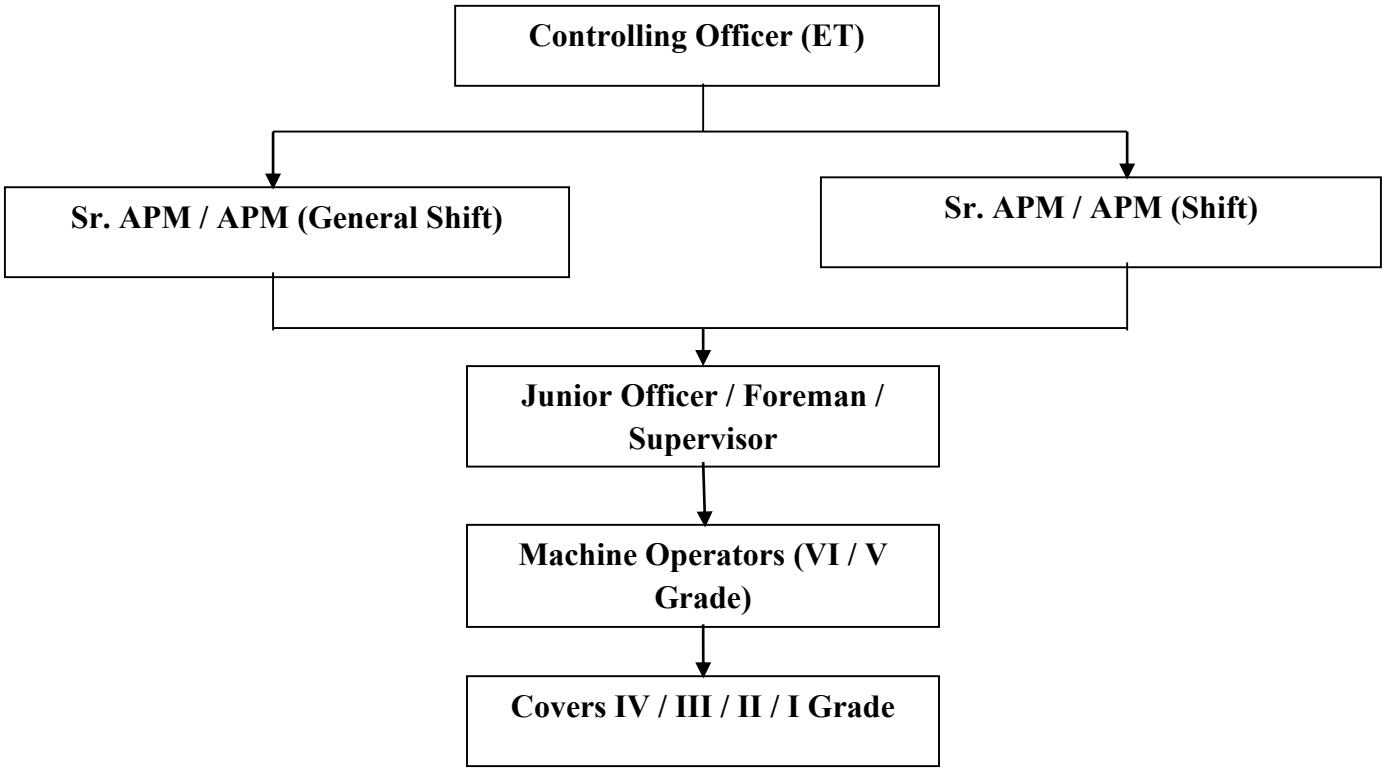
1) Wet – type test
2) Dry – type test

Functions:-

- Incoming material inspection
- In process inspection of products at various stages of production
- Final product testing and assuring quality of outgoing products
- Statistical Analysis
- Handling of customer complaints
- Maintaining of ISO 9002 quality systems
- Maintaining of quality systems as per the requirements in medical service directive

ELECTRONIC TESTING DEPARTMENT (ETD)

Organization Chart



The half products are send to the inspection department, where 100% electronic testing is done. The condoms had been tested for pinholes using electronic pinhole testing machine. The process follows manual, electrical and mechanical device. There are two types of pinhole testing machines:

- Wet Type
- Dry Type

The wet type machine is used to remove the powder, which fills the small holes in the condoms, detects any hole in the condoms, and makes the condom clean and dry the condom by passing it through a heating chamber. The dry machine consists of a carbon rubber mechanism, which is provided with a high voltage which separates the bad condoms from the good ones. In this test, the condoms are wrapped on steel moulds and passed through a carbon brush which has charged

by electric voltage up to 1600 volts. When the mould is passed through the brushes, any pinhole on the condom can be detected. The good condoms are sending to the packing department.

Functions:

The functions of ETD department are to test & roll of condoms in Electronic Pinhole machines. ETD receives condoms manufactured by HLL as well as bought up from other sources passed by HPQC (Half product Quality Control) for testing in EPT (Electronic Pinhole Testing) machines.

Material Testing (MT) & Research and Development (R&D)

Material Testing

To maintain high quality products providing to the society, HLL Life care Limited has a material testing lab which checks the quality of raw materials supplied to the company. This section keeps a consistent watch over the inputs and reports its findings to the concerned departments. This section also is entrusted with the design and art work of packages and cartons to ensure that all displayed as per statutory requirements.

a) Receiving Raw Materials:-

The raw material used is latex. All the raw material includes rubber and other chemicals such as tamol, darvan-I, darvan-II, Sulphar, Zinc Oxide are received in barrels and accepted after testing and getting clearance in the laboratory.

b) Sample Testing:-

Random sample of raw latex is taken to the laboratory here with latex is tested for various properties like acidity, viscosity, flow rate, PH value, mechanical stability of the latex etc. Only when all properties are satisfied, they are taken for further processing.

Research & Development (R&D)

HLL Life care Limited gives more importance to Research and Development department. As the company is in contraceptive and healthcare industry, which is highly consumer sensitive industry, more care has to be given to research and development activities. During the year the company proposes direct investment to strengthen its R&D.

R&D is the main centre in corporate head office which keeps the presence of their product alive in the market.

The R&D is concerned with the development of new and innovative products. It conducts frequent test to analyze and ensure the quality of the chemicals used for the condom production and also finished products.

Objectives:-

a) Development of new products
b) Development of new technologies
c) Absorption / adaptation / assimilation of new technologies

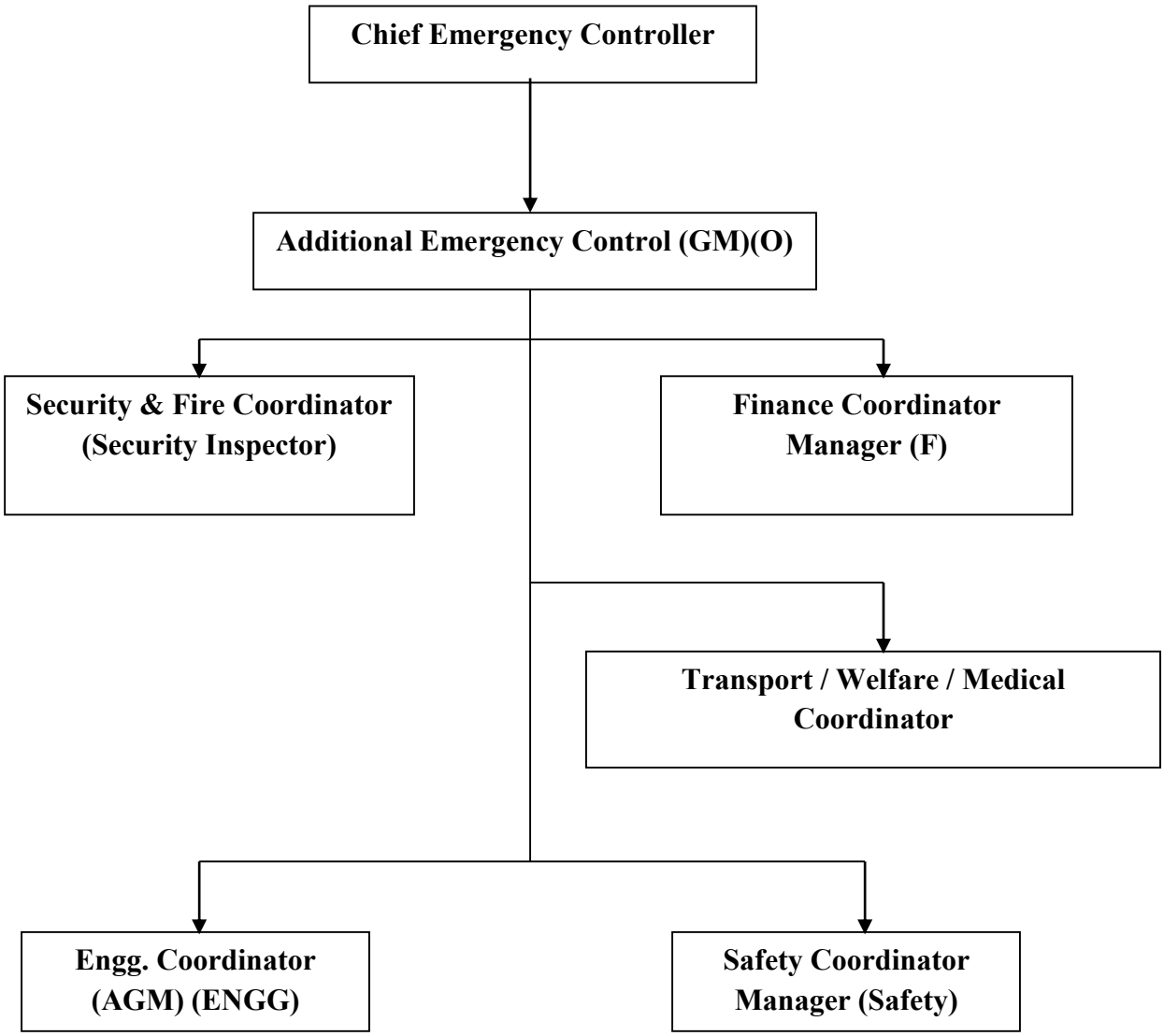
Functions:-

a) Identification of alternative source for product chemicals both imported and indigenous is being carried out.
b) Quality parameters of products at various levels of production are being checked.
c) Modification work of Bio-Gas plant.
d) Development of packing machines.
e) Modification of effluent treatment plant for further refinement of treated water.

SAFETY & SECURITY DEPARTMENT

The company integrates safety and environment protection as a policy along with the production quality related activities.

Organization Chart



The company has a well-established safety, occupation and environment policy that ensure safety of public, employees, plant and equipment.

- The Peroorkada plant complies with all statutory rules and regulations basis.
- It imparts training to its employees as per the training calendar, carrying out statutory safety audits of its facilities as per legal requirements.

- It conducts regular medical checkup of its employees and promoting eco-friendly activities.
- It carry outs hazard identification and risk assessment.
- It takes various measures to avoid the fire hazard.
- Air pollution management
- Waste water management
- Solid waste management
- Forestation activities

5 'S'

Integrated Japanese concept for work place management by five steps of Housekeeping viz. Organizing, neatness, cleaning, standardization and discipline. Each 'S' stands for:

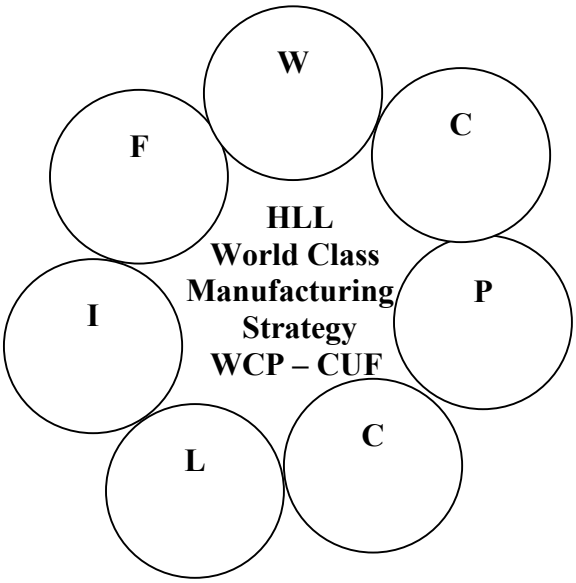
a) Seiri - Sort out
b) Seiton - Set in Order
c) Seiso - Shine
d) Seiketsu - Standardize
e) Shitsuke - Sustain

It is an important management philosophy towards high level of process, accuracy, dust free atmosphere, proper maintenance, clean habits, understanding proper training, better human relationship etc.

Functions of 5 'S':

- A frame of mind
- Improves quality of human behavior
- Team work
- Starts with each individual practicing it
- For total employees involvement
- Reduces time for searching materials
- Marks area and cautions
- Keeps things in the best way
- Minimizes inventory
- Improves work place utilization
- For total quality environment
- A basic step towards total quality management
- Creates proper storage of hazardous material
- Gives proper care for emergency equipment's
- Eliminates unsafe situation
- Organizes all cleaning aids
- Helps operator for doing autonomous maintenance
- Reduce wastages, defects and breakdowns
- Calls for regular inspection and feedback
- Assign roles and responsibilities
- Stepping stone for world class productivity

Strategy for World Class Management [Balance Score Card Principle]



W - Waste Elimination, Work Environment

C - Classic Quality

P - Productive & Predictive Maintenance

C - Customer Driven Approach

L - Learning and growth, Loss Control

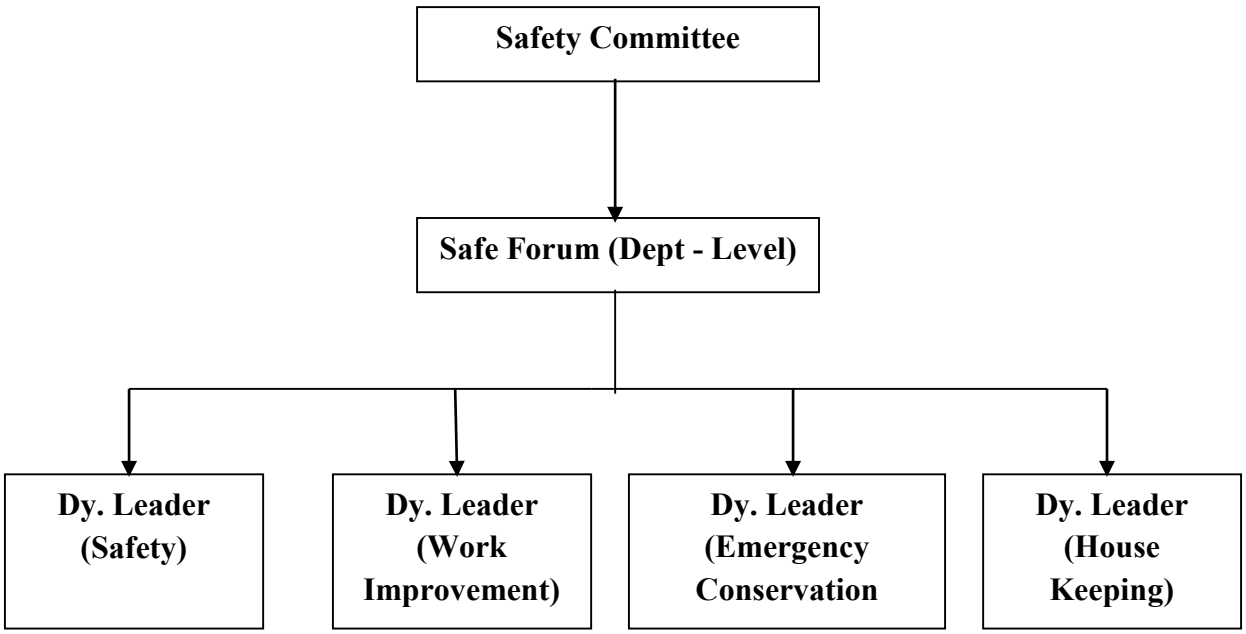
I - Internal perspective, International control Information flow

F - Financial perspective

SAFE FORUM

Safe forum is a media for implementation of 5 'S' within the factory. It is a three-tier scheme with Safety Committee as the axis linking management review meeting and quality circle at Grass Root Level. Safe forum is introduced recently in HLL to ensure involvement of people at all the levels of an organization by assigning responsibility towards safety & environment protection.

Organization Chart



PRODUCTION DEPARTMENT

The production department processes and tracks all of the drawings for any given project once they are released from the design department. HLL has today five state of the art manufacturing facilities. HLL commenced its commercial operations on April 5, 1969 at Peroorkada in Thiruvannthapuram in the state of Kerala. Together with the manufacturing facility at Peroorkada, HLL today has five state of the art manufacturing facilities at:

a) Kanagala near Belgaum (1985) – for contraceptives and pharmaceutical products
b) Akkulam in Thiruvananthapuram (1994) – for hospital products
c) Kakkanad in the Cochin Special Economic Zone (2004) – for female condoms and male condoms for export
d) Manesar in Gurgaon (2007) – for rapid in-vitro diagnostic test kits.

All these units have ISO 9001, ISO 14001 – quality and environmental management system certifications.

The corporate vision of achieving the production department has a vision of "achieving a target production of 1 billion pieces as a first step towards corporate vision". HLL has recorded a high productivity and profitability progressively over the years. It is because of the implementation of very efficient and effective manufacturing process with the technical help from Japan.

The production department is divided into two. They are:

I. Primary Production
II. Secondary Production

I. PRIMARY PRODUCTION

The manufacturing process of condoms in the primary production department can be broadly classified into three main operations, viz.

A. Compounding

Compounding is done to make the latex suitable for molding operations and for making the final product in conformity to requirements of the user. This is achieved by the addition of fixed quantity of liquid compounding chemicals followed by compounding chemicals dispersion to roll latex into mixtures. The dispersion is prepared by using ball mill/sound grinder/pearl mill/attrite mill. After this the mixtures heated and then called for pre-vulcanization. Then the pre-vulcanized compound is transferred to the molding section after the aging period.

B. Molding

In this section highly automated condom shaped moulds are mounded on dual line chain and are by two motor.

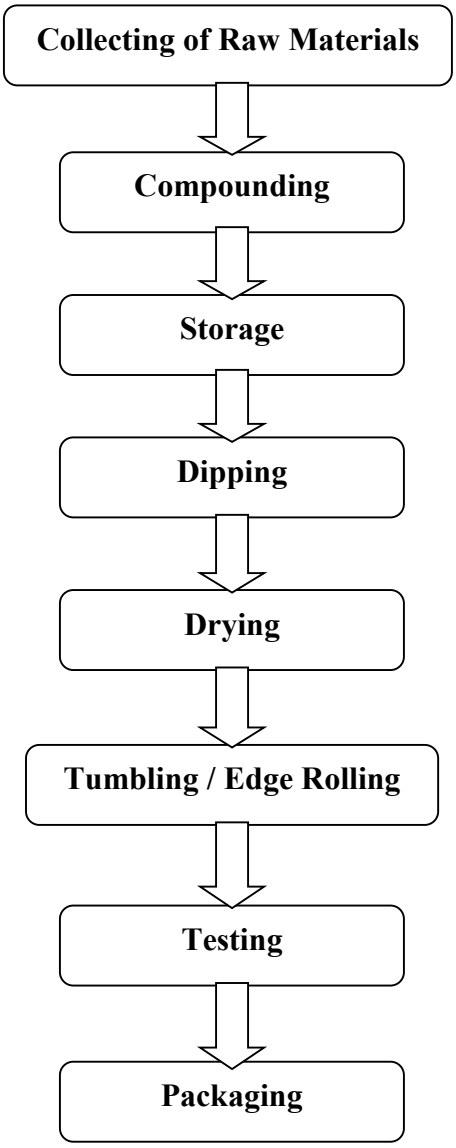
- Mould washing
- Mould drying
- First dipping
- Drying
- Second dipping and drying
- Edge rolling (beading)
- Drying and vulcanization
- Dipping is swelling solution tank
- Dipping in anti-sticking solution
- Stripping

This cycle is continuous round the clock and fully automatic setup.

C. Vulcanizing

It is the process of cross-linking modules to make the material harder, less soluble and durable. It is also called curing. Vulcanizing operations are done in automatic vulcanizing machines in order to improve the physical properties of the products. The condoms from the molding section are sent to the vulcanization machines. The condoms are vulcanized at the same time the powered in these machines and are collected in crates. The production lots are transferred to quality control half product without losing identity.

MANUFACTURING PROCESS



COLLECTING THE RAW MATERIALS

Rubber latex is obtained from the milky fluid produced b various tropical plants. Latex is actually an emulsion or dispersion of tiny rubber particles in water and ingredients added to the latex must be able to attach to the rubber particles during compounding.

COMPOUNDING

Next the chemical additives are mixed to from a paste. This paste is then blended with the liquid latex in a process called compounding.

STORAGE

The latex and chemical compound is then unloaded into drums for storage, where it remains for approximately seven days. During this period, vulcanization chemically strengthens the bond of the rubber. The storage time also allows any air, which might have been trapped in the mixture during compounding to escape.

DIPPING

The compound is then added to the dipping or condom-forming machine. The dipping machine is a long, hooded machine approximately 100 feet (30.5m) in length. Thick tempered glass rods move along a closed belt between two circular gears. The belt drags the rods, which are called mandrels, through a series of dips into the latex compound. The mandrels rotate to spread the latex evenly. Several coats are required to build the condom to its required thickness. Between each dip, the latex is hot air dried.

After the final dipping and drying, the condoms automatically roll off the mandrels. A machine shapes and trims the ring of latex at the n=base of each condom.

TUMBLING

The condoms are put in a tumbling machine, where they are coated with talc or another similar powder to prevent the rubber from sticking to itself.

TESTING

After a curing period of several days, the condoms are sampled by batch and tested for leaks and strength. The first such test is the inflation test, in which the condom beyond 1.5 cubic feet, about the size of a watermelon, before bursting. This test is considered most important because the elasticity of the condom keeps it from tearing during intercourse.

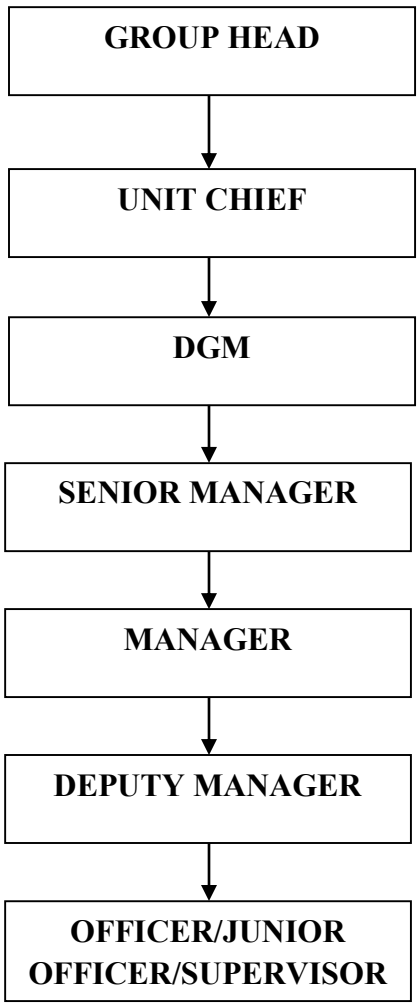
In water leakage test, the condom is filled with 10 ounces (300ml) of water and inspected for pin-sized holes by rolling it along blotter paper.

Condoms are also tested electronically. This involves mounting each condom on a charged stainless steel mandrel. The mandrel is passed over by a soft, conclave brush. If pin holes are present, a circuit will be established with the mandrel, and the machine will automatically reject the condom.

PACKAGING

A machine rolls condoms that have successfully passed these tests. Rolling the condom makes it easier to package and use. Lubricant and spermicidal may be applied by a metering pump just before the top wrap is added in the foiling process.

HIERARCHY OF PRIMARY PRODUCTION DEPARTMENT



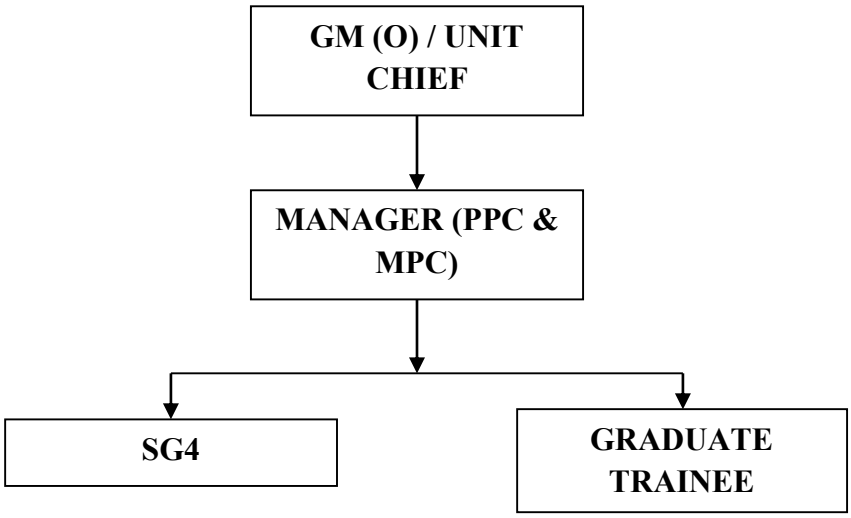
II. SECONDARY PRODUCTION

Secondary production department consists of the following departments

- Quality Assurance Department
- Electronic Testing Department
- Packing Department

PRODUCTION PLANNING & CONTROL DEPARTMENT

Organization Chart



Production, Planning and Control (PPC) prepares production schedule to meet the overall objectives in terms of quantity, quality and delivery of products. The functions of PPC are as follows:

- Interact with departments of production, quality control, MPC, Sales, Stores, marketing etc for the effective achievements of the organizational growth.
- Preparation with social marketing organization and marketing department to affect the order efficiency
- Sending monthly production data to DGTD through company secretary
- Renewal of licenses related to drugs, sulphur, rubber, diesel, furnace oil, rectified sprit and ammonia by interacting with Drug Control Board, Rubber Board etc.
- Monitoring and review of production effectiveness

Major Customers of HLL

a) Major customers of HLL in domestic market are Ministry of Health & Family welfare, SMO's (Social Marketing Organizations) and Marketing division of HLL.

b) Major customers of HLL in International market are UNFPA, IDA, IPPF, Mission Pharma, etc.

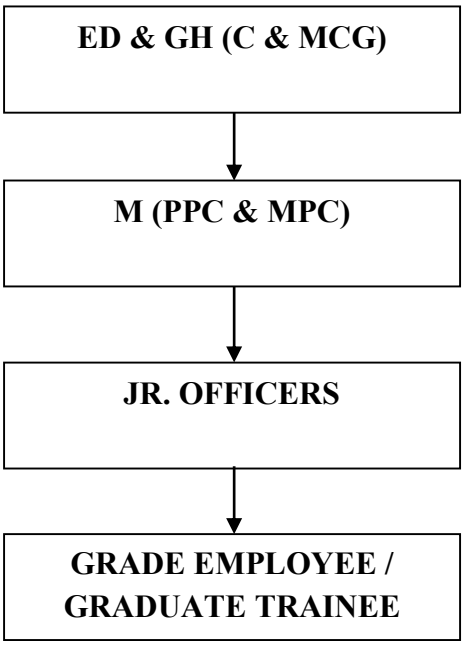
c) HLL also caters to the requirements of Middle East countries, African countries, Russia, Europe and Asian countries.

ACTIVITIES OF PPC DEPT

a) Planning and monitoring of condom production as per the requirement based on orders.

b) Interaction with external agencies for maintaining the statutory requirements of PFT.
c) Preparation of Monthly/ quarterly/ annual report to evaluate the planning and scheduling of condom production.

MATERIAL PLANING AND CONTROL DEPARTMENT



Objectives –

Proper planning of procurement of raw materials, chemicals & packing materials as per the production plan and packing plan. Control of inventory to keep optimum stock, to avoid stock out situation & unnecessary inventory campaign.

ACTIVITIES –

a) Preparing for annual budget for production and packing materials based on annual plan meet/ marketing projections/ production and packing plan.
b) Material required along with specification and quantity is forwarded to purchase to facilitate purchase department to obtain the rates and identify the vendor.
c) PR's are given subsequently, with schedule of supply according to the indication from production/ marketing/ orders etc. Considering the norm, present stock/ FG stock and on order quantity for items not covered under MRP. For all materials covered under MRP based on MRP run PR's will be generated automatically.
d) Periodic monitoring and review of material stock position and providing feed back to purchase department to ensure supply.
e) Raising stock transfer P.O's for receiving materials from other units and corresponding with other units for the material required by them.
f) Raising subcontracting PR's for printing on foil/ wallets/ cartons and PR's for printing of consignee address stickers for export orders.
g) Dealing with SMO supplied products.
h) Dealing with specifications of materials with MT/ stores etc.

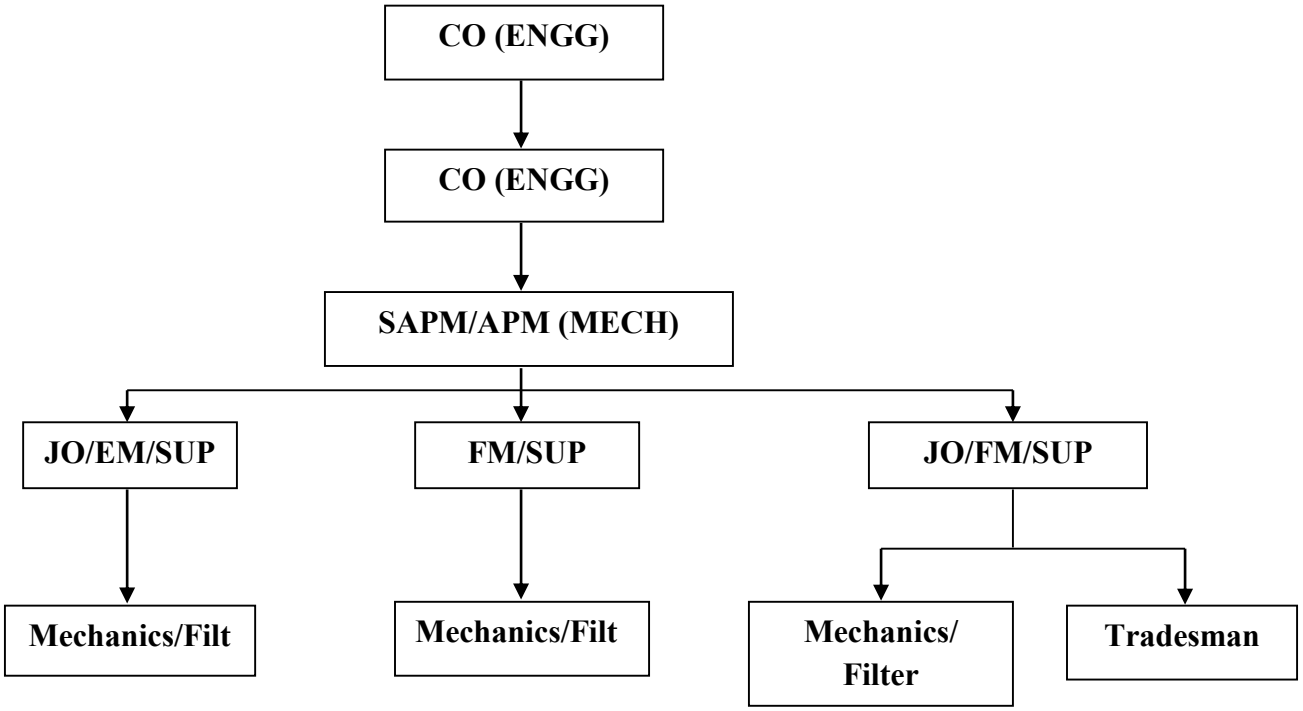
ENGINEERING DEPARTMENT

In HLL, Engineering department is responsible for the installation, proper maintenance and upkeep of all factory structures and equipment's and in maintaining the optimum of condoms.

There are mainly four sections in engineering department, they are:

1. Mechanical section
2. Utility section
3. Instrumentation section
4. Electrical section

1) Mechanical Section:



Description:

JO: Junior Officer
FM: Forman
M/S: Mechanical Shift
MM: Mechanical Maintenance

It plays a key role as a service section to keep the plant and machinery in satisfactory condition according to the standards set by the management.

Functions:-

- Mechanical maintenance of the plant & machinery
- Inspection of the all-incoming materials/spare/equipment's.
- Modification, new installation, technology, up gradation and continual improvement of equipment / machinery.

Objectiveness of Maintenance:

- Increase the productivity equipment's.
- Decrease the overall cost of production
- Safeguard the equipment by minimizing the rate of deterioration of assets.

Types of Maintenance:-

Maintenance is subdivided into two main categories:

a) Preventive maintenance
b) Breakdown maintenance

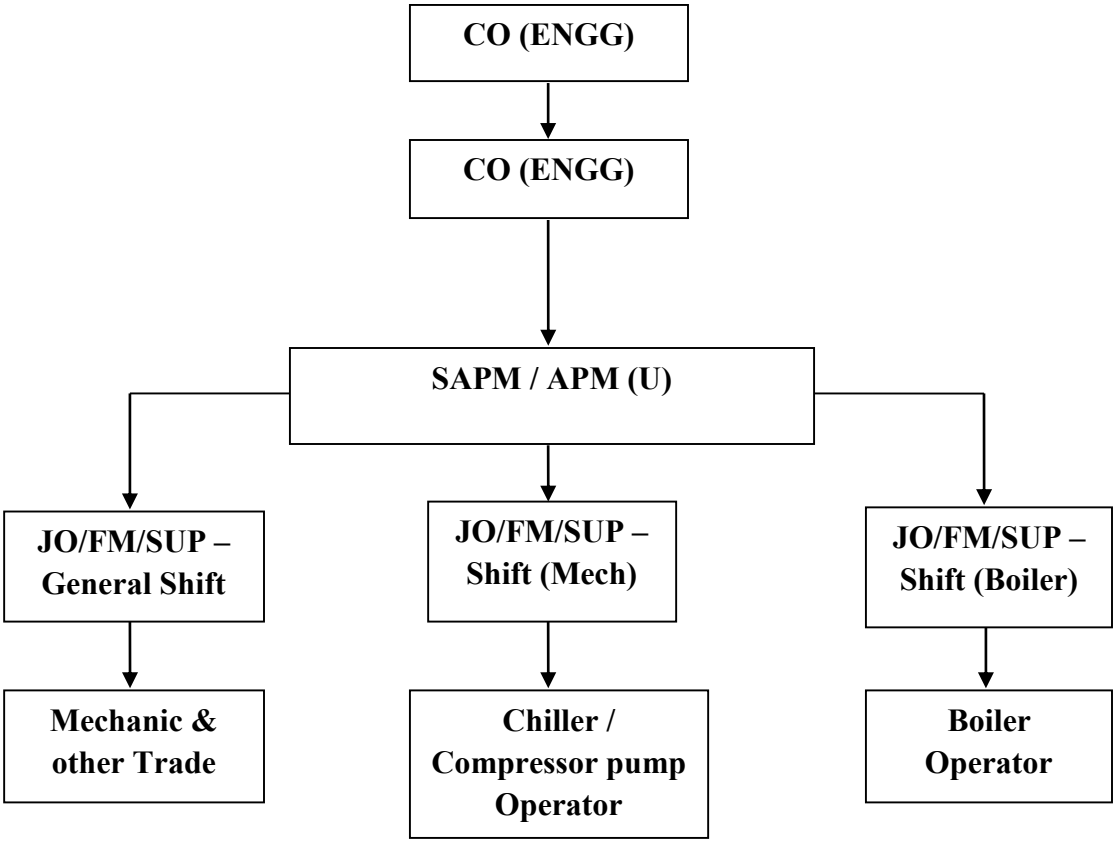
A) Preventive Maintenance:-

Activities carried out to prevent failure or detect failures before it develops in to breakdown. The preventive maintenance adopted in HLL includes lubrication, plant or over hauls regular cleaning adjustment etc.

B) Breakdown Maintenance:-

Activities carried out to correct the failure or breakdown after the occurrence of breakdown.

2) **Utility Section**:



Description:

JO: Junior Officer
FM: Forman
M/S: Mechanical Shift
MM: Mechanical Maintenance

Functions:

The main function of utility section is the maintenance of machinery which incudes:

a) Chiller
b) Boiler
c) Compressor
d) Pipeline maintenance

A) Chiller

Chillers are used for cooling. There are five chillers in the organization. They are used for process cooling and two are used for refrigeration. Process cooling means the cooling of mould and condoms during production process. Refrigeration includes air conditioners and other coolers like water coolers in the organization.

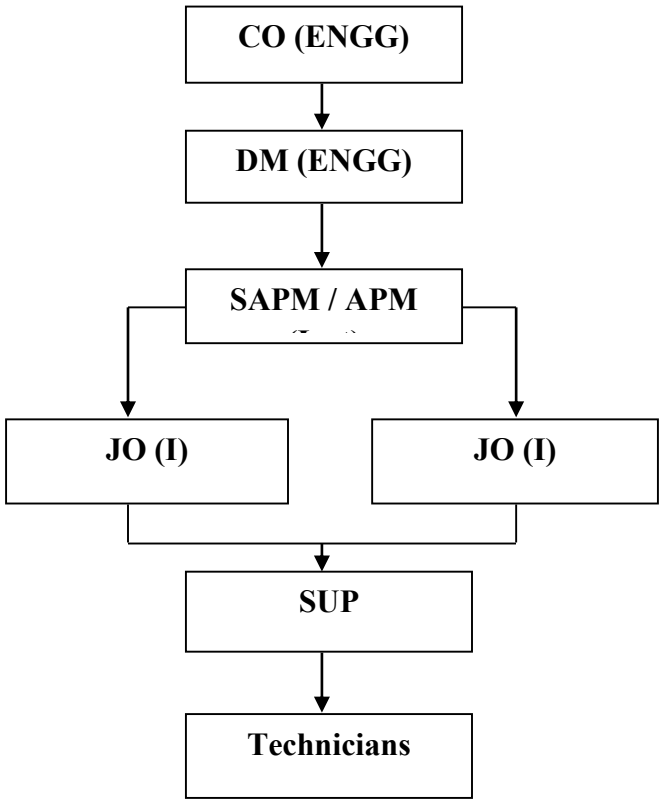
B) Boiler

Boilers are used for supplying steam to provide required temperature during drying process. There are 3 boilers in total.

C) Compressor

Compressor is used to provide airflow for condom stripping. It is also used in vulcanizing process. There are three compressors in the plant.

3) Instrumentation Section:



Description:

JO: Junior Officer
FM: Forman
M/S: Mechanical Shift
MM: Mechanical Maintenance

The instrumentation section consists of:

a) Electronic workshop
b) Calibration Lab

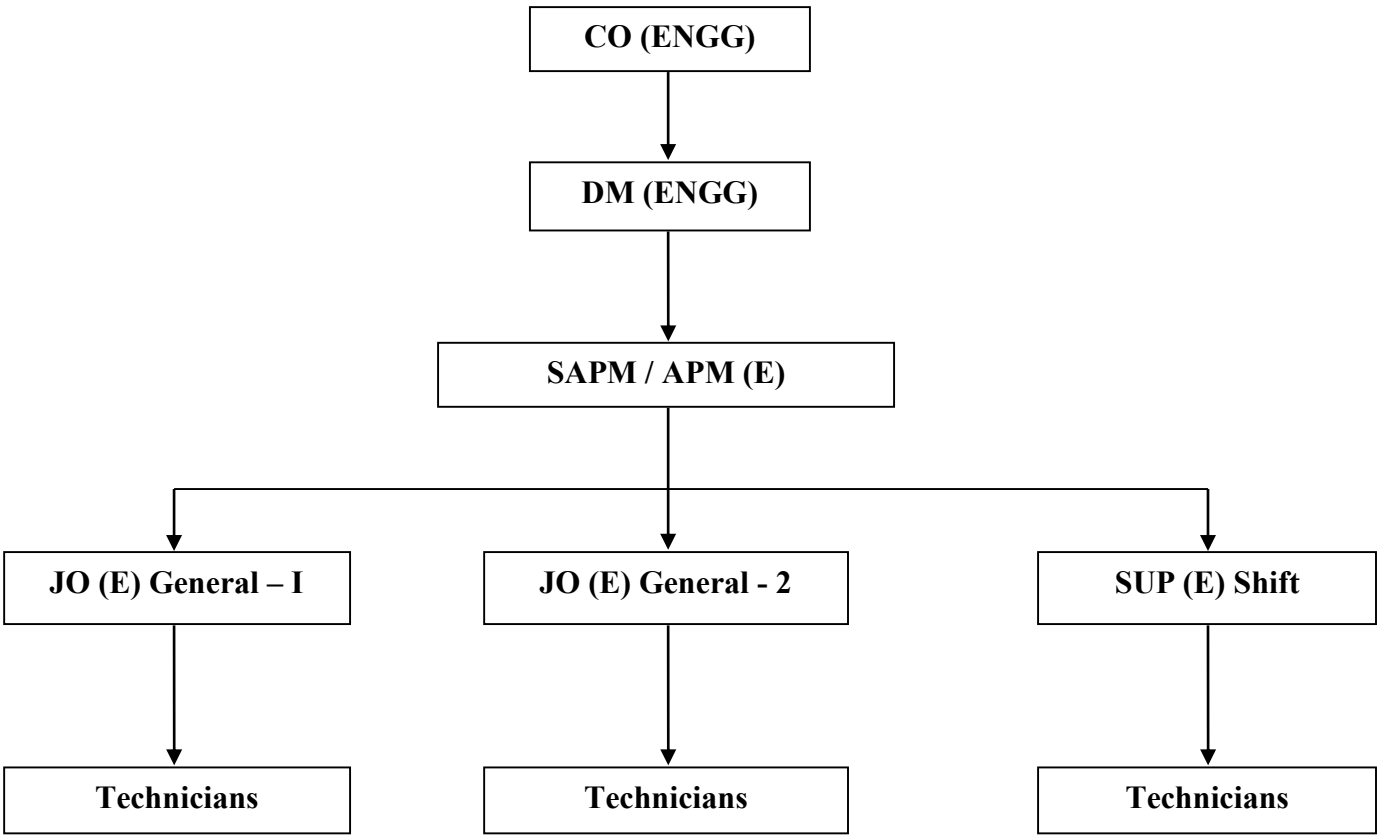
a) Electronic Workshop

It deals with motor and other electronic equipment's.

b) Calibration Lab

The main function of calibration lab is the testing of equipment's used in process control such as ammeter, voltmeter and other sensitive instruments. Standard device is placed in the lab and reading of devices during production process must match the reading of standard device.

Electrical Section:



This section plays a key role in the service section regarding the power receiving and distribution system and to keep the plant and machinery in satisfactory condition according to the standards set by the management.

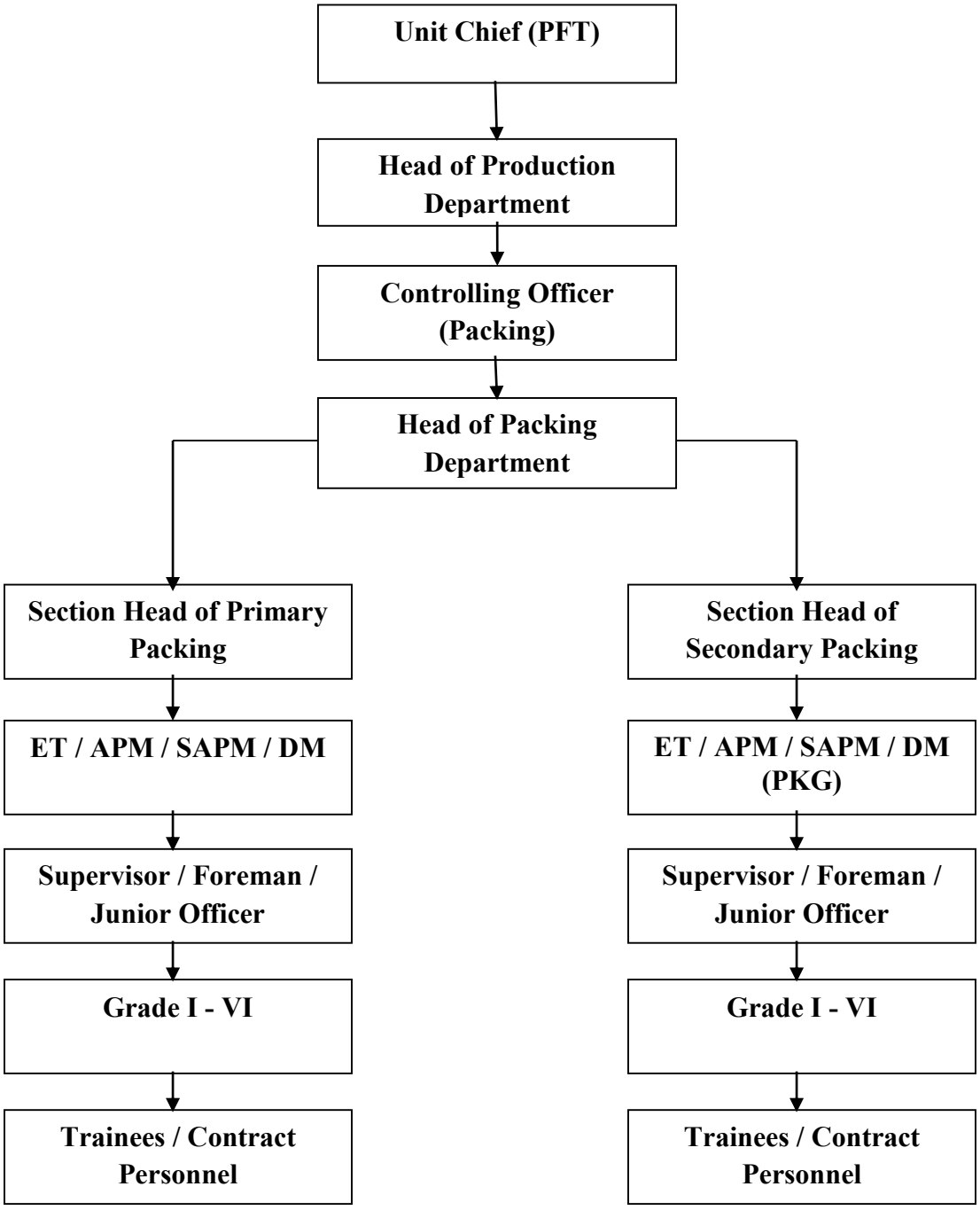
Functions:

- Power receiving & distribution
- Preventive maintenance
- Breakdown maintenance
- Winding and over hauling of motors
- Inspection of incoming electrical materials
- On the job training to all electrical technicians

The task of maintenance is to keep production and testing machinery, service equipment's, building & grounds in good working condition with sufficient safety provisions.

PACKING DEPARTMENT

Organization Chart



Naked condoms from Quality Control Finished Product are received batch wise and scheme wise, foils, silicon oil, pouches wallet, cartons boxes etc.… after passing the incoming inspection are received from store department. Naked condoms are issued to packing machine for strip packing in foils as per packing schemes. Required quantity of silicon oil is closed in strip as part of machine operation. Quality of silicon oil closed is as per customer's standard. Strips are packed in to pouches and wallets and then in to cartons & boxes as per customer requirements.

The operations involved can be broadly classified into two categories:

1) Primary Packing Operations
2) Secondary Packing Operations

1) Primary Packing Operations

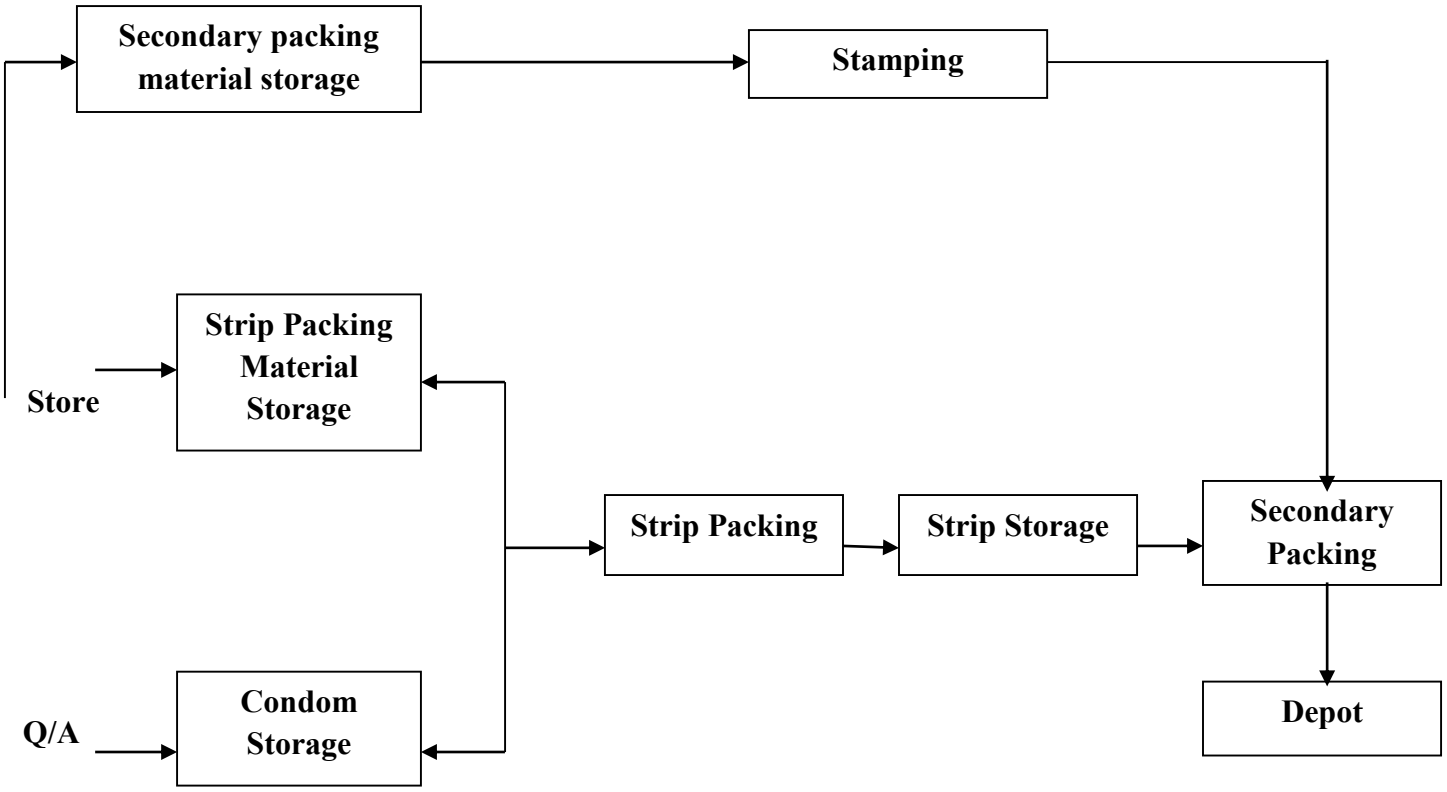
In primary operations, the major input to the process is tested and rolled condoms, which are received, from QA department. Foils, lubrications, fragrances and flavors are the other major department that the Primary packing operation involves. Strip packing of condoms using packing machines i.e. tested and rolled condoms are packed as strips with lubricants / fragrances flavors in aluminum foils.

2) Secondary Packing Operations

In the SPO the major input to the process is strip packed condoms from the primary packing section. Secondary packing materials such as pouches, wallets, cartons, leaflets and boxes are received from stores department. After completion of secondary packing of a batch, the quantity is offered to Quality Assurance department for FG (finished goods) inspection. The Quality Assurance passed filled boxes will be transferred to depot section after box strapping operations.

Flow Chart of Packing Operations

Organization Chart



There are two types of packing:

1) Squeeze packing
2) Square packing

1) **Squeeze Packing**:-

Less lubrication oil is used to lubricate the condoms compare to square packing. This is for domestic market and the expiry period is 3 years.

2) **Square Packing**:-

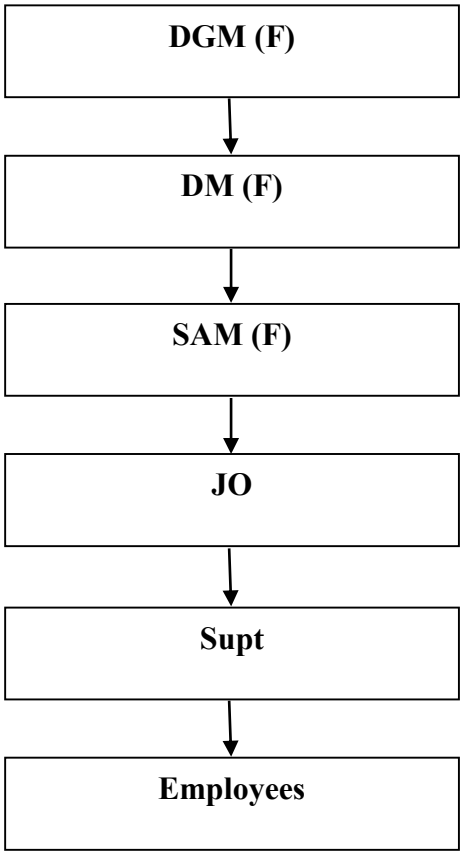
These condoms are more lubricated and more foil is used to pack. This is for international markets and its expiry period is 5 years. The final product in cases manually and from there the sales department will take for sales.

Lubricant Quality Table

Sl No	Type of Pack	Eg. Of Scheme of Pack	Range of Silicon Oil quantity (mg)	Minimum Range (mg)	Maximum Range (mg)
1	Squeeze rectangular (Govt. supplies & SMO's)	Free supply, Delux, Sawan, Milan, Zaroor, Mithun, Ahsaus, New lubricated, Rakshak, Trill, Muktha etc.	280 +/- 10	270	290
2	Square (Export)	UNFPA, IPPF, IDA, Moods, export etc.	460 +/- 10	450	470
3	Square (SMO brand)	Masti	280 +/- 10	270	290
4	Square pack (Domestic)	Moods branded varieties	410 +/- 10	400	420
5	Square pack (Domestic)	Moods all right	460 +/- 10	450	470
6	Square pack (Domestic)	Astha	560 +/-	510	530

FINANCE AND ACCOUNTS DEPARTMENT

Organization Chart



Description: -

DGM - Deputy General Manager

DM - Deputy Manager

SAM - Senior Assistant Manager

JO - Junior Officer

Supt - Superintendent

The company reinvests the profits to meet the working capital. This enables the company to operate without outside borrowing. A separate file is maintained for every supplier. In case of extra item supplied by the supplier, purchase department sends an amendment order to finance department on bills are prepared accordingly and a copy will be send to stores section. If the

supply is less than the order placed no payment is made unless and until full quantity of material is supplied. The types of payment made to suppliers are:

1. Advance payment
2. Payment against credit
3. Payment through bank

Functions: -

- Suppliers Bill / Party Bill section
- Payroll Section
- Internal Audit Section
- Costing Section
- Ledger Section
- Cash Section
- Finalization of Accounts
- Working Capital

Suppliers Bill / Party Bill Section

This section is concerned with matters relating to purchase of goods and raw materials. The Material Receipt Report (MRR) prepared by the stores department is send to this section during the purchasing function. The MRR in addition to the suppliers invoice sends a copy of the purchase order is to be send to be maintained by this section in order to send the suppliers bills.

PAYROLL SECTION

This section deals with salary computation with respect to attendance, overtime work, leave and recoveries in accordance with time office and personal department. Vouchers have been sanctioned and cash/cheque issued from the cash section. Salary account is prepared monthly. Advance amount is given to employees are recovered from next month's salary. Allowance like festival allowance, house rent allowance, medical allowance and dearness allowances etc. are given to the employees.

The details regarding attendance of the employees are received from the Time Officer and an Accountant of the information received and taking in to consideration statutory deduction; loan and the salary bills are prepared. This section also deals with TA bills, medical advance settlements etc.

INTERNAL AUDIT SECTION

Scrutinizing of all personal files of all employees of the unit relating to annual increment, promotion, transfer etc. Scrutinizing all purchase proposals, comparative statements connected with supply order and purchases. Scrutinizing pay fixation statements, arrears pertaining to pay provision and other connected work of all employees. Securitizing of several specific cases apart from the above work as directed by top authority

COSTING SECTION

Information required for costing is obtained from systems through the report generated by MIS report includes closing stock, production, conception etc. The costing done here is process costing and prime costing is obtained.

The new variances that add to cost are identified and there costs are ascertained. This section prepares monthly / quarterly financial reports. In addition to those they also prepare variance reports, which show the deviation in quantity, and cost, which is used to check and regulate the consumption of such items.

LEDGER SECTION

This section is concerned with the maintaining of ledger accounts.

CASH SECTION

This section deals with all payment to be made to parties in the form of cash or Cheques. It further deals with the payment of the salaries and wages of the employees and workers.

Finance department undertakes the budget preparation for the organization. The budget is prepared considering the budgetary needs and requirements made by all departments and section. The budget proposals are put forward to the Board of Directors for sanction.

FINALIZATION OF ACCOUNTS

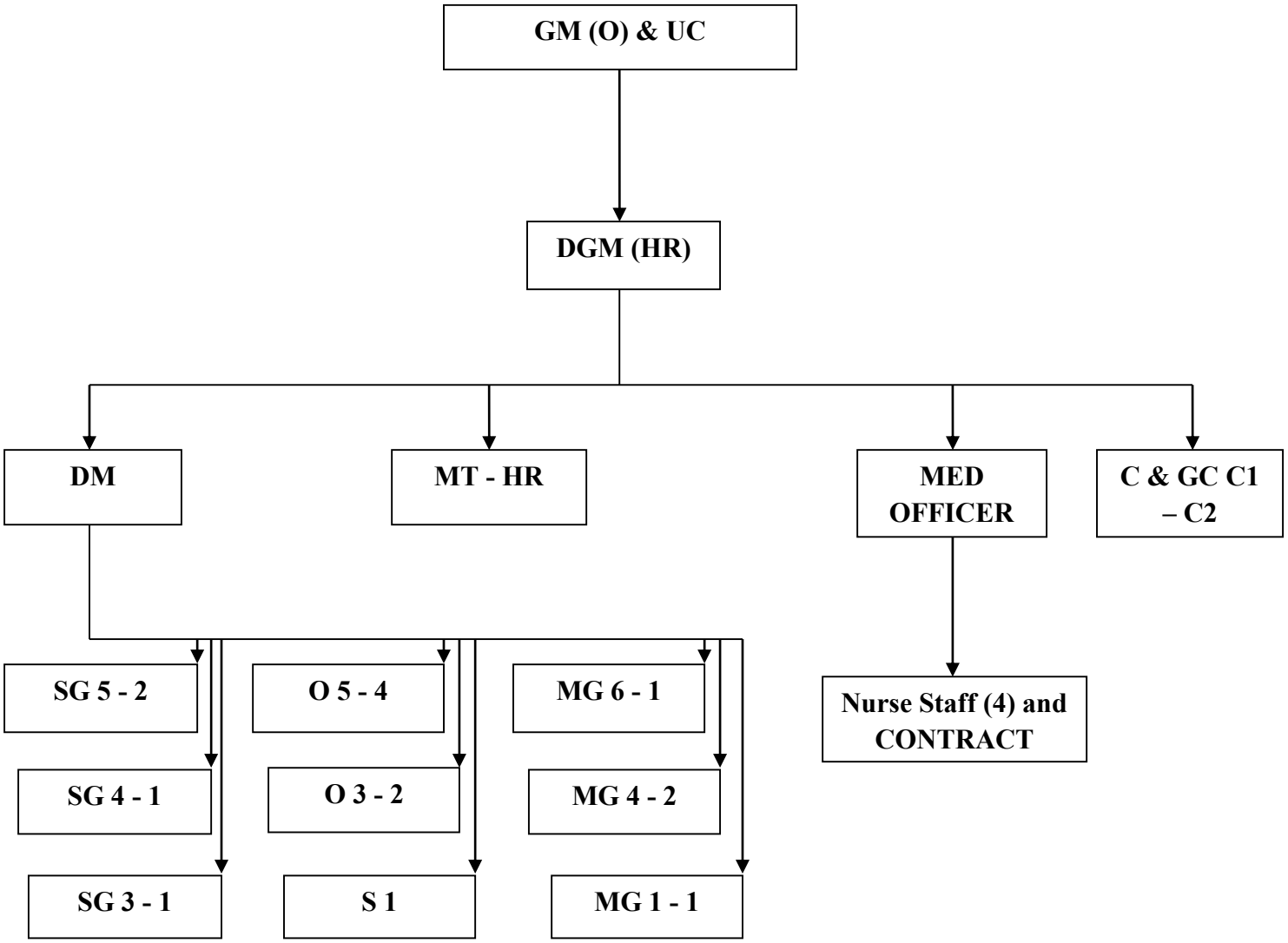
The section deals with preparation. Co-ordination & assists in the preparation of final accounts of the company. It is also used to assist the statutory auditors of the company.

WORKING CAPITAL

HLL Life Care Ltd. Kept 10 crore rupees as working capital. This amount is kept in State Bank of India. The amount will issue based on inventory, credit ratio etc.

HUMAN RESOURCE DEPARTMENT

Organization Diagram



The main functions are:

1. General Administration
2. Wages and Salary
3. Training and Development
4. Performance Management
5. Industrial Relations
6. Labor Welfare
7. Estate Management
8. Implementation of official language

I. GENERAL ADMINISTRATION

a) Time Keeping

HLL is a company that works around the clock and has 3 shifts:

i. 06:00 am – 02:00 pm
ii. 02:00 pm – 10:00 pm
iii. 10:00 pm – 06:00 am
iv. General shift 09:15 am – 05:15 pm

Time office maintains all attendance records of employee. An unauthorized absence is reported to appropriate section. It maintains records of any medical leave, compensatory leave, overtime offs, breaks more than half hour, on duty leave etc. It gives sufficient attendance list, which helps in wage calculation. Time offices use punching system for entry and exist of workers. Late attendance up to 15 minutes the concerned department should five a written consent to the employee because the punching system will cut off automatically after 15 minutes. Punching 2 cards by the same person is prohibited. The late minutes are added up for one month and are deducted from salary or wages, however 2 late purchases per month are allowed.

b) Employment Administration

- Maintaining details of agreed strength and actual strength
- Statistical data related to employees

- Sending report relating to the manpower
- Maintaining seniority list and roster position

c) Maintenance of Personal Records

HLL has got a prompt management information system, which feeds data every day, LAN helps the MIS to update data of every department regularly, and this helps the management to have a detailed data about personal records. MIS helps in knowing the demand and supply of labor and in creation of manpower plan. Maintenance of such records helps the personal department is new recruitment, promotions and internal transfer according to the need.

d) Contract Labor Management

- This includes registration and timely renewal of license
- Inviting tenders as per the requirement of the user department
- Certification of license, commencement / competition report
- Maintaining records & registration, annual returns as per contract labor Act

e) Administration of quality management system and OHSAS

f) Formulating HR policies and procedures

g) Issue office orders, notice and circulars

h) Administration of various schemes and agreement

II. WAGES AND SALARY ADMINISTRATION

- Pay fixation as per the long term settlement
- Annual increment
- Parity determination
- Gratuity and other retirement benefits

III. TRAINING AND DEVELOPMENT

HLL follows continuous training programs for employees for their effectiveness.

Training helps to increase the knowledge and skill of an employee for doing a particular job. Training and development in HLL is categorized into:

- Executive Development Program
- Supervisory Development Program
- Seniority
- Reservation list
- Performance appraisal
- Pay fixation and grade seniority list

IV. PERFORMACE MANAGEMENT

- Performance evaluation is done annually for workers, supervisors and executive separately.
- Factors affecting the key performance indicators of each job are identified and evaluated as per the importance.
- Each factors has five descriptions
- The evaluator selects the best one that describes the factor of performance of each employee
- The employees who get "excellent" rating on 2 continuous appraisals will be recommended for the fast track promotion and also if an employee gets "very poor" rating for two consecutive periods, he will be recommended for termination.

V. INDUSTRIAL RELATIONS

Industrial Relations (IR) as it is today all embracive and people involved. IR is also integral part of social, political and economic conditions prevailing the scope of present day. IR has widened and embraced functional interdependent complexities, involved not only matters to wages and allowances, grades, promotions, transfer etc. People tend to respond differently in different subjects even though issues are raised.

At HLL, employees are considered an asset and their value is appreciated through continued improvement. Its philosophy itself as "to relieve and trust our employees", so any grievances are met with utmost importance and necessary actions are taken. HLL is domestic in approach towards employee trade unions. A present HLL recognizes three employee trade unions:

1. HLL Life Care Ltd. Employees Union (CITU)
2. HLL Life Care Ltd. Workman Congress (INTUC)
3. HLL Life Care Ltd. Labor Union (AITUC)

All grievances handling procedures are handled through union only. Disciplinary procedures are also taken in consultation with unions. Unions are also mediating bodies of collective bargaining. Apart from there; union members do waste disposal, dispatch estate, cleaning and maintenance duties.

VI. WELFARE SECTION

In the case of HLL Life care Ltd; they have offered many employees welfare schemes that are provided to both salaried staffs and daily paid workers.

1. **Provident Fund Scheme –**
   PF will be deducted from all the employees at 12% of basic wages i.e. basic pay and DA per month.
2. **Employee State Insurance Scheme –**

Under this scheme, $1\frac{3}{4}$ % from the total wages of workers and $4\frac{3}{4}$ % from other employees are taken as insurance. For availing its benefits employees have to visit E.S.I dispensaries at respective places.

3. **HLL Welfare Fund –**

   For this scheme, Rs 2 is collected from the wages and salaries of all the employees of the organization.

4. **HLL Workers Relief and Welfare Fund –**

   Rs 1 are collected from all the employees' wages and salaries for this scheme.

5. **Bonus –**

   Usually the organization provides $21\frac{1}{2}$ % bonus to factory workers. Employees are also eligible for bonus. The bonus to employees is usually provided in a way of 3 month and 7 days salary, which is fixed by HLL relations committee (HLRC) 2010.

6. **Canteen –**

   Company provides canteen facilities to all employees. It is not fully subsidized. It provides breakfast, lunch, dinner and break time tea at Rs 70 /- per day. Canteen is based on basis of annual contract.

7. **Safety of Employees –**

   7.1 **Fencing of Machinery:** All dangerous and moving parts of machinery are securely fenced. Screws, bolts and teeth are completely encased to prevent danger.

   7.2 **Work on or near Machinery in motion:** Only a specially trained adult male worker does lubrication or other adjusting operation on the moving machinery.

   7.3 **Employment of young Person on Dangerous Machines:** No young person is allowed working on any dangerous machine (so prescribed by the state government) unless he is sufficiently trained or is working under the supervision of knowledgeable person.

   7.4 **Device for Cutting off Power:** Suitable device for cutting of power in emergencies are provided.

8. **Employee Insurance –**

   Employees are insured under the Employees State Insurance Scheme (ESI). ESI is a self-financing social security and health insurance scheme for Indian workers. For all regular employees earning less than Rs 15,000 /- per month salary, the employer contributes 4.75 % and employee contributes 1.75 %, total share 6.5 %.

9. **Recreation Club –**

   A recreation club for all employees provides all facilities for arts and sports. In every year, there was an annual program. Program includes entertainment programs, athletics, parties etc.

VII. TRADE UNION DETAILS AND FUNCTIONS

HLL has five important trade unions:

1. **Employee Association:** It is an independent union, but the majority of the members in it believe in the Marxist ideology.
2. **HLL Employee Union:** It is affiliated INTUC (Indian National Trade Union Counters)
3. **HLL Thozhilali Union:** It is an independent union, but majority of the members believed in the ideology of Muslim league. Now BMS (Bharatiya Majdoor Sangh) with them.
4. **HLL Staff and Workers Association:** It is affiliated to AITUC (All India Trade Union Counters). It is the only unrecognized union in HLL.

Purpose of Trade Unions –

- Employment protection and job creation
- Economic protection
- Social Status and identity
- Democratic institution
- Transformation
- Sustainable development

- Greater bargaining power
- Minimize discrimination
- Sense of security
- Sense of participation
- Platform for self expression
- Betterment of relationships

Specific Functions of Unions –

- Wages and salary bargaining
- Fight for continuous improvement in employee benefits
- Improving working conditions at work place
- Improving welfare, healthcare and recreation facilities as well as leisure at workplace
- Increasing rest periods, holidays, paid leave and time offs.

VIII. ESTATE MANAGEMENT

The internal & external mails, office memos, registered mails etc. are received in this section and corresponding entries are made in the dispatch register before sending them to the concerned parties. The General maintenance of HLL also comes under this section.

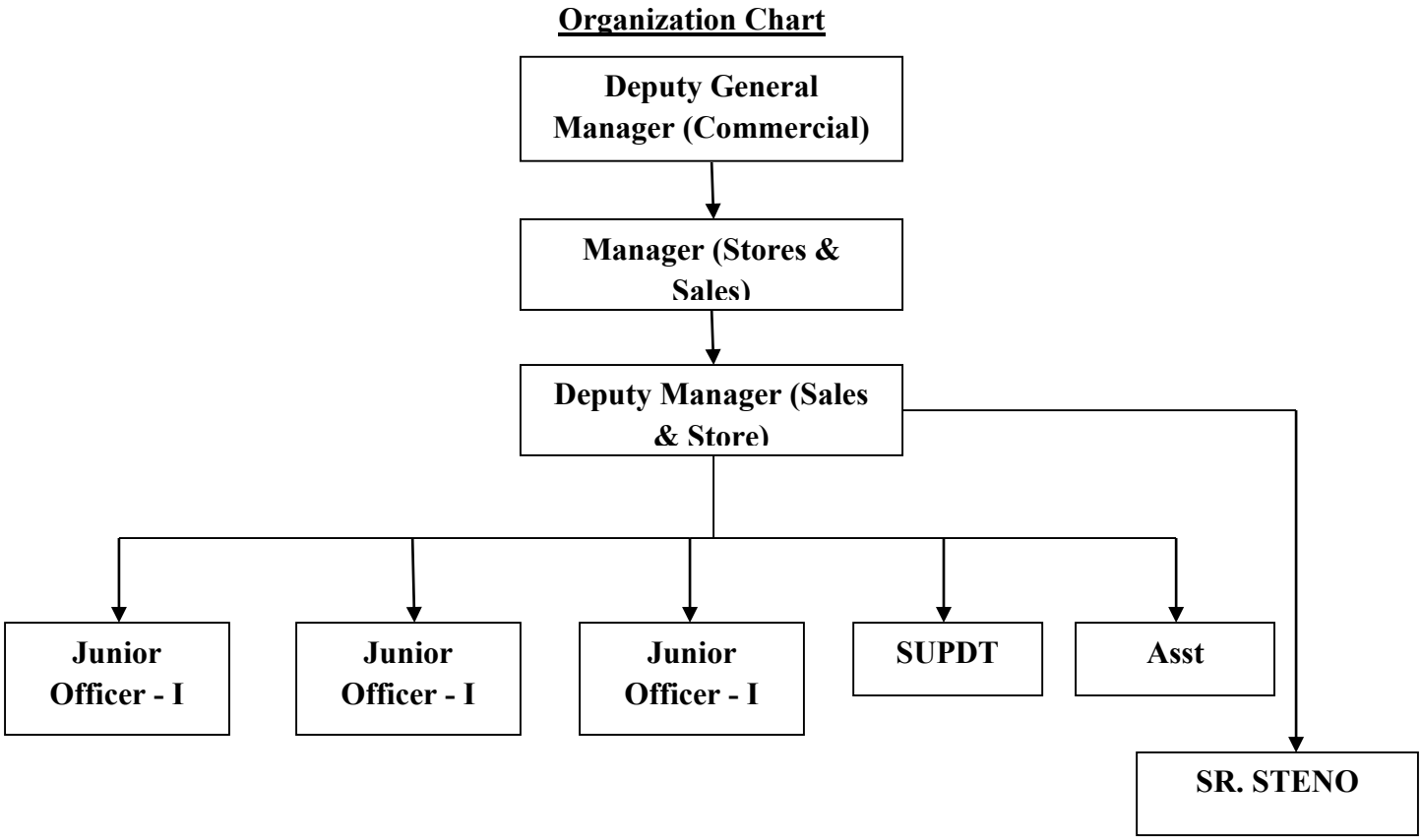
- Modification and maintenance of company premises
- Housekeeping of all sections / departments
- Waste Management

IX. OFFICIAL LANGUAGE IMPLEMENTATION

HLL Life Care Ltd has an efficient security system for safeguarding & preventing pilferage. The force has strength of more than 40. A superintendent of police is appointed as the security & vigilance officer.

Being a central government undertaking HLL is committed to promote the national language. The Hindi section under an assistant manager is responsible for this all orders and records are translated in Hindi. The library is also functioning under the personnel department.

SALES DEPARTMENT



Description: -

Dy GM - Deputy General Manager

Mgr - Manager

JO - Junior Officer

SR. STENO - Senior Steno

Purpose: -

Execute the supply orders issued from Government of India, Ministry of Health & Family Welfare and carryout execution of orders against domestic supply condoms as well as export condoms as advised from the HLL's marketing department.

Scope: -

In addition to the above main task, sales department arrange for the disposal of no conforming products and sales of miscellaneous scraps like metal scrap. Foil waste, card board waste, plastic waste, empty barrels etc. after complying necessary formalities with regard to the scale of these items.

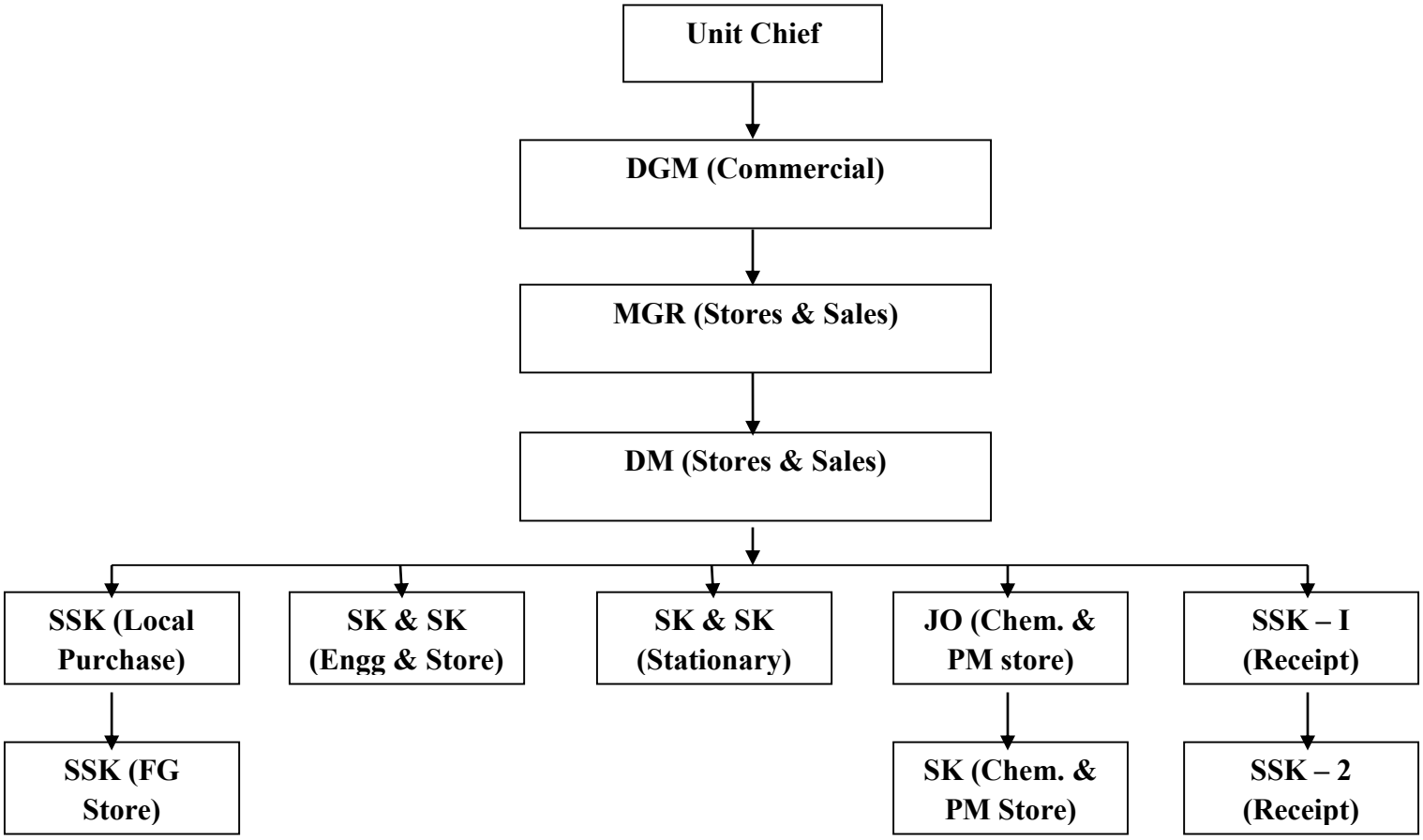
Responsibility: -

MGR (stores, sales) here in after referred as controlling officers of sales, senior assistant manager under the guidance of the deputy manager is responsible for the implementation of this procedure. The orders are placed in the following details.

- Orders Number and Date
- A/C no and Date
- Item Distribution
- Quality order
- Unit
- Rate per Unit
- Total cost price
- Address of consignee
- Date of delivery to each consignee
- Details of inspecting authority
- Terms of delivery
- Mode of delivery

STORES DEPARTMENT

Organization Chart



Description:

GM	-	General Manager
DGM	-	Deputy General Manager
MGR	-	Manager
SSK	-	Senior Store Keeper
SK	-	Store Keeper
JO	-	Junior Officer
FG Store	-	Finished Goods Store
PM Store	-	Packing Material Store

HLL consists of 5 sections:

1) Receipt store
2) Chemical & packing material store
3) Engineering store
4) Stationary store
5) Finished goods store

1) **Receipt Store**

All purchased goods arrive at the receipt store. Inward register book is maintained and MAN (Material Arrival Note) is issued. Then the testing department issues MRR (Material Receipt Report) if the goods are accepted of MRN (Material Rejection Note) if materials are rejected.

2) Chemical Store

Here the latex, chemical and packing materials are stored.

3) Engineering Store

All engineering goods are stored here.

4) Stationary Store

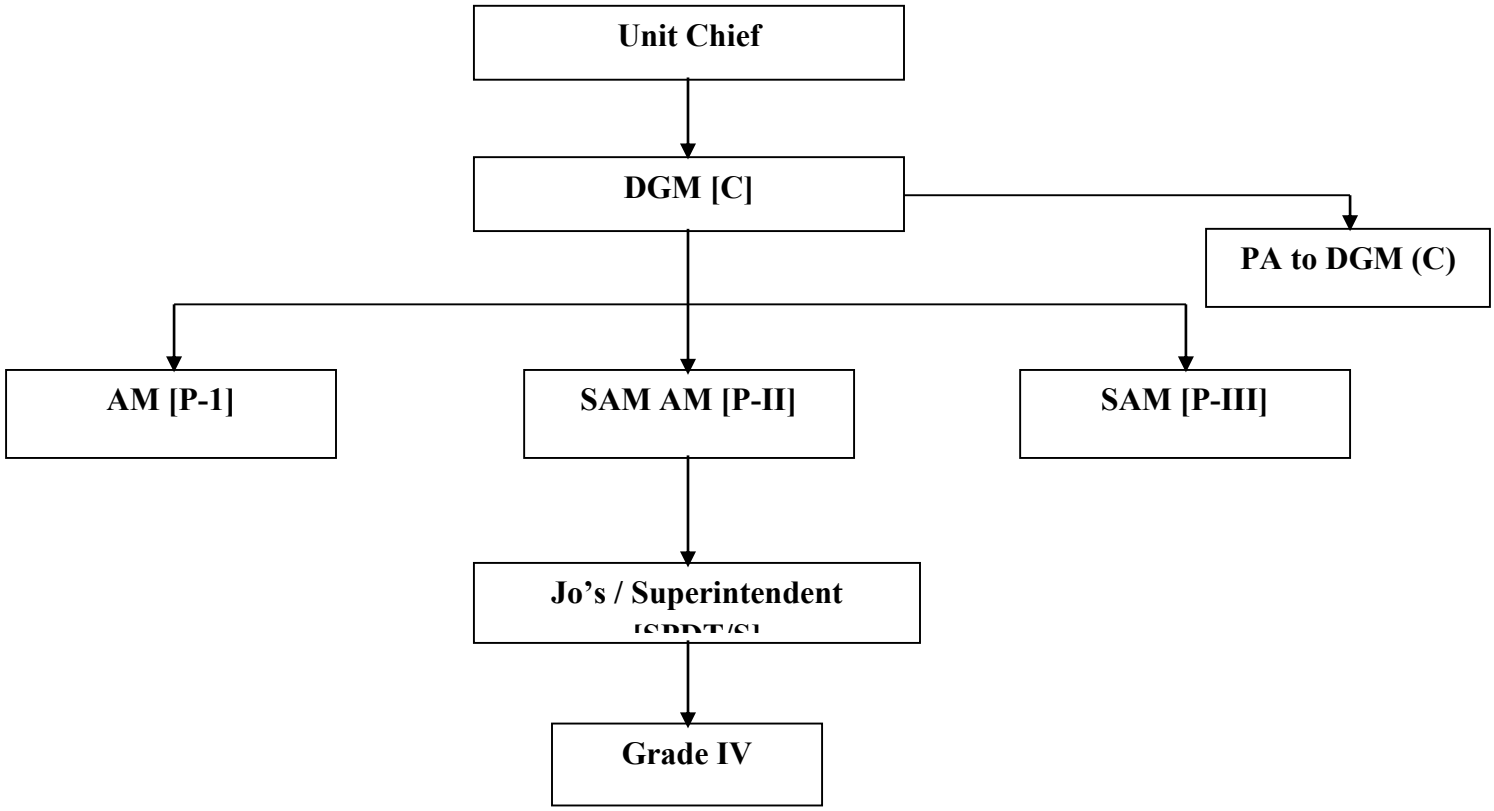
The stationary goods are stored here. All those stores are computerized and issue material on receipt of intent or material requisition from used department. The store is based FIFO system i.e. first in first out. The items that are coming first are to be dispatched first. ABC analysis is used in the store.

5) Finished Goods Store

Finished goods are stored in the department as custodian or finished goods.

PURCHASE DEPARTMENT

Organization Chart



Description:-

DGM: Deputy General Manager
SAM: Senior Assistant Manager
PA: Personal Assistant
JO: Junior Officer
AM: Assistant Manager
SPDT's: Superintendent

Objectives

The objective is to ensure that materials and services are made available to have uninterrupted production and packing as per plan.

Purchase department is called up on to purchase the right type of goods at the right time, from the right suppliers and at the right price. The machineries, tools, raw-materials, packing material,

sanitary items etc which is required for the operation in the factory are brought by the purchase department as and what required. Therefore the deputy manager has to deal with the procurement of raw materials, packing materials etc.

Purpose: - To give introduction and describe the objective with regards to the functions of purchase department.

There are two tenders:

1. Open Tenders
2. Limited Tenders

1) **Open Tenders**: -

Value is exceeding 30 lakhs in the case of consumable and recording expenditure and value exceeding Rs 50 lakh in case of capital goods / works. Tenders are floated in reading news paper / website.
The purchase function includes:-

a) Source Identification
b) Source Selection

Source identification involves the identification of suppliers looking into past experience, trade journals etc.

Source selection is determined by obtaining the desired quality price and service.

The other functions are:

i) Maintain continuity in respect of supply of materials to support the production schedule and the co-operations.
ii) Doing the above with the minimum investment consistent with the economic advantage.
iii) Avoiding duplication wastage and obsolescence with respect to materials.
iv) Developing goods and reliable relationship with the suppliers.
v) Procuring material at the lowest cost consistent with the quality.
vi) Maintaining standards in quality of materials based on suitability for use.

2) **Limited Tenders**:

Limited Tenders are floated in the following cases:-

i) For consumable items whose total value is less than Rs.3000000/-

ii) Capital goods/work contracts whose value is below Rs.5000000/-. Limited tenders have only price bid.

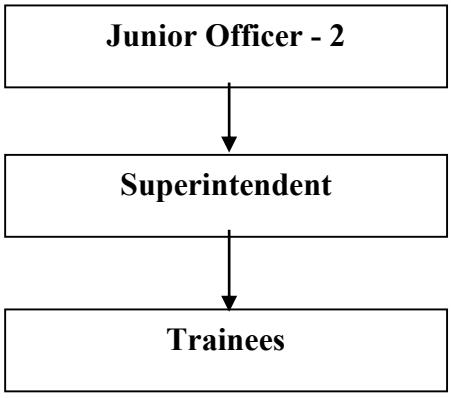
Suppliers Rating

Done based on the following:-

1. Quality of the product
2. Functional performance
3. Adherence to delivery schedule

INFORMATION TECHNOLOGY DEPARTMENT

Organization Chart



This department provides the resulting service and support for hardware, networking and security services required for the company. The support includes the development/ maintenance of various software services like eIMIS, Intranet site mailing service, Website etc. The eIMIS is a software application developed for the organization having modules for production, purchase, store, sales, marketing, finance and engineering.

Software support includes development/maintenance of various software applications like:-

1) INTERNET
2) MAILING SERVICE (WAN)
3) COMPANY WEBSITE
4) EIMS (Enhanced Integrated Management Information System)

1) INTERNET

It is the network connection between the entire computer of the Peroorkada factory for data and resource sharing.

2) MAILING SERVICE

The WAN (Wide Area Network) is the network of all computer of Hindustan Latex Limited (HLL) worldwide. Internet connection is provided from BSNL.

3) COMPANY WEBSITE

The company website opened in 2000 (www.hindlatex.com)

4) EIMIS (Enhanced Integrated Management Information System)

EIMIS has developed in 1997. It makes the daily operations smooth and fast. It certain records of attendance, employee salary, leave details etc.

EMIS is customized application with ORACLE database. 10G form EIMIS maintains all the data for functioning of production on QC. Finance ETD, Store, purchase etc. Internet connects the networks with in the organization. The WAN (Wide Area Network) connects all the function and officers of HLL across the world. Company website provides in information about the organization for the public. Operating system Linux is used in HLL. It is graphical user interface.

For communication purpose HLL is suing IP (Internet Protocol) phones and messaging purpose IP messenger is used.

COUNSELING AND GUIDANCE CENTRE

Counseling and guidance center was started in Peroorkada Factory (PFT) in the year 2005. It has completed its third year of service. During the 3 years, it has extended its wings to confidently take up and organize newer initiation with a view to enhance its wings to confidently take up and organize newer initiation with a view to enhancing the physical, mental and psychological aspects of health. The counseling center functions with 2 full time social workers & a consultant psychologist.

Mission

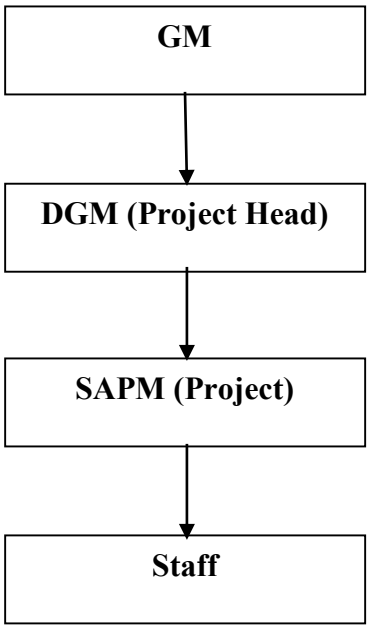
To promote lifelong learning, build cooperative working relationship for a satisfying personal and professional development.

The individual counseling is done and the activities are as followed:-

1. Counseling & Guidance
2. Mukha Mukham
   - Awareness on legal rights of women at work place
   - Awarness on Chikungunya as well as other viral fevers
   - Awareness and screening of diabetic retinopathy
   - Financial Management
3. Summer Camp for employee children
4. Kudumba Sangamam
5. Sayahna Sangamam
6. Observance of World Mental Health Day
7. Short term spoken English Courses
8. Skin care & medical camps
9. Observance of World AIDS Day
10. Alcoholic de addiction

PROJECT DEPARTMENT

Organization Chart



Description:

GM	-	General Manager
DGM	-	Deputy General Manager
SAPM	-	Senior Assistant Plant manager

The main function of project department is implementation of major projects of HLL. The software is used in this department is Ms Project. The activities of this department are as follows:

1. Understanding the requirements
2. Preparing the project proposal based on the requirement
3. Project cost estimation and feasibility study
4. Project report
5. Approvals from the authority
6. Implementation of the project
7. Project completion

LITERATURE REVIEW

INTRODUCTION

Total Quality Management is a management approach that originated in the 1950s and has steadily become more popular since the early 1980s. Total Quality is a description of the culture, attitude and organization of a company that strives to provide customers with products and services that satisfy their needs. The culture requires quality in all aspects of the company's operations, with processes being done right the first time and defects and waste eradicated from operations.

Total Quality Management, TQM, is a method by which management and employees can become involved in the continuous improvement of the production of goods and services. It is a combination of quality and management tools aimed at increasing business and reducing losses due to wasteful practices.

Some of the companies who have implemented TQM include Ford Motor Company, Phillips Semiconductor, SGL Carbon, Motorola and Toyota Motor Company.

Total Quality Management (TQM) is a strategy that embodies the belief that the management process must focus on integrating the customer – driven quality throughout an organization (Stah, 2002). It stresses continuous improvement of product quality and service delivery while taking into cognizance the reality that in order to achieve this goal, employee relations needs to be equally addressed, as the customer cannot get the satisfactory service delivery from ill-motivated employees (Lewis, 2004)

The philosophy underlying the implementation of a TQM strategy is to see organizational customers and clients as the vital key to organizational success. Organizations with TQM strategy see their business through the eyes of their customers and clients and then measure their organizations performance against customer/client expectations (Fran, 2002). It therefore follows that organizations that want to be successful with the implementation of TQM strategy must evaluate its operations through the eyes of its customers b y strengthening and exploring all avenues including the people (employees) that make up the organizational structure (Stah,2002).

According to Balogun and Hope-Hailey (2008), strategy should be seen as a system/process, that should be able to engender in the employees a culture of total commitment to the vision and mission of the organization, and thus, a functional strategy that embodies the collective contribution of various components that make up the organizational hierarchy should be such that compliment each other in the implementation of a strategy. For a strategy to accomplish the desired goals and objectives of an organization, effective strategy implementation mechanisms should be put in place and one of the most potent ways for achieving this is by exploiting the

internal capabilities of the organization in the form of its employees as a veritable asset while encompassing various HRM initiatives, such as recruitment and selection, training and development, reward systems, performance appraisal, the need for enhanced employee voice systems , employee engagement and greater line manager involvement with management ,because they should be seen as a bridge between the employees and management for enhanced psychological contract, which will in turn facilitate greater employee commitment (Murphy et al, 2001).

Quality products or services need not only to conform to consumer's requirements; the product/service must be acceptable. Effective TQM strategy entails that the product/service must go beyond acceptability for a given price range. For example, rather leaving customers/clients satisfied that nothing went wrong with the product or service, a product/service should give the customers/clients some delightful surprises, or provide unexpected benefits (Collard, 2001). This means, therefore, that product/service quality assurance requires more than just meeting customers/clients minimum standards. The level of product quality is the degree, to which a product/service is equal to or greater than customers/clients expectations,

That is LPQ > CE

Where LPQ = Level of Product Quality, and CE = customer/client expectation.

Thus, for organizations that desire to have TQM strategy in place and make it work effectively, should as a matter of principle endeavor to be positively disposed to the idea of quality management philosophy in their organization. According to Haigh and Morris (2002), quality management is an ingredient towards adequate quality delivery to customers. Quality management involves: management systems, delivery, quality, cost, technology and of course the employees, because according to Donaldson, (2001), no matter how perfect a strategy might be, it depends on people for implementation. All these various components of quality management when effectively harnessed will result in customer satisfaction; where the intention is not to stop at a point in the process of implementation, but rather a continuous improvement of the mechanism for a sustainable competitive advantage (SCA), through the use of employees as organizations effective internal assets for a successful implementation (Haigh and Morris, 2002). This can be further understood with the diagram below

People - Dedication and commitment from the employees, by means of well-established voice systems and employee engagement.

- Adequate tools to do the work effectively and efficiently, an enabling environment, and training.
- Team approach to management policies and procedures for strategic implementation.

Quality - No compromise alternative when aiming at quality because the outcome will definitely tell, 'the customer knows it when he sees it'

Delivery - Customers should be able to receive products/service, when they want it.

Management systems

- Understanding variation and effective development of human resource capacity utilization.
- Constancy of purpose and direction
- Preventing error margin rather than detecting errors in quality delivery
- Pride of workmanship
- Problem solving

Technology

- This involves research and continuous development in terms of product/service design.
- Up to date with contemporary manufacturing and service capabilities.

Cost

- Efficient and competitive production system for good products/services
- Continuous cost improvement for the benefit of the customers (customer loyalty) as well as other associated costs like overhead costs associated with running the organization.

Thus, from the foregoing, a number of issues can be associated with the implementation of an effective TQM strategy, but as stated by Stanford, (2005) succour lies in the ability of managers to adhere to these under mentioned twelve elements:

- Quality awareness
- Effective management leadership style
- Organizing for quality improvement
- Creating a participative environment by means of employee involvement and participation and employee engagement.
- Problem prevention and solving.
- Training for quality improvement
- Involvement of every function (e.g. front line leaders) at levels
- Customer (employees as internal customers) and supplier involvement within and around the organization.
- Measurement of Quality performance
- Continuous appraisal of measurement system for sustainability.
- Recognition for achievement/excellence.
- Continuous improvement.

Although all these twelve elements may seem too tasking at the beginning, a committed manager will appreciate how mutually important and inter-related all these elements and their recognition is vital for a successful implementation of TQM strategy.

Various proponents of TQM strategy see it from different angles, right from the early works of Crosby (1979,1984,1989), Deming (1986,1994), Feigenbaum (1991), Juran (1988), Juran and Gryna (1993) and Ishikawa (1985), but central to their beliefs and working methods, is providing quality delivery through people .TQM begins with education and ends with education, and so

crucial is the role of the employee in seeing to its successful implementation, because, when employees are aware of what is required of them in the process through effective voice system and engagement, they become highly motivated and committed to its actualization, (Dale, 1994). TQM should go farther than production operations/activities and involve every employee in the organization. More often than not, companies that have failed in the implementation of TQM strategy fail not because they desire to fail in strategy implementation but rather, because of the emphasis laid at the door step of the 'hard' aspect of the organization such as costs and production performance, thus living little or no significant room for the 'soft' people centered values of an organization which encompasses employee involvement, participation, commitment and engagement (Slerming, 2007).

For TQM to be effective, managers have to take into proper perspective the relevance of the workforce that make up the organizational structure, as no organization exists to carry out business operations/activities without employees (Carol et al.2006). People are the effective tools management can readily use in transforming /implementing strategic choices (Edwards, 2005) and as Guest (1987) puts it "because they are the most variable, and the least easy to understand and control of all management resources, effective utilization of human resources is likely to give organizations a significant competitive advantage. The human resources dimension must therefore be fully integrated into the strategic planning process".

The above quote by Guest (1987) is aptly correct and relevant, if organizations are to attain the goals and objectives required of them, so as to justify the huge financial commitment by owners of business like the investors (shareholders) and even joint stakeholders in the operations of the business, for example the suppliers, regulators, customers, employees and communities they operate, because apart from justifying what is expected of them, TQM as a strategy allows and build in the employees the following:

- A decentralization of decision-making responsibility to well trained problem solving labor force, that is, it provides an avenue for the employees of an organization to participate in decision- making about how the business operates, and this can further improve relationships, develop trust and confidence as well as facilitate co-operative activity (Druker, 2008).
- Methodologically improving the quality of all organizational processes and strategies from an internal and external customer perspective, because with TQM, it helps with building collective responsibility, aid personal development and build confidence, develop problem solving skills and also facilitate employees awareness of quality improvement potential, leading to behavioral and attitudinal changes (Farnham, 2000).
- A combined emphasis on both incremental continuous total quality improvement and break through strategies, because TQM as a strategy encourages the employees to improve operating effectiveness as employees work in a common direction and thus, foster a change in management style and culture (Fullan, 2003).
- A reasonable focus on the customer, both in setting strategic objectives and in building organizational routines that link as many units and levels in the firms as possible to identifying and meeting customer needs, wants, desires and expectations, and this can

only be achievable with the enhancement of employees morale within and around the organization, (Simons, 2000).

- A linkage of reward and measurement systems, both formal and informal, to support these new directions, because TQM builds in the employee the ability to solve problems to be able to align his/her personal needs, wants and desires with that of the organization (Green et al, 2003).

TQM Defined

TQM is a management philosophy that seeks to integrate all organizational functions (marketing, finance, design, engineering, and production, customer service, etc.) to focus on meeting customer needs and organizational objectives.

TQM views an organization as a collection of processes. It maintains that organizations must strive to continuously improve these processes by incorporating the knowledge and experiences of workers. The simple objective of TQM is "Do the right things, right the first time, every time." TQM is infinitely variable and adaptable. Although originally applied to manufacturing operations, and for a number of years only used in that area, TQM is now becoming recognized as a generic management tool, just as applicable in service and public sector organizations. There are a number of evolutionary strands, with different sectors creating their own versions from the common ancestor. TQM is the foundation for activities, which include:

- Commitment by senior management and all employees
- Meeting customer requirements
- Reducing development cycle times
- Just in time/demand flow manufacturing
- Improvement teams
- Reducing product and service costs
- Systems to facilitate improvement
- Line management ownership
- Employee involvement and empowerment
- Recognition and celebration
- Challenging quantified goals and benchmarking
- Focus on processes / improvement plans

- Specific incorporation in strategic planning

This shows that TQM must be practiced in all activities, by all personnel, in manufacturing, marketing, engineering, R&D, sales, purchasing, HR, etc.

Today the concept of Quality Management has been widely accepted all over the world. Several philosophers/researchers and Gurus lead this concept. Contributors in the quality management have realized need of modern industry in its true spirits and dimensions. Pioneers or contributors of quality have either originated new ideas or modified, expanded old ideas and propounded significance for the benefits of industry and society at large. It is important to take note of renowned pioneers in the quality management, with their philosophy and concepts. Therefore, this paper is prepared with the objectives to introduce quality management philosophers and their contribution. Contributions of some of the pioneers in quality management are given below.

1. Dr. WALTER ANDREW SHEWHART (1924)

Dr. Shewhart had given a diagram, in 1924, which pave new way in manufacturing and quality control. He framed the problem in terms of assignable-cause and chance-cause variation and introduced the control chart as a tool for distinguishing between the two. Workers or technicians have to collect samples from production process at regular intervals and plot the results on a chart. Dr. Shewhart introduced mathematical formula and established boundaries of variation of process; within control. Samples out of boundaries of control chart signal a problem or variation. Dr. Shewhart became the first to understand, use and apply the principles of probability and statistics. He gave birth to quality movement with theoretical approach. Therefore, he is known as the father of statistical quality control. He made differences between acceptable and unacceptable variation and defined the problem of managing quality, common causes or variation, related to process control. In 1930's Shewhart's quality Control Methods were accepted in defense industry. His famous books are: A Study of the Accelerated Motion of Small Drops through a Viscous Medium (1917), Economic Control of Quality of Manufactured Product (1931), and statistical Method from the Viewpoint of Quality Control (1939). It is said that the 'Deming's Wheel' or Deming's Circle was originally developed by Dr. Shewhart and adapted by Dr. Deming which is most popular in the business world for problem solving.

2. Dr. WILLIAM EDWARDS DEMING. (1930)

Dr. Deming graduated in 1921 in Engineering; post graduated in Mathematics and Physics and got Ph.D. in 1924. In 1940, he developed sampling techniques, which were used for conducting census in USA. He was also head mathematician and adviser in sampling at the US Bureau of Census. His methods were accepted for better quality products, a higher volume of production, reduction in scrap and rework. First time he arrived in Japan in 1947 to help General Mac Arthur's Government. Three years later in 1950, he had been invited by JUSE (Japanese Union of Scientists and Engineers) to deliver lecture on statistical methods about quality and productivity.

Dr. Deming's teachings about statistical approaches, decision making upon facts, and the need for simplification had a profound impact on the Japanese. Dr. Deming's philosophy is based on improving products and services by reducing uncertainty and variability in the decision of manufacturing processes. He says variation is the chief culprit of poor quality, further he states that 94% of all quality problems are down to management. Therefore, he requires change in managers. He considers quality as a job of management. He advocates that higher quality leads to higher productivity, which in turn leads to long-term competitive strength.

Deming's 14 points for quality Management:

1. Create constancy of purpose towards the improvement of product and Services in order to become competitive, stay in business, and provide jobs.

2. Adopt the new philosophy for the new economic age and awake the challenges, learn the responsibilities and take on leadership for change.

3. Stop depending on inspection to achieve quality by building quality into the product.

4. Stop practice of awarding business on the basis of low bids and move towards single suppliers on a long term relationship of loyalty and trust.

5. Improve constantly in the system of production and services to improve quality and productivity.

6. Institute modern methods of on-the-job training at all levels.

7. Adopt and institute modern methods of leadership and supervision to help people and technology work better.

8. Drive out fear, so that everyone can work effectively for the company.

9. Break down barriers between individuals and departments so that people can work as a team.

10. Eliminate exhortation, goals, slogans, and targets for the workforce, as they are advisory and any way they create adversarial relationship.

11. Eliminate quotas, work in numerical standards and management by objectives, leadership should be substituted instead.

12. Remove barriers that rob employees of their pride of workmanship and abolish performance.

13. Institute and encourage for education and retraining for self-improvement.

14. Structure Top Management to empower them to achieve above 13 points. Put everyone in the company to work to accomplish the transformation.

The Deming Cycle and ISO-9000:

The Deming cycle is accepted in ISO-9000 series, which includes following.

1. Conduct consumer research and use it in planning the product (Plan).

2. Production of Goods / Product (Do).

3. Check the product, which is as per schedule (Check).

4. Marketing the product (Act).

5. Analyze how the product is received in the marketplace in terms of quality, cost and other criteria (Analyze)

Plan

Analyze Do

The

Deming

Cycle

Act Check

Dr. Deming proposed a new thinking stressing on improving quality in manufacturing

through the use of statistical quality control techniques. After accepting his philosophy, related to quality, and considering him as the father of Japanese Quality revolution, to honor his contribution in quality, Japanese Govt. introduced "The Deming Award" in 1951, to encourage companies for quality improvement. He published eight technical books and 161 research papers.

He was working till the age of 93, and died on 20th December 1993.

3. Dr. JOSEPH MOSES JURAN (1937)

Dr. J M Juran born in Balkan, USA. He graduated in both Engineering and Law. From the year 1924 he worked as engineer, industrial executive, government administrator, university professor, impartial labor arbitrator, corporate director and management consultant. He is the founder and Chairman of his quality consultancy business, the Juran Institute. He is considered to be one of the early leaders in the field of 'quality'. Principles provoked by him towards quality are in a specified way and accepted at global level. Dr. Juran written books on quality namely: Quality Control Handbook, Quality Planning and Analysis, Managerial Break through, Juran on Quality Planning, Juran on Leadership for quality, Juran on Quality Improvement, Upper Management and Quality and The Corporate Director. Dr. Juran specifies a detailed program for quality improvement process which involves proving the need for improvement, identifying specific projects, organizing to guide the projects, diagnosing the causes, providing remedies, proving that remedies are effective and providing control to hold improvements.

The Juran Trilogy:

Dr. Juran communicates his message to managers through following three basic quality related processes.

1. Quality Planning – It includes identifying the customers' needs and expectations, designing products and services, setting goals, providing training, implementation of projects, reporting, recognizing, and communicating results and improvements in systems.

2. Quality Control – It involves, establishing standards, identifying measurements and methods thereof, comparing results with actual standards and interpreting the differences and taking action on differences.

3. Quality Improvement – It includes use of structured annual improvements projects and plans, need of improvement, organizing to guide the projects, diagnosing the causes, providing and proving remedies and establishing control to maintain gains made.

Juran's Ten Steps in Quality Management/

Improvement:

1. Create and build awareness of the need and opportunity for improvement.

2. Setting goals for continuous improvement.

3. Organize to meet the goals by establishing quality

Councils, identifying problems, selecting project, appointing teams and choosing facilitators.

4. Provide everyone training.

5. Implementing projects to solve problems.

6. Report progress.

7. Give recognition.

8. Communicate results.

9. Keep a record of successes.

10. Incorporate annual improvements into the Company's regular systems, and thereby maintain momentum.

Juran's philosophy of quality management is designed to fit into a company's current strategic business planning with minimal risk of rejection. His theory emphasizes on building quality improvement systems. He espoused the Pareto Principle. In 1981, he was awarded Japan's highest honor for foreigners, "The Second Class Order of the Scared Treasure by Japanese Emperor, for development of quality control and the facilitation of US and Japanese friendship". Juran favors the concept of quality circles because they improve communication between management and labor. Furthermore, he recommends the use of statistical process control, but does believe that quality is not free. He explains that within the law of diminishing returns, quality will optimize and beyond that point conformance is more costly than the value of the quality obtained.

4. Prof. KAORU ISHIKAWA (1943).

Prof. Ishikawa is major contributor, to the Japanese theory of quality management. He graduated in 1939, in the subject of Applied Chemistry. He has invented 'Fishbone Diagram' which is known as 'Ishikawa's Diagram' in1943; a tool, to analysis of industrial process and solve management problems. Quality improvement teams use this worldwide. He is known as the 'Father of Quality Circles'. The Quality circles were launched first time in Nippon Telegraph and Cable Company in the year 1963. He translated, integrated and expanded the management concepts of W. Edwards Deming and Joseph M. Juran into the Japanese system.

Prof. Ishikawa wrote books on quality known as Introduction to Quality Control, Japanese Guide to Quality Control and What is Total Quality Control? The Japanese Way. Ishikawa proposed seven basic tools to tackle and solve problems of quality are Pareto Analysis, Fishbone diagrams, Stratification, Tally Charts, Histograms, Scatter Diagrams and Control Charts.

Principles proposed by Prof. Ishikawa.

1. The next process is your customer.

2. Apply consumer orientations – think from the standpoint of the other party.

3. Quality is company wide issue and must be an all pervasive influence on the way every aspect of business is conducted.

4. Improvement till existence of company.

5. Use of seven tools.

6. Use facts and data to take decision and make presentation.

7. Respect human beings and encourage management through quality control circle activities.

8. Combine knowledge with action as a discipline.

5. Dr. GENICHI TAGUCHI (1955)

Dr. Taguchi was born in Japan and completed his graduation in the subject of Mechanical Engineering and obtained Ph.D. in the year 1962. He attended Dr. Deming's lectures on Statistical Quality Control and became Professor in Quality in Princeton University in 1963. Thereafter he joined Aoyoma Gakuin University in the year 1968. He was Director of Academy of Quality from the year 1978 to 1983.

As per opinion of Dr. Taguchi, it is necessary to consider costs to the society along with the manufacturing, after sales services and other costs. He says that quality control is concerned with social loss that product may cause through its intrinsic function. His contribution is related to quality thinking. It focuses on attention on the original design phase of product on service. He says that there are two causes for variations in products i.e. design characteristics and 'noise'. He developed On-line and Off-line quality control. Off-line quality control is related to design process mainly known as 'design of experiments'. His popular books are: Quality Engineering, Introduction to Quality Engineering, On-line Quality Control, Off-line Quality Control and Quality Engineering in Production system.

Dr. Taguchi's 8 Point formulas:

1. Identify the main function side effects and failure modes.

2. Identify noise factors and testing conditions for evaluating quality loss.

3. Identify the quality characteristics to be observed and the objective function to be optimized.

4. Identify the control factors and their alternate levels.

5. Design the matrix experiments and define the data analysis procedure

6. Conduct the matrix experiment.

7. Analyze the data, determine optimum levels for the control factors and predict performance under these levels.

8. Conduct the verification experiment and plan for future actions.

Dr. Taguchi was Consultant at International Level in quality control and assurance. Deming Prize has awarded him in 1960 and in 1989 he received Purple Ribbon Award from the Emperor of Japan for his contribution in quality control and Japanese Standards.

6. Dr. ARMAND VALLIN FEIGENBAUM. (1961)

Dr. Feigenbaum devised the concept of Total Quality Control and is one of the pioneers in the total quality management. He worked at General Electric as head of quality. He has written an article on total quality control in May 1957 and published a book on the same in 1961 i.e. 'Total Quality Control: Engineering and Management'. Many Quality Managers consider this book as "Bible". His contribution is concerned with technical aspect of quality control and makes a focus of quality control as a business method, including administrative and human relation functions. "According to Feigenbaum, the quality professional has a significant leadership role in quality improvement to identify it, to make it clear and to help others achieve it, because quality is everybody's job". Further he says that quality should be considered at all stages of the process, not only in manufacturing activities. He concentrated on three principles on TQM are: Focus on the customer, participation and teamwork and continual improvement.

Feigenbaum's 10 points on Total Quality Management:

1. Quality is awareness programme not only a technical function.

2. Quality is not what an engineer or marketer says but it is that what the customer says.

3. Quality and cost are a sum, not differences.

4. Quality must be organized to recognize everybody's job in the organization

5. Quality is a way of managing an organization. Good management means continuous emphasis on the quality.

6. The quality improvement emphasis must take place throughout all activities of the organization.

7. Quality is achieved through help and participation of each and every person related to the organization. It is also an ethic.

8. Continuous quality improvement requires wide

range of new and existing quality technology of information applications.

9. Total quality programme approach leads to productivity and is most effective and less capital intensive.

10. Quality comes, if it is clear, customer oriented, effective and structured.

7. PHILIP BAYARD CROSBY (1965)

Philip Crosby started his career from the year 1952 as Inspector then Tester to Assistant, Foreman to Jr. Engineer to Section Chief. He started to work as department head at Martin-Marietta, Missile Building Company, Orlando Florida (USA) in 1959. Thereafter he became a corporate executive in ITT (International Telephone and Telegraph) New York, in the year 1965, and working there till 1979. In the year 1979 he started his own 'Philip Crosby Associates' an International Consulting firm on quality improvement. He is the pioneer of 'Zero Defects'. Crosby differentiates with Dr. Deming and Dr. Juran, citing his zero defects goal as something practical, reasonable and achievable. His popular books related to quality are: Quality is free, Quality Without Tears, Running Things, The Internally Successful Organization, Leading: The art of becoming of Executive and Let's Talk Quality – 96 Questions.

Crosby's 14 steps to Quality Improvement:

1. Management Commitment: Clarify Management's stand and strategies on quality for the long term.

2. Quality Improvement Team: formation of cross departmental terms to initiate, run and monitor the quality improvement programme.

3. Quality Measurement: identifying existing and potential problems in a manner that permits objective evaluation and corrective action.

4. Cost of Quality: assessing and defining the quality as a management tool.

5. Quality Awareness: raising the quality awareness and personal commitment of all employees.

6. Corrective Action: applying systematic method to correct problems identified.

7. Zero Defect Planning: establishing Zero Defects programming to evaluate various activities.

8. Supervisors' Training: train superiors in order to carry out their performance and responsibilities in quality improvement programme.

9. Zero Defect Day: observing Zero Defect Day to create realization that all employees are aware and there is a new direction.

10. Goal Setting: encouraging employees for accomplishment of personal and team goals for quality improvement.

11. Error Cause Removal: encouraging individual employee to communicate the management about obstacles facing by them while attaining their goals.

12. Recognition: appreciation of employees for quality improvements.

13. Quality Councils: implementation of quality Councils for planning and to promote continual communication.

14. Do it Over Again: emphasizing that quality improvement is a never ending process.

8. WILLIAM E. CONWAY (1970)

William E. Conway was born in 1949 and graduated from a United States Naval Academy. After working in U.S.Naval for the period of five years, he joined in Eastman Kodak as an Industrial Engineer. In 1979 he became President and Chief Executive Officer in Nashua Corporation, New Hampshire, and called up Dr. Deming for setting the total quality programme and after three years while following programme, he became an Independent Consultant in quality management. His contribution is recognized and he has been awarded by "Edward Medal" by the American Society for quality Control".

William Conway recommended six tools for continuous improvements in quality.

1. Human Relation skills: Management should give training to all employees and motivate them to improve the quality at all areas of operations.

2. Statistical Surveys: Necessary data should be collected relating to task and providing a benchmark to measure improvements.

3. Statistical Techniques – Statistical techniques like charts and diagrams should be introduced for solutions of problems.

4. Statistical Process Control – SPC should be used to reduce variations and to root out the problems.

5. Imaging for Problem solving – Management should visualize a process, procedure or operation related to waste. This technique is related to creativity and brain storming.

6. Industrial Engineering – Management should adopt and use techniques like, plant

layout, material handling, methods, and analysis and work simplifications for continual improvement.

9. RICHARD J. SCHONBERGER (1975)

Schonberger is known for his contribution, manufacturing, production and analysis. He has authored the book as 'Japanese Manufacturing Technique'. Best Practices in Lean Six sigma Process Improvement: A Deeper Look, Let's Fix It! Overcoming the Crisis in Manufacturing: How the World's Leading Manufacturers Were Scheduled by Prosperity and Lost Their Way"

Schonberger's Contribution:

1. Identify your customers and get all information and data of customers.

2. Reduce and cut the work in process.

3. Cut flow times.

4. Cut set up and change overtimes.

5. Increase frequency for each required item.

6. Cut flow distance and space.

7. Cut number of suppliers down to a few good ones.

8. Cut number of part members.

9. Produce without error.

10. Arrange the workplace to eliminate search time.

11. Maintain Record of production, quality and problems during the working and keep it safe.

12. Train the employees more than one job.

13. Confirm that employees in action are able to solve the problems before asking experts.

14. Improve existing equipments, human resources.

15. Look for simple, cheap and movable equipment.

16. Keep alternatives ready, for work stations, machine cells, and times for each product.

17. Automatic incrementally, when process variability cannot otherwise be reduced.

10. SHIZUO SENJU (1980)

5s philosophy developed by Mr. Shizuo Senju in his work 'Total Profit improvement through Inter Index Analysis' in Japan. Economic Engineering for Executives: A Common Sense Approach to Business decisions, TQC and TPM, Profitability Analysis for Managerial and Engineering Decisions.

Meaning of Japanese 5s is given below.

1. SEIRI – Sort out or eliminate unnecessary elements from the work place.

2. SEITON – Setting or placing things that these will available whenever required.

3. SEISO – Shine-or clean. There should be no dirt, dust or trash at the work place.

4. SETKETSU – Standardization – Conducting daily activities as per schedule and comparing results with previous three activities.

5. SHITSUKE – Sustain – Commitment and contribution of employees for the standardized work, established in the organization.

He introduced 'Relation Diagram Method' which is useful for effective workplace standardization of work procedure. It is also used when complicated relationship between cause and effect arises.

STEPS FOR CREATING TQM CULTURE –

a) Management action in delighting customers.
b) Dismantling boundaries and internal competition.
c) Fact based decision making.
d) Kaizen approach
e) No organizational structures of TQM

STRATEGIES FOR THE DEVELOPMENT OF TQM –

a) **TQM Element Approach** – Using TQM tools to foster improvement. i.e. quality circles, statistical process control, six sigma and design of experiments ensures the effective implementation.
b) **The Guru Approach** – Use the guides of one of the leading quality thinker.
c) **Organizational Model Approach** – The organization use bench marking as a model for excellence.
d) **Japanese Total Quality Approach** – Companies pursue Deming principle to follow total quality approach and for receiving Deming's prize.

PRINCIPLES OF TQM –

a) **Be Customer Focused:** Only customers determine the level of quality.
b) **Ensure Total Employee Involvement:** empowering employees provide proper environment.
c) **Process Centered:** Fundamental part of the TQM is to focus on process centering.
d) **Integrated System:** All employees must know the business mission and vision. Modeling of integrated business system to be made.
e) **Strategic and Systematic Approach:** Strategy plan must integrate quality as core improvement.
f) **Continuous Improvement:** Using analysis, quality tools and creating thinking to become more effective and efficient.
g) **Fact Based Decision Making:** Decision making must be done only on data, not personal or situational thinking.
h) **Leadership:** Leadership from top management.
i) **Communication:** Communicating strategy, method and timelines must be well defined.

EMPLOYEE INVOLVEMENT IN TOTAL QUALITY MANAGEMENT AND NEW RESEARCH EVIDENCE

Recent research by authors on TQM sees the participative involvement of the employee during the conceptualization stage to the implementation stage of the strategy as crucial. In a survey carried out in six named organizations (British Steel, Shotton Works, in North Wales); the Halifax Building Society; the London Borough of Lewisham; Philips Domestic Appliances (Hastings site, in Sussex); Severn Trent Water; and South Warwickshire NHS Trust. It was based on interviews with managers and trade union representatives and a detailed survey of employee opinions; a total of 280 employee responses was obtained by Collinson, Edwards, and Rees, (2003). Result of the research shows (a) that employees welcome some but not all features of TQM, (b) that existing accounts have an unduly strict benchmark for the effects of TQM, and (c) that success depends on certain conditions. More than four-fifths of the sample survey revealed that employees saw quality as the crucial issue for their organizations' success, growth and development in order to sustain competitive advantage over competitors and as such, welcome the need for the implementation of TQM. Almost two-thirds of the same sample survey felt that employees had a "great deal" or a "fair amount" of influence over quality, and over 70 per cent of the sample survey acknowledge that their own involvement in problem-solving had increased enormously. Five employees in six identified the presence of meetings designed for problem solving.

Of the sample survey, 72 per cent acknowledge that there had been an increase in communication activity recently. The most favorably evaluated method was team briefing, followed by informal communication with individual managers. It was direct, face-to-face, communication, where the worker is allowed to air his mind, as regards operations and how things are done in the organization they work for, thus giving them that sense of 'belonging' to an organization who cares for their input in the day to day running of the organization (internal customers) and this open line of communication was most valued by this segment of employees during the research sample survey. Many proponents of TQM claim that it "empowers" workers. Critics equate it with work intensification and stress. The research sample survey result shows that neither picture is accurate. Managements in the organizations surveyed, did not use the language of empowerment and had more pragmatic goals, as one of the managers summarily puts it as "empowerment is not a word used at local level; we can and do involve people more but we need to have constraints". Employees reported greater effort outputs, but most liked the pace at which they worked. Those who were working harder and who were most subject to the measurement of their performance were also the most likely to favor quality strategies like the TQM.

According to the research, acceptance of TQM was greatest where several conditions prevailed:

- Better feeling of job security was a key element in encouraging acceptance of quality initiatives.

- Training was very crucial; it was the pivot upon which quality strategies was built, as it involves educating the employee on what is expected of them in the implementation of quality delivery strategies, invariably suggesting that, it is not the overall amount which mattered, but the extent to which quality delivery strategies were specifically linked to quality or teamwork.
- Cooperative interactions with employee representatives were an important element in easing the acceptance of TQM. All the organizations during the research were unionized, and it was found that organizations which maintained working relationships with their unions were also the most likely to maintain their quality delivery strategies effectively, but does not claim that a trade union role was too essential. It quotes related research as showing that TQM can work well in non-union cases, but even in these, there was a system of employee representation in place.
- It was also evident from the result of the research that ad hoc measures tended to undermine TQM implementation. They were of two kinds: production measures, which made it hard for quality activities to be maintained; and financial measures, which could result in human resource capacity under utilization and commitment to TQM.

Quality delivery strategies like TQM can", the study says, "be seen as catalysts", bringing out workers' willingness to take responsibility and providing a focus and rationale for efforts at involvement. TQM strategy seems to promote a narrowly focused but real sense of discipline and purpose, rather than being a means to make workers work harder, the report concludes.

THE ROLE OF QUALITY IMPROVEMENT TEAMS IN TQM STRATEGY

One of the major obstacles that have bedeviled the successful implementation of TQM is the non – recognition of quality teams in organizations in the quest for a successful strategy that will lift the organization above its competitors (Stanford, 2005). Team effectiveness is crucial to the implementation of TQM because the development of people and their involvement in the operations of an organization through teamwork is very essential, and for it not to be seen as such, will only ruin the collective effort of inputs towards the actualization of a functional quality delivery strategy like the TQM (Lewis, 2004)

Quality improvement teams cuts across employees of organizations, representatives of customers and suppliers with a major objective of meeting the set target of achieving quality. In doing this, it is pertinent to note that certain criteria have to be fulfilled in order to get the desired result from a quality improvement team, since it embraces almost all the stakeholders that lay claim to a business, and these criteria, according to Geirhybein (2004) include choosing the leader and members of the team. In doing this, the **team leader** must:

- Possess effective Leadership Behavior
- Possess the attributes of effective conflict management
- Should have the ability of encouraging innovation
- Have adequate knowledge of effective meeting management
- Manage and send out schedule of events and activities.

- Make certain that the team members are conversant with the modus operandi of team meetings/activities.
- Endeavour to make certain that meeting venues are secured well ahead of time.
- Engage in meeting with front line managers on favorable times for team meetings.
- Should be prompt and alert to time.
- Ability to record activities of team meetings in minutes as well as collation of data.
- Sets an agreed time for the next meeting as well as communicates minutes and ensure that action is taken for matters raised.
- Ability to identify training needs of the quality team in addition to be a good contributor and listener, and this can be achieved by being dedicated to the intended purpose of the team through effective commitment.
- Similarly, Geirhybein (2004) suggested what **members** need to have in order to be effective in quality delivery teams:
- Members must be willing, not forced or coerced to join a quality team for the fun of it.
- Members need to be passionate about what the quality team sets out to achieve at all times as the direct result of such commitment is the outright benefit of quality service.
- Members should be prepared to share their experiences with the team leader as well as among themselves, for the overall benefit of the team.
- Members should be able to buy into shared team vision
- Present in the members should be the spirit of natural collaboration
- Need to respect the views of other members when they speak, listen to them when they have issues to raise as well as, be able to communicate effectively with both the team leader and members.
- Members should equally be ready to take down minutes at the request of the team leader, be prepared to follow up actions when directed and never be afraid to say 'I don't understand' when situations arise .
- Members need also to be able to contribute meaningfully to discussions on the floor during meetings as well as being effective listeners.

Quality improvement initiatives typically involve the directed efforts of quality improvement teams. Making adequate use of quality improvement teams and empowering employees to solve quality-related issues using such tools as AMO (Ability, Motivation and Opportunity) as exemplified in the work of Purcell et al. (2003) can serve as leverage for the implementation of a TQM system. The effective use of quality improvement teams, and the TQM system as a whole, can be strengthened by the basic application of principles of motivation, especially the the recognition of team achievements as against those of individual employees, and the effective use of goal setting for team efforts, are crucial in driving the process of TQM. The HRM department is in a vantage position to help institutionalize team approaches to TQM by designing appraisal and reward systems that focus on team performance, Fran, (2002).

INSTITUTING TQM CULTURE IN ORGANISATIONS: EMPLOYEE INVOLVEMENT

People can be better managed to embrace TQM by institutionalizing TQM organizational culture in the employees, so as to be able to deliver quality products and services to customers, Collinson et al, (2003). Human resource management can play a crucial role in the i

Implementation of TQM strategy. HR managers or practitioners are responsible for recruiting and selecting high-quality employees, the continuous training and development of these employees, and the creation and sustenance of reward systems. Therefore, TQM sees to the control of processes that are pivotal to the accomplishment of cultural changes often required for TQM to be successfully implemented, Haigh and Morris, (2002). Directing the TQM cultural development initiatives to the organizations' conditions is important in subduing opposition to change and moving beyond simple compliance toward a total commitment to TQM processes.

According to De Wit and Mayers, (2005), holding a significant connecting role between top management and employees, HRM has many avenues to institute communication channels between top management and other members of the organization. Using these channels, HRM practitioners can ensure that employees realize that they are the organization's number one priority in implementing TQM. Engendering trust and confidence through an open interchange of purposeful ideas can help eliminate fears regarding the work-role changes that TQM needs. This can provide the building block for all employees to be trained to see their colleagues in other divisions as equal internal customers to the organization. This is another avenue for HRM to highlight this new outlook by example. Through this means, that is, focusing on satisfying the needs and wants of the customer first and foremost, HRM can institute a departmental view of service throughout the entire hierarchy of an organization.

A major function of HRM's expertise is its capability to scrutinize and provide assessment for employee attitudes. This expertise can be significantly essential in driving the process for a proper implementation of TQM, since getting it right from the onset (conceptualization stage) entails having adequate data/information about current performance level. Therefore, a preliminary action is to implement an employee assessment, targeting two prime areas. One requires the identification of the difficult parts of organizations' current operations, where innovations in quality can have the most significant impact on an organizations' performance level. The other part, targets the perceptions and attitudes of employees towards quality as a fundamental issue, so as to ensure that, the implementation of TQM can be revitalized, for better effectiveness and efficiency, Collinson et al.,(2003).

Achieving assistance from other divisions in an organization in the use of surveys to a great extent depends largely on their perception of HRM's position in the survey process. The challenge is to ensure that HRM is not having an over bearing influence on other departmental functions, but rather, to be seen as an important ally in making their own quality improvements.

Achieving this status can be accomplished in the participative nature of the TQM philosophy by involving other divisions in the organization, towards the development of the survey instrument to be used. This involvement begins the process of carrying each division in the organization along, so as to see TQM as a strategy to be embraced by all employees of an organization (Haigh and Morris, 2002).

DATA ANALYSIS

AND

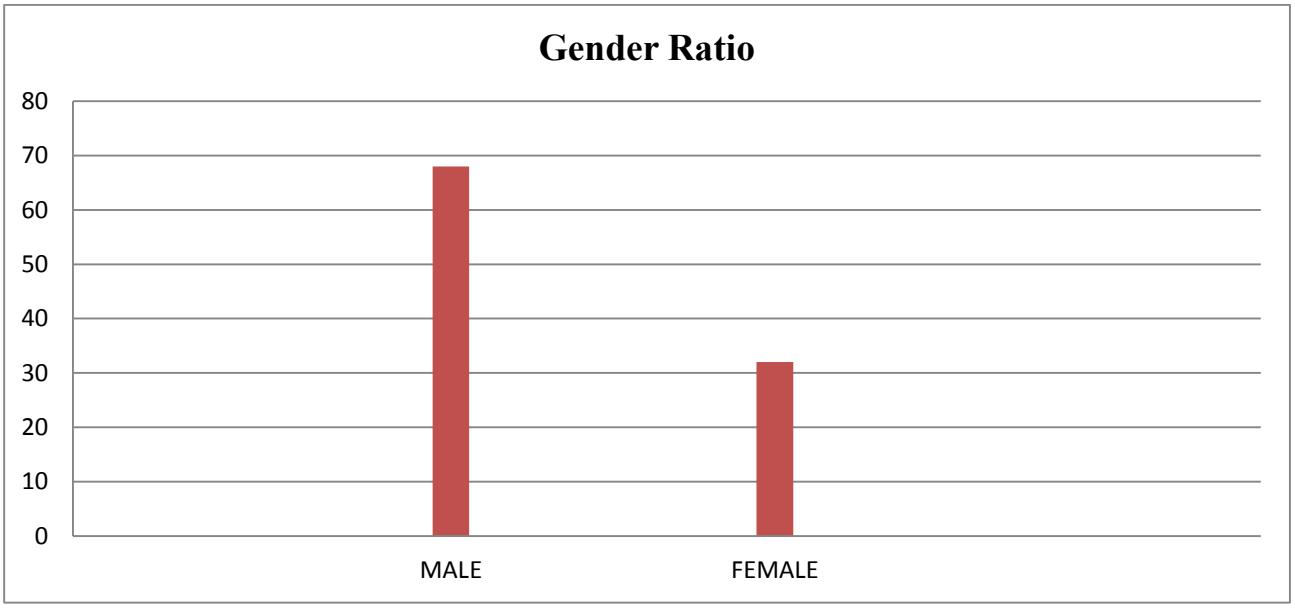
INTERPRETATION

GENDER OF RESPONDENTS

Table No: 3.1

GENDER	FREQUENCY	PERCENTAGE %
MALE	41	68
FEMALE	19	32
TOTAL	**60**	**100**

Chart No: 3.1



Interpretation:

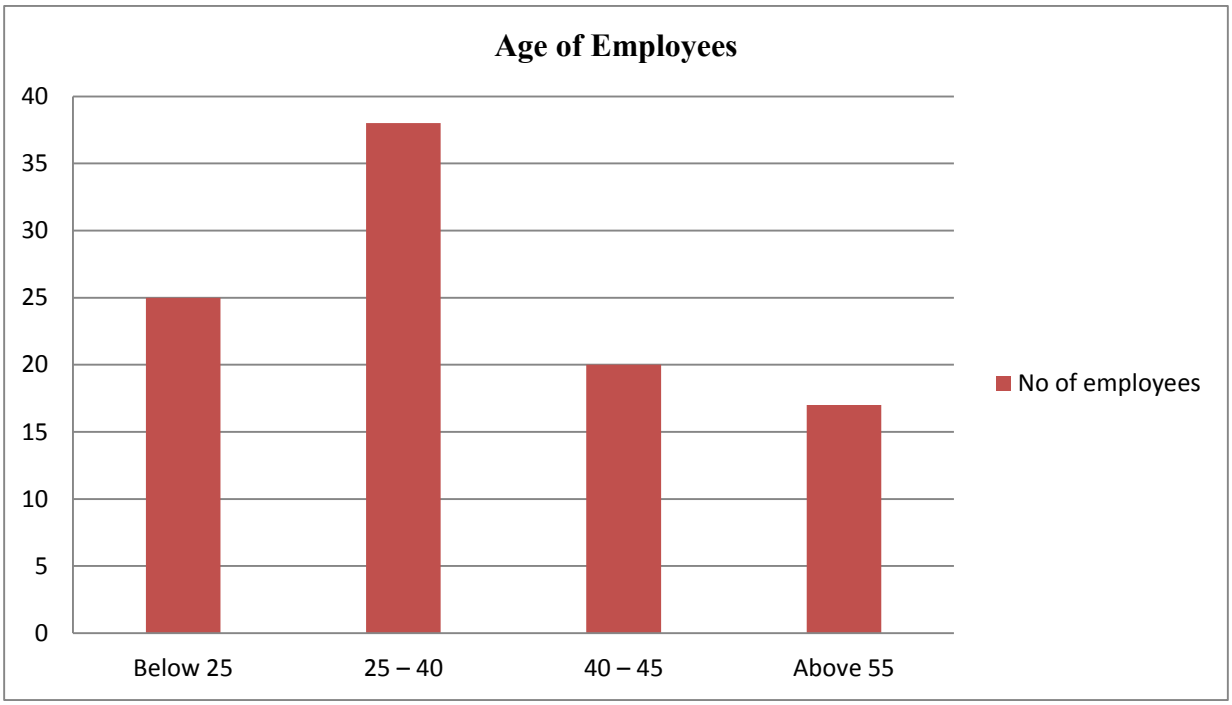
Out of total respondents surveyed, 68% were male employees and 32% were female employees. This shows that in the firm majority workers are the male employees, considering the fact that it's a manufacturing plant it is an obvious that males are more as they can endure more physical stress that is needed in a production facility.

AGE OF RESPONDENTS

Table No: 3.2

AGE	FREQUENCY	PERCENTAGE %
Below 25	15	25
25 – 40	23	38
40 – 45	12	20
Above 55	10	17
Total	**60**	**100**

Chart No: 3.2



Interpretation:

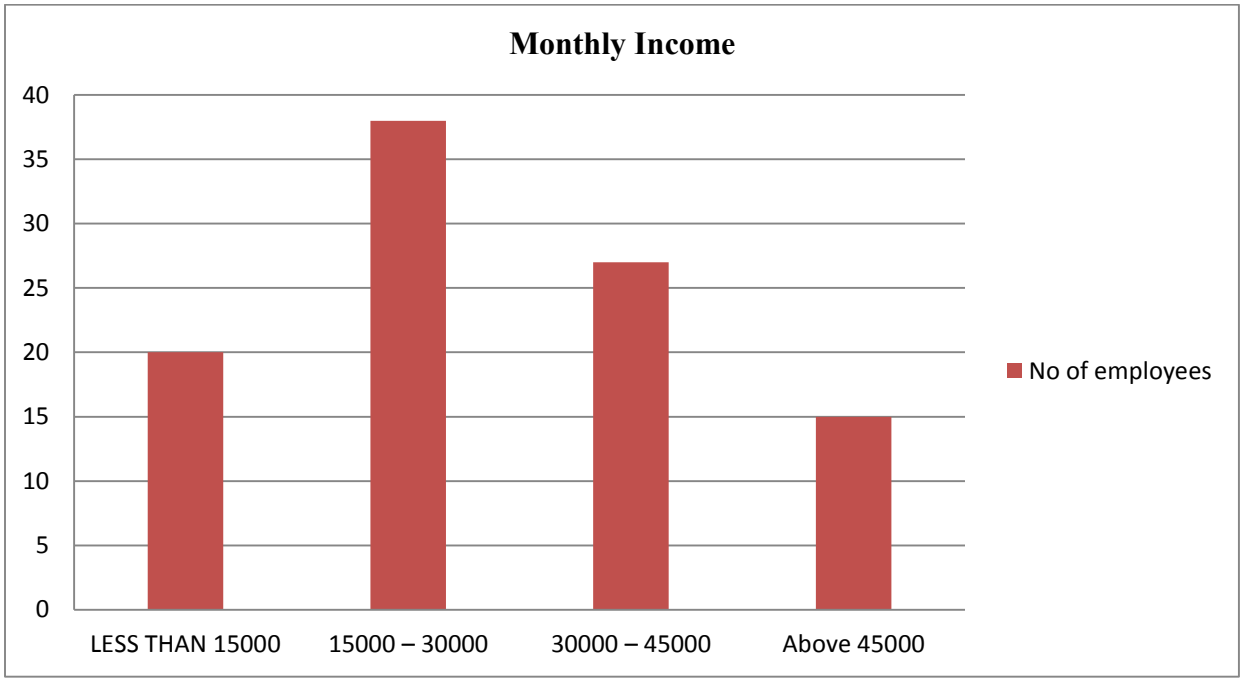
Out of total respondents surveyed, most of the respondents i.e. 38% are from the age group of 25 – 40, 25% of the respondents are below the age of 25, 20% are between the age of 40 and 45. The remaining 17% are above 55 years of age. This means that around 60% of the employees working at the plant are young and dynamic which makes the production facility all the more productive as the youthful employees can produce greater output within short period of time and can also work long and hectic schedules to fulfill their targets.

INCOME WISE CLASSIFICATION

Table No: 3.3

INCOME	FREQUENCY	PERCENTAGE %
LESS THAN 15000	12	20
15000 – 30000	23	38
30000 – 45000	16	27
Above 45000	9	15
Total	60	100

Chart No: 3.3



Interpretation:

Out of the total respondents surveyed, 38% of the respondents draws salary between Rs. 15000/- and Rs. 30000/-, 27% draws salary between Rs. 30000/- and Rs. 45000/-, 20% draw salary less than Rs. 15000/- and 15% of the employees draw salary above Rs. 45000/-.

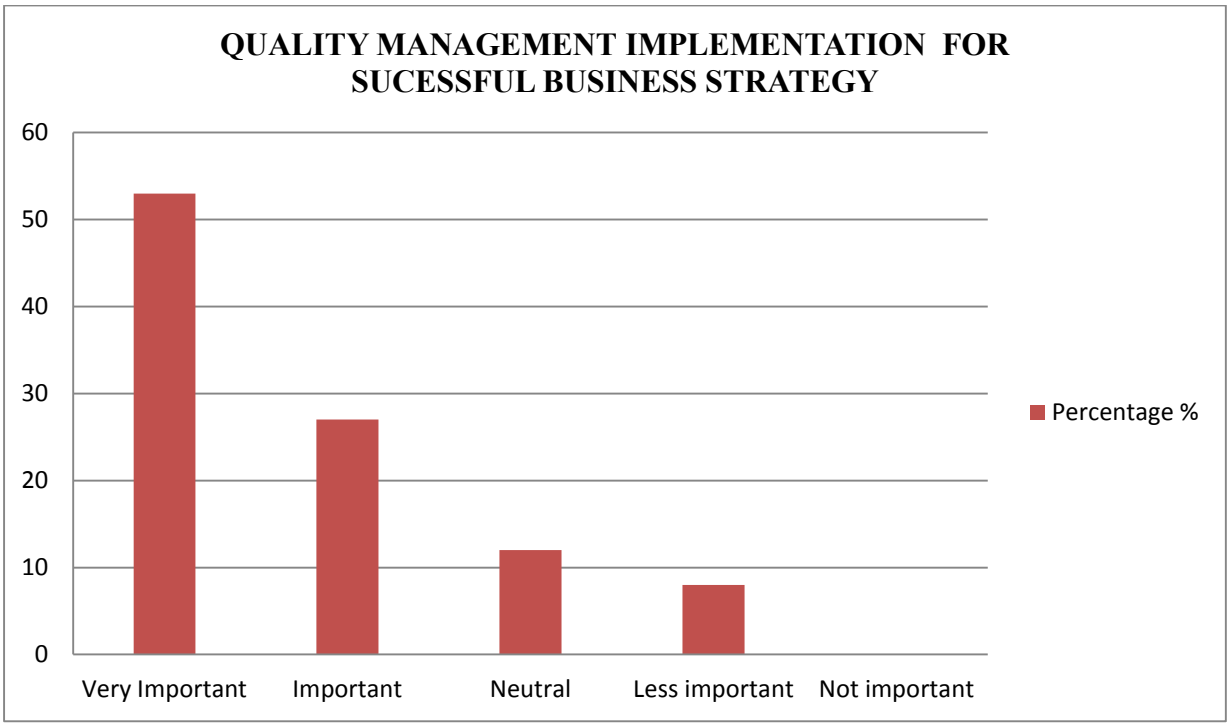
This shows that the employees are well compensated for the services that they provide to the organization based on their grade as well as based on their performance. This also indicates that the income is appreciably satisfactory when compared to other organizations of similar stature.

IMPORTANCE OF QUALITY MANAGEMENT IMPLEMENTATION IN CREATION OF SUCESSFUL BUSINESS STRATEGY IN HLL

Table No: 3.4

Indicator	Frequency	Percentage %
Very Important	32	53
Important	16	27
Neutral	7	12
Less important	5	8
Not important	0	0
Total	**60**	**100**

Chart No: 3.4



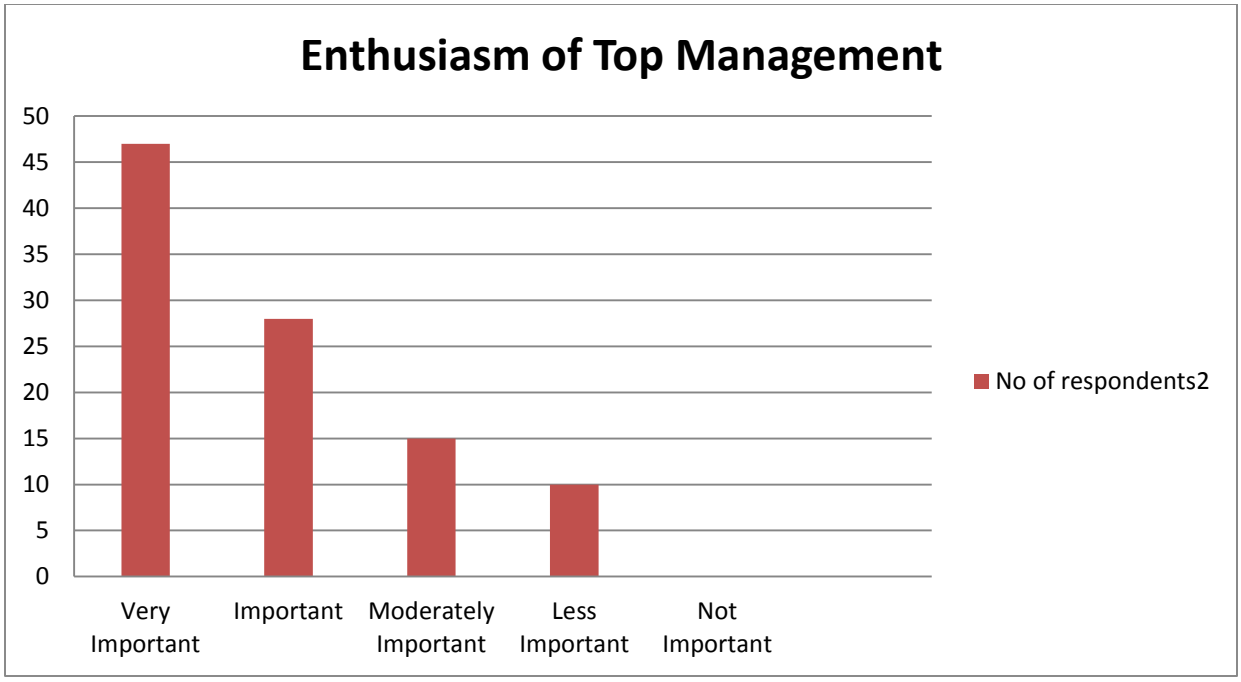
Interpretation: Out of the total respondents surveyed, 53% of the employees responded that quality management is very important for the company's strategy development, 27% of them feel that it is important, 12% are neutral about it and remaining 8% feel it to be less important. This shows that about 80% of the employees have a strong belief as well as experience that by implementing TQM it would definitely aid and help in developing HLL's business strategy to a great extent.

ENTHUSIASM OF TOP MANAGEMENT

Table No: 3.5

Indicator	No of Respondents	Percentage
Very Important	28	47
Important	17	28
Moderately Important	9	15
Less Important	6	10
Not Important	0	0
Total	**60**	**100**

Chart No: 3.5



Interpretation:

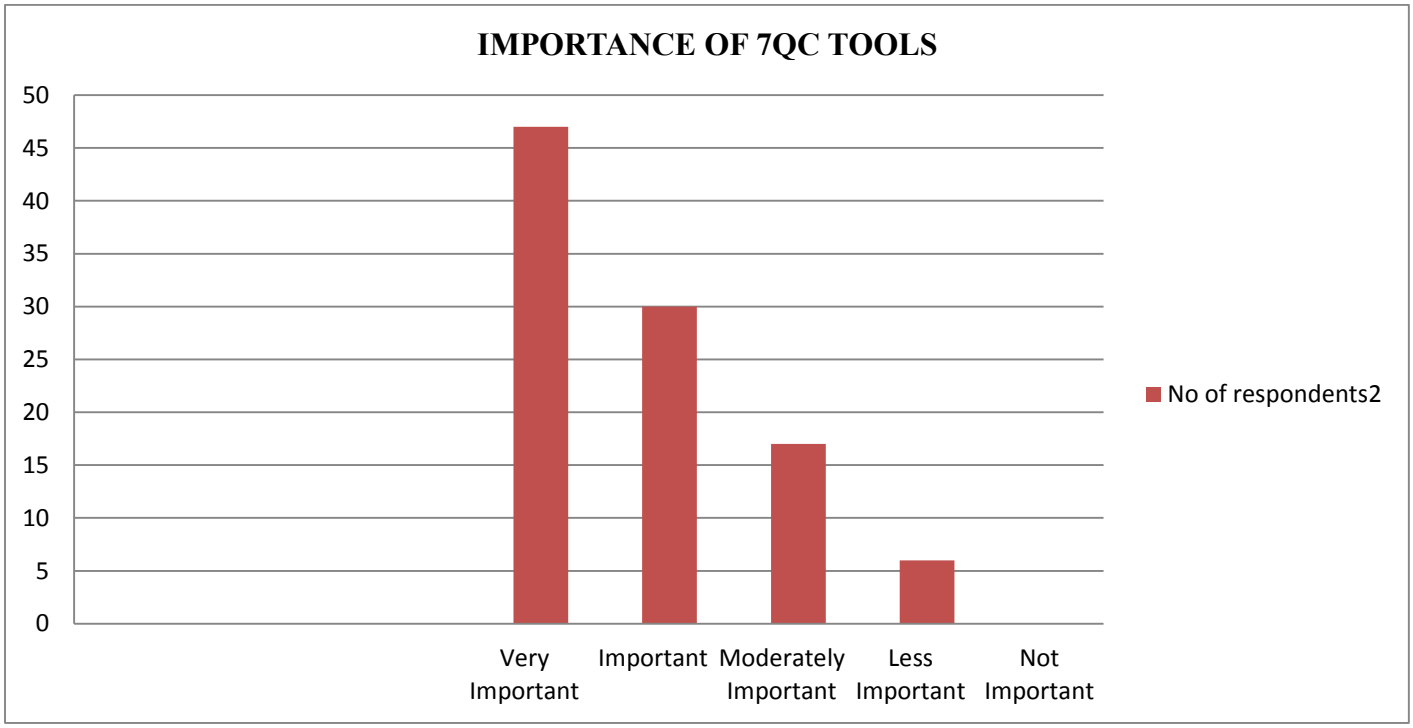
Out of the total respondents surveyed, 47% of the employees strongly responded that it is based on the enthusiasm shown by the top management, the quality management has implemented in the organization, 28% find it to be important, 15% find it to be moderately important and the last 10% find it to be less important.

IMPORTANCE OF 7QC TOOLS FOR PROCESS CONTROL AND IMPLEMENTATION IN HLL

Table No: 3.6

Indicator	No of respondents	Percentage
Very Important	28	47
Important	18	30
Moderately Important	10	17
Less Important	4	6
Not Important	0	0
Total	**60**	**100**

Chart No: 3.6



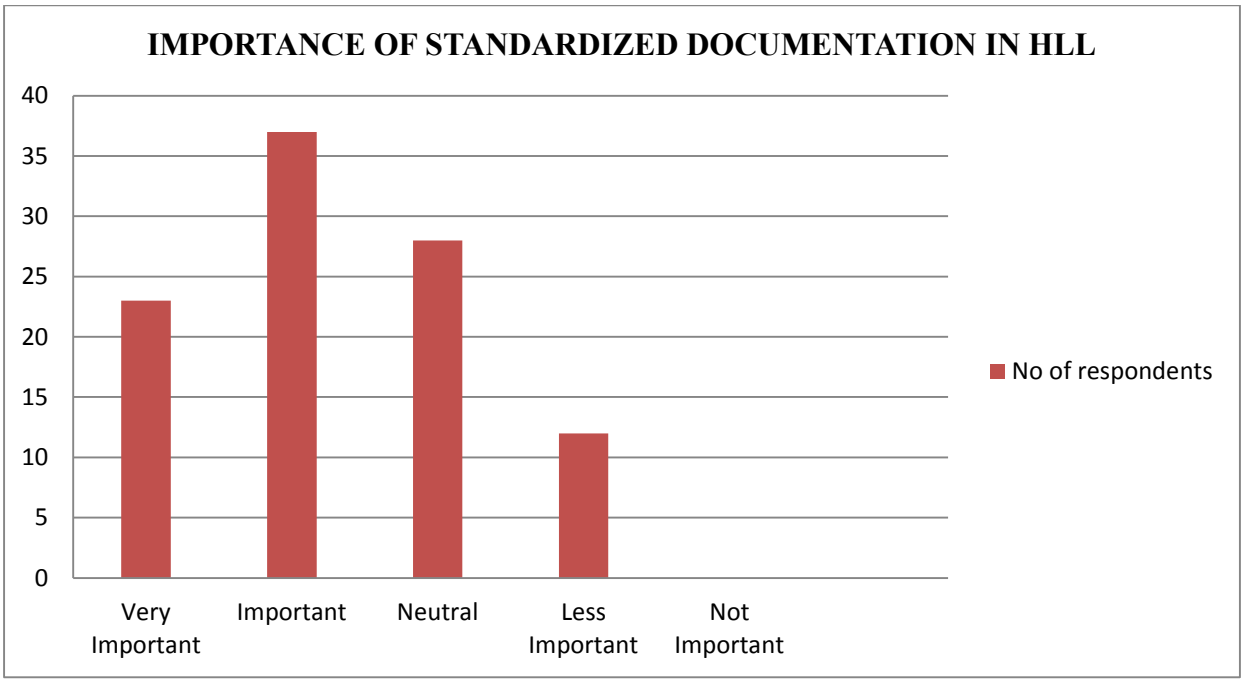
Interpretation: Out of the total respondents surveyed, 47% responded that 7QC tool is very much important for process control as well as implementation, 30% of the respondents feel it is important, 17% feel it to be moderately important and remaining 6% feel it to be less important comparatively. Around 77% feel its absolute importance as most of the tools in it help them to identify a problem or defect in the various processes in the various production phases. It is especially vital in the quality assurance department, also the ETD section and even the packaging department.

IMPORTANCE OF STANDARDIZED DOCUMENTATION FOR WORK METHOD AND PROCESS INSTRUCTIONS IN HLL

Table No: 3.7

Indicator	No of respondents	Percentage
Very Important	14	23
Important	22	37
Neutral	17	28
Less Important	7	12
Not Important	0	0
Total	**60**	**100**

Chart No: 3.7



Interpretation:

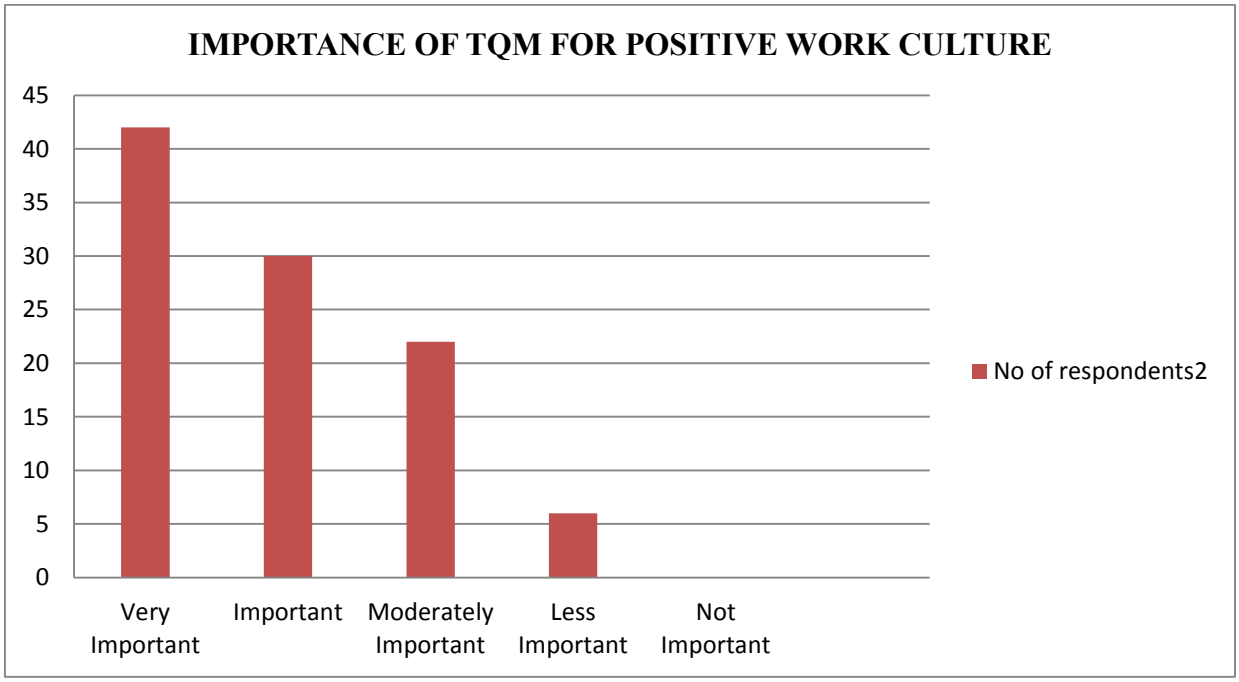
Out of total respondents surveyed, 23% responded that standardized documentation is a very important factor for process instruction as well as work method. 37% feel it to be important, 28% feel it to be neutral and remaining 12% feel it to be less important. It shows that 60% believe that a set of well recorded documents are essential not only to solve daily hindrances if any in operational processes but also for guiding the non-active employees or trainees of the plant regarding various aspects.

IMPORTANCE OF TQM TRAINING FOR BUILDING POSITIVE WORK CULTURE

Table No: 3.8

Indicator	No of Respondents	Percentage
Very Important	25	42
Important	18	30
Moderately Important	13	22
Less Important	4	6
Not Important	0	0
Total	**60**	**100**

Chart No: 3.8



Interpretation:

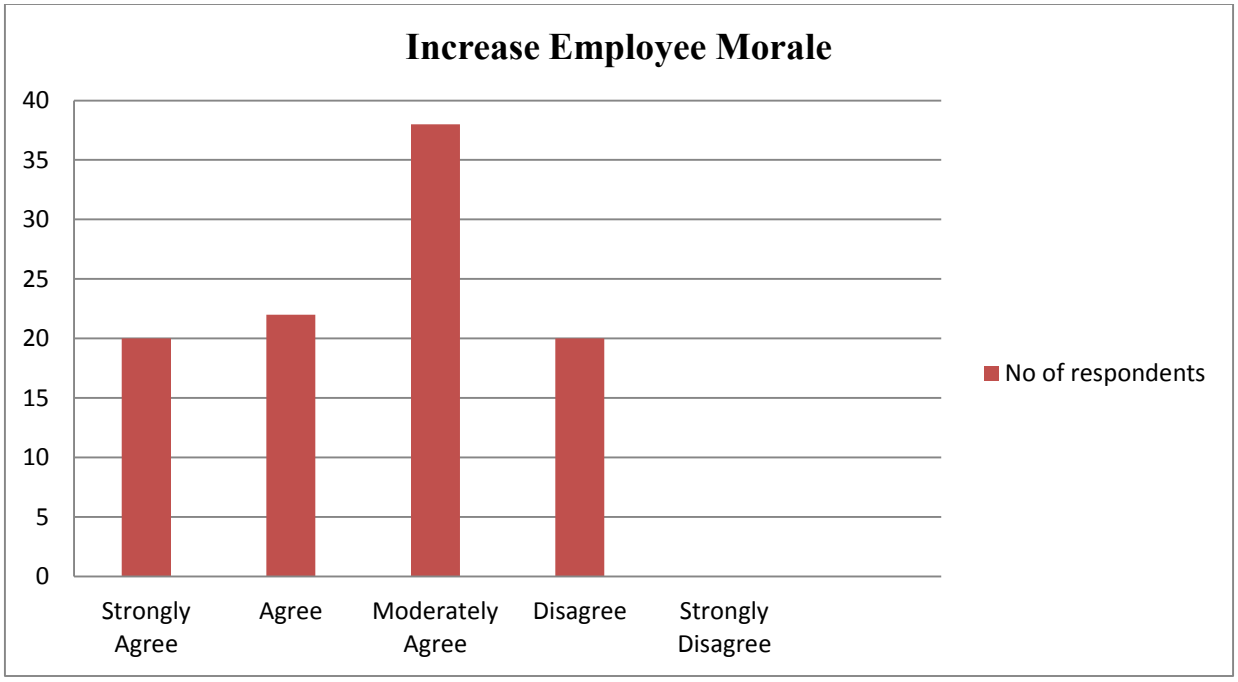
Out of the respondents surveyed, 42% of employees responded that the TQM training is very important factor that leads to positive work culture in HLL. 30% of the respondents feel it to be important, 22% feel it to be only moderately important and remaining 6% feel it to be less important. There are around 70% of the employees who feel strongly about TQM training like the 5S that aids the organization in developing a positive work culture by various conducting various skits and plays in each department.

INCREASED EMPLOYEE MORALE

Table No: 3.9

Indicators	No of respondents	Percentage %
Strongly Agree	12	20
Agree	13	22
Moderately Agree	23	38
Disagree	12	20
Strongly Disagree	0	0
Total	**60**	**100**

Chart No: 3.9



Interpretation:

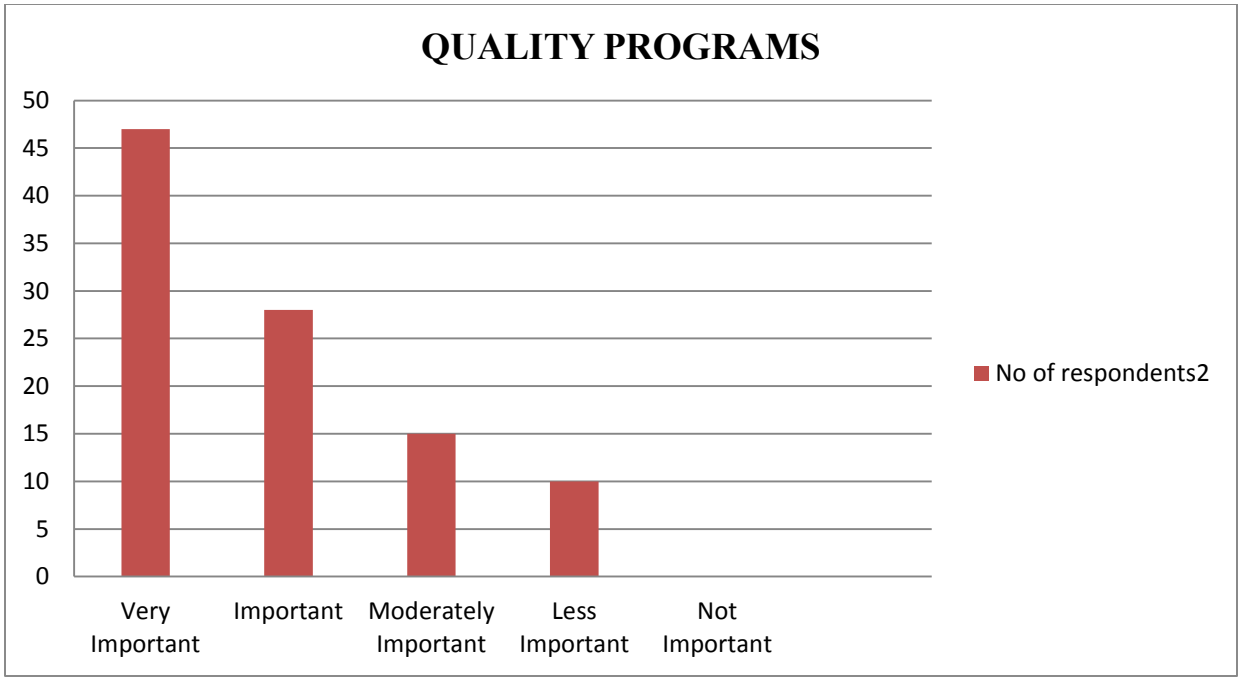
Out of the total respondents surveyed, 20% of employees strongly stated that quality management system has moderately increased the morale of the employees, 22% agreed with the statement above, 38% moderately agreed with the statement and rest 20% disagreed to this statement. This shows that quality management system in the organization is effective to some extent for increasing the employee morale of the organization.

QUALITY BASED SEMINARS AND PROGRAMS

Table No: 3.10

Indicator	No of Respondents	Percentage
Very Important	28	47
Important	17	28
Moderately Important	9	15
Less Important	6	10
Not Important	0	0
Total	**60**	**100**

Chart No: 3.10



Interpretation:

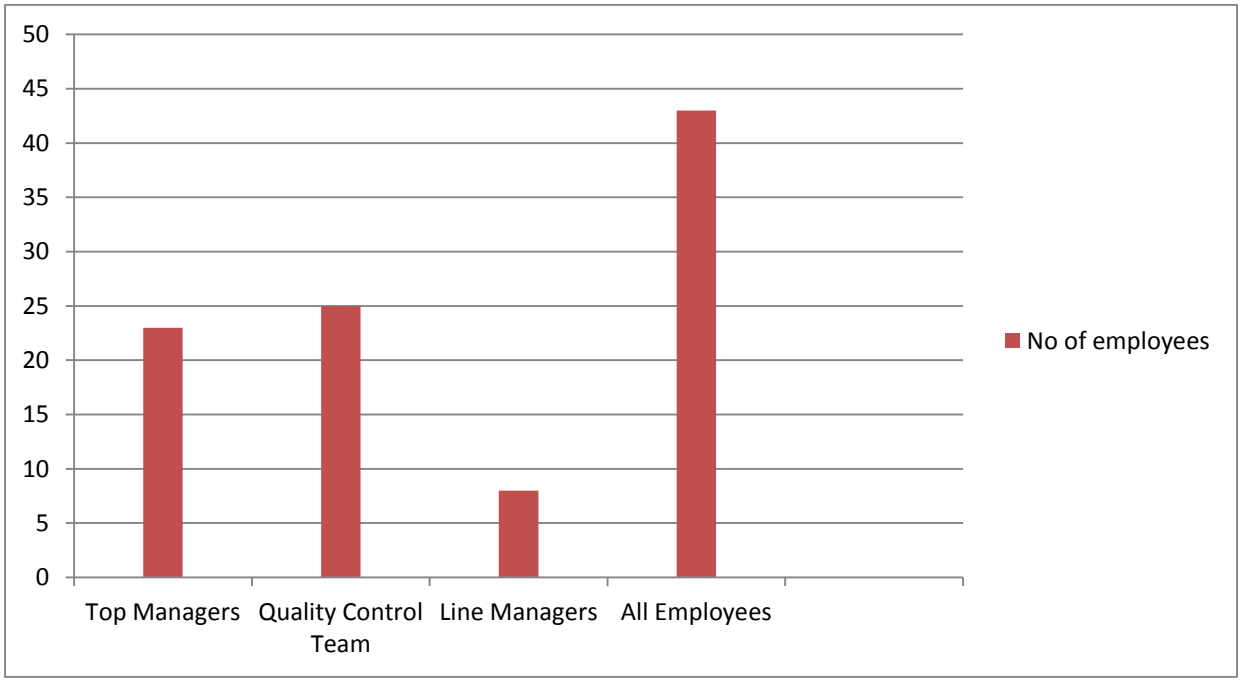
Out of the total respondents surveyed, 47% of the employees think quality based seminars and programs are very important, 28% feel it to be important, 15% feel it to be only moderately important and the rest 10% feel it as less important.

PRIMARY RESPONSIBILITIES FOR QUALITY

Table No: 3.11

Category	No of Respondents	Percentage
Top Managers	14	23
Quality Control Team	15	25
Line Managers	5	8
All Employees	26	43
Total	**60**	**100**

Chart No: 3.11



Interpretation:

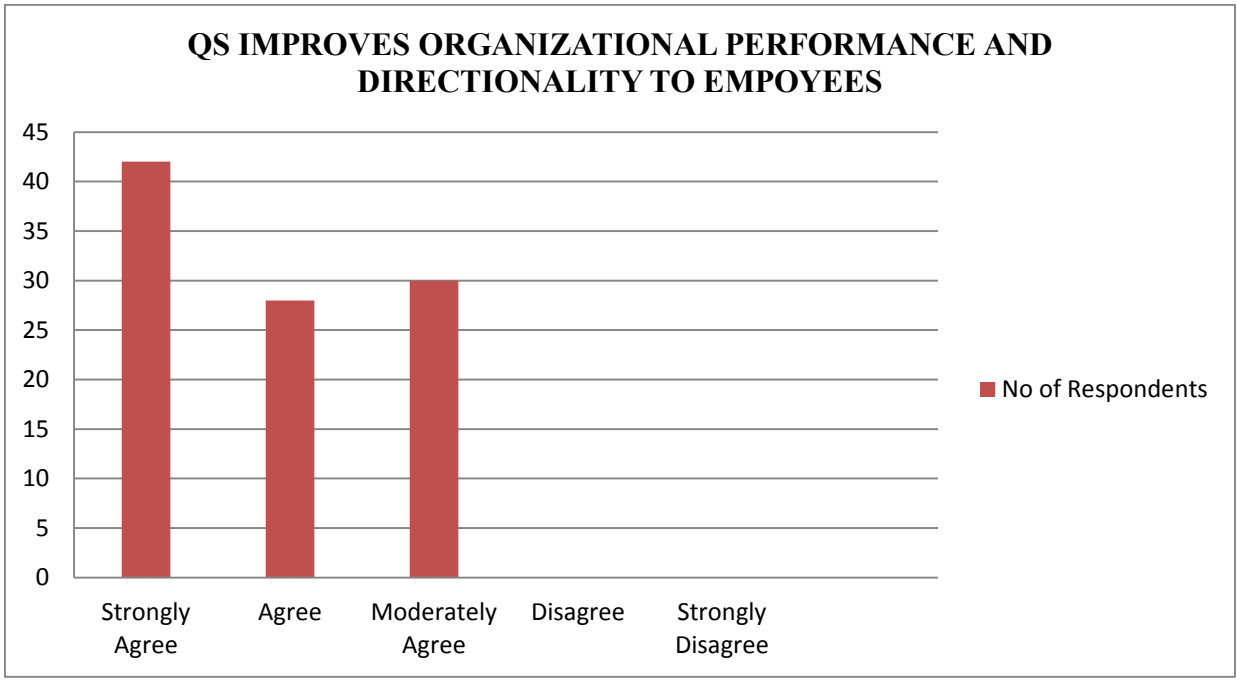
Out of total respondents surveyed, 43% of the employees responded that all employees have the primary responsibility for quality in the organization. 23% of the employees respond that top managers have the responsibility, 25% respond that quality control team has the primary responsibility for quality in the organization and only 8% feel that the responsibility is with line managers.

QUALITY SYSTEM IMPROVES ORGANIZATIONAL PERFORMANCE AND DIRECTIONALITY TO EMPLOYEES OF HLL

Table No: 3.12

Indicators	No of respondents	Percentage %
Strongly Agree	25	42
Agree	17	28
Moderately Agree	18	30
Disagree	0	0
Strongly Disagree	0	0
Total	**60**	**100**

Chart No: 3.12



Interpretation:

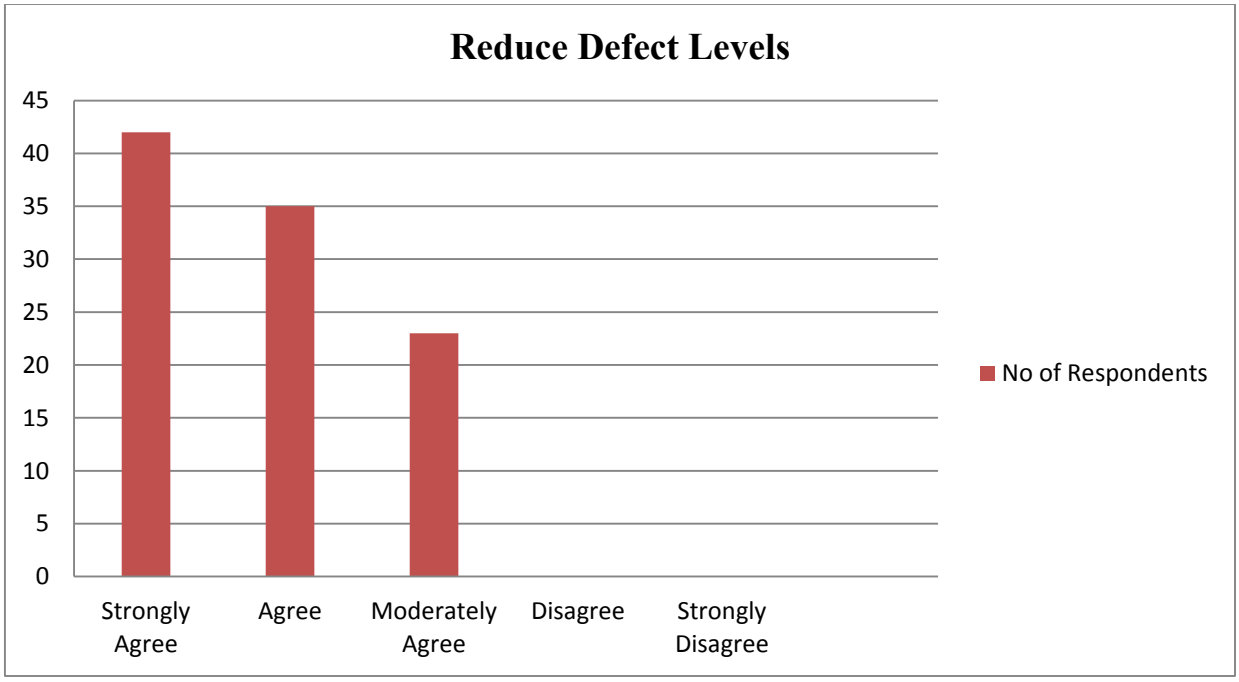
Out of total respondents surveyed, 42% employees strongly agreed that quality system improves organizational performance and directionality to employees, 28% agreed to this statement and the remaining 30% moderately agreed to this statement. Thus quality system not only increases the efficiency of the production but also acts like a direction tool for all the employees.

REDUCE DEFECT LEVELS

Table No: 3.13

Indicators	No of respondents	Percentage %
Strongly Agree	25	42
Agree	21	35
Moderately Agree	14	23
Disagree	0	0
Strongly Disagree	0	0
Total	**60**	**100**

Chart No: 3.13



Interpretation:

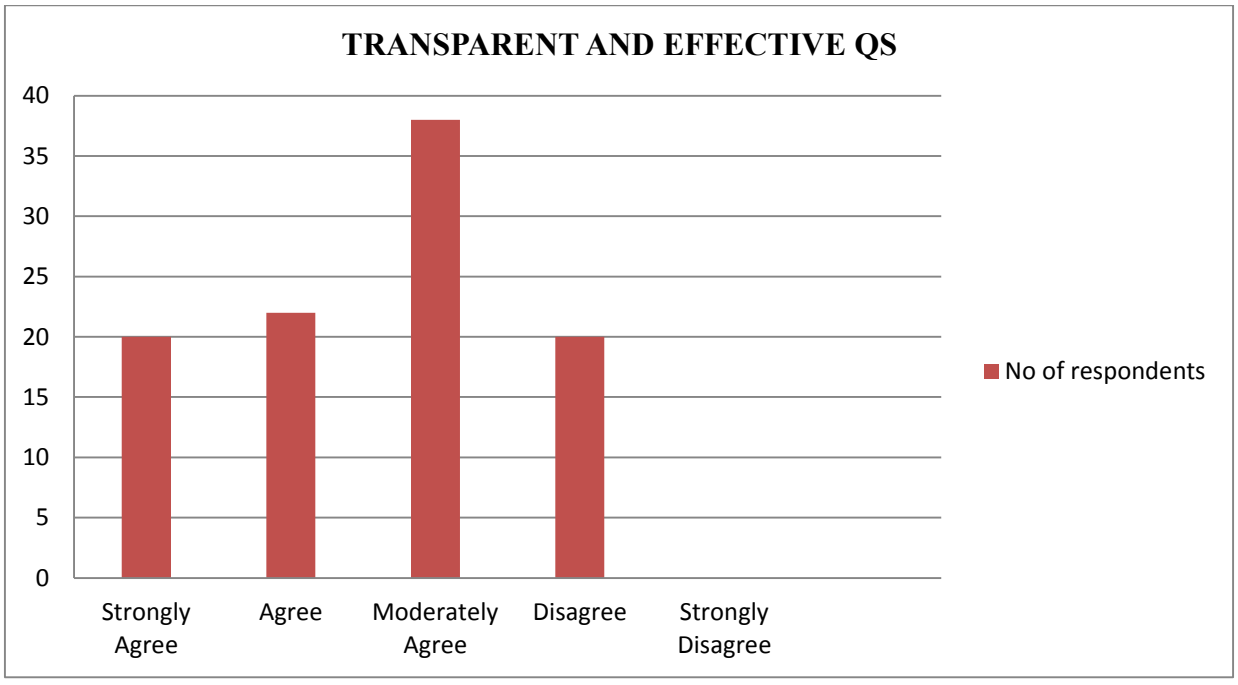
Out of the total respondents surveyed, 42% of the employees strongly agreed that the defect levels had reduced due to the implementation of Total Quality management system in the organization, 35% of the respondents agreed with the statement and the remaining 23% moderately agreed. Hence, it can be seen that on the manufacturing side, the quality management is effective.

TRANSPARENT AND EFFECTIVE QUALITY SYSTEM FOR RECOGNIZING AS WELL AS DETECTING DEFECTS

Table No: 3.14

Indicators	No of respondents	Percentage %
Strongly Agree	12	20
Agree	13	22
Moderately Agree	23	38
Disagree	12	20
Strongly Disagree	0	0
Total	**60**	**100**

Chart No: 3.14



Interpretation:

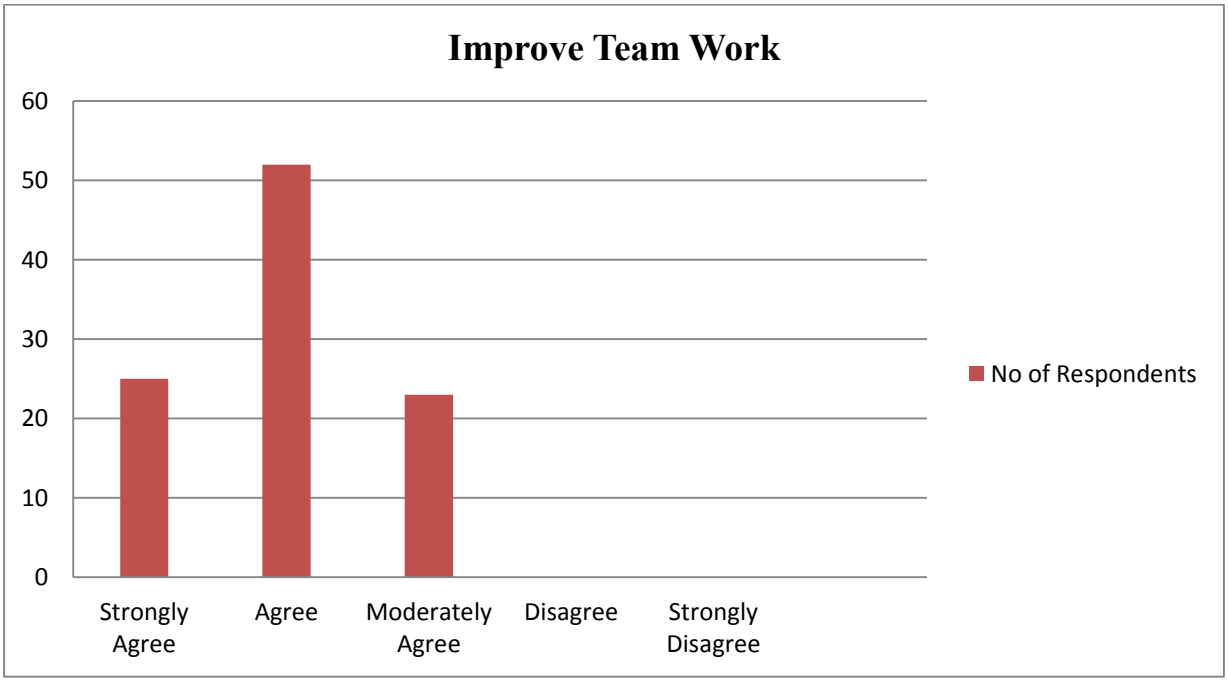
Out of the total respondents surveyed, 20% of employees strongly agree that transparent quality management system is essential for recognizing and detecting defects, 22% of the respondents agreed to this statement, 38% moderately agreed to this statement and the remaining 20% disagreed with this statement. Although there are a good majority of employees who agree with this statement but still there are some who don't feel so in comparison.

IMPLEMENTATION OF QUALITY IMPROVEMENT ACTIVITIES SUCH AS QUALITY CIRCLE, QUALITY TEAM WORK AND SUGESSION SYSTEM IN HLL

Table No: 3.15

Indicators	No of respondents	Percentage %
Strongly Agree	15	25
Agree	31	52
Moderately Agree	14	23
Disagree	0	0
Strongly Disagree	0	0
Total	**60**	**100**

Chart No: 4.15



Interpretation:

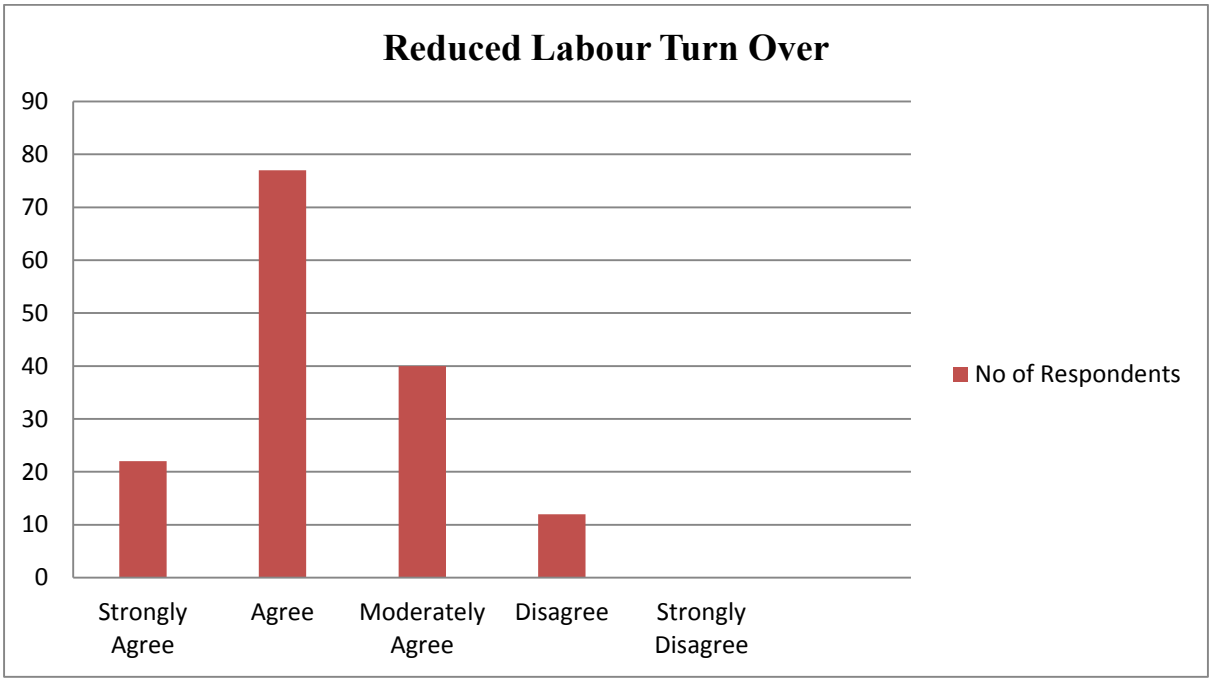
Out of the total respondents surveyed, 25% strongly agreed that quality improvement activities such as quality circles, quality team work and suggestion system are essential in HLL. 52% of the respondents agree with the given statement and the rest 23% moderately agreed to this. Thus the employees feel greatly about the implementation of quality improvement activities in the plant.

REDUCED LABOUR TURN OVER

Table No: 3.16

Indicators	No of respondents	Percentage %
Strongly Agree	13	22
Agree	16	77
Moderately Agree	24	40
Disagree	7	12
Strongly Disagree	0	0
Total	**60**	**100**

Chart No: 3.16



Interpretation:

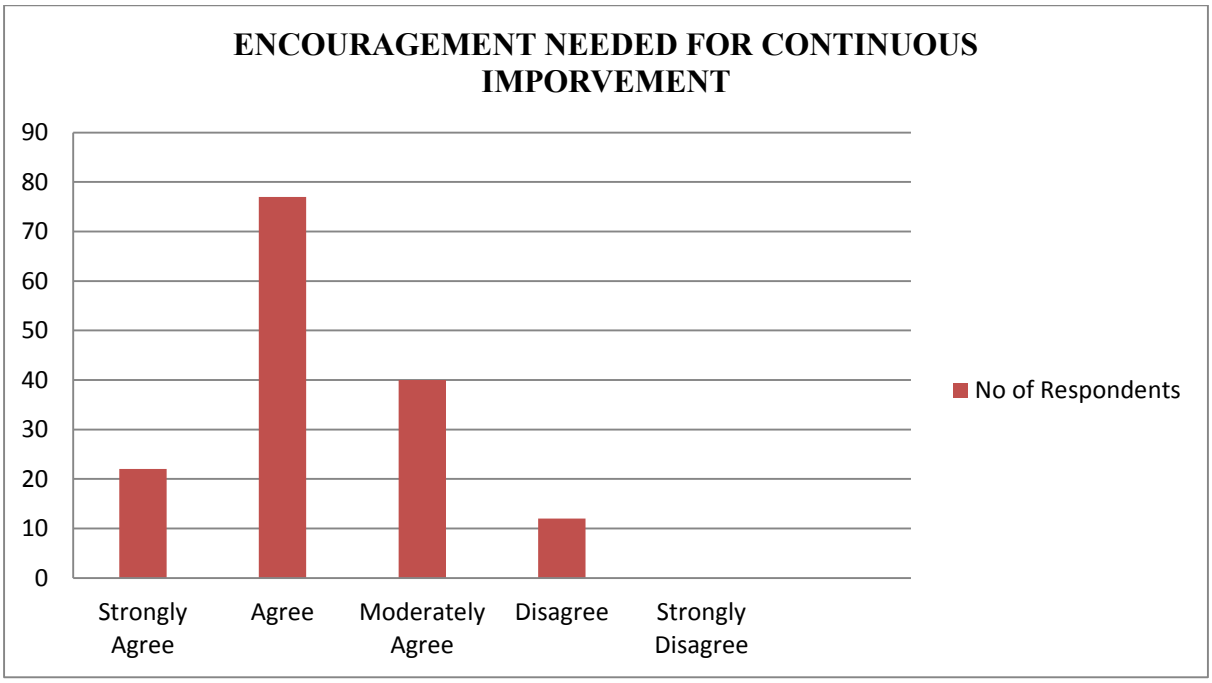
Out of the total respondents surveyed, 22% of the employees strongly agreed that there is a reduction in the labor turnover due to the implementation of quality management in the organization, 77% of the respondents agreed with the above statement, 40% moderately agreed with the statement and only 12% of the employees disagreed to this statement. This means quality management does have much effect in reducing labor turnover.

ENCOURAGEMENT NEEDED FOR CONTINUOUS IMPORVEMENT FOR ALL THE PRODUCTS AND SERVICES IN DECISION MAKING

Table No: 3.17

Indicators	No of respondents	Percentage %
Strongly Agree	13	22
Agree	16	77
Moderately Agree	24	40
Disagree	7	12
Strongly Disagree	0	0
Total	**60**	**100**

Chart No: 3.18



Interpretation:

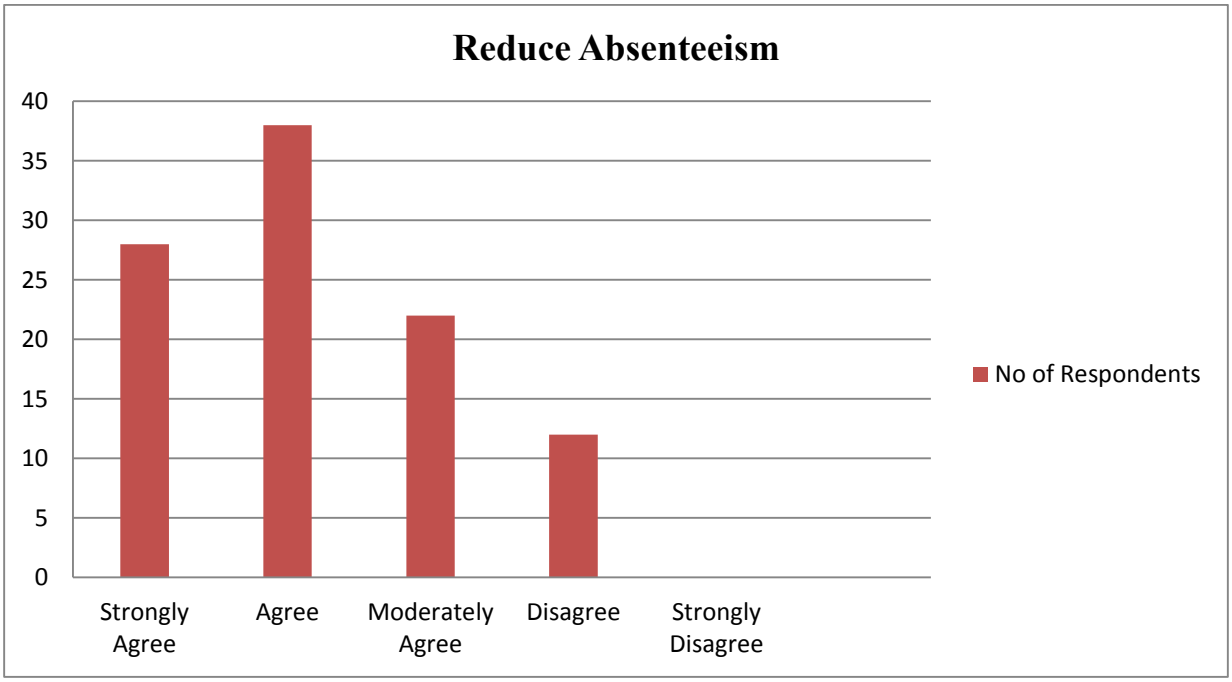
Out of the total respondents surveyed, 22% of the employees strongly agreed that there is a need of encouragement for continuous improvement for all products and services in decision making, 77% of the respondents agree with the statement, 40% moderately agree with the statement and remaining 12% disagree with the statement. Hence there is need of encouragement for continuous improvement for all products and services in decision making process.

QUALITY STANDARD A GUID FOR ACTION, JUDGEMENT AND ATTITUDE FOR BUILDING TQM CULTURE

Table No: 3.19

Indicators	No of respondents	Percentage %
Strongly Agree	17	28
Agree	23	38
Moderately Agree	13	22
Disagree	7	12
Strongly Disagree	0	0
Total	**60**	**100**

Chart No: 3.19



Interpretation:

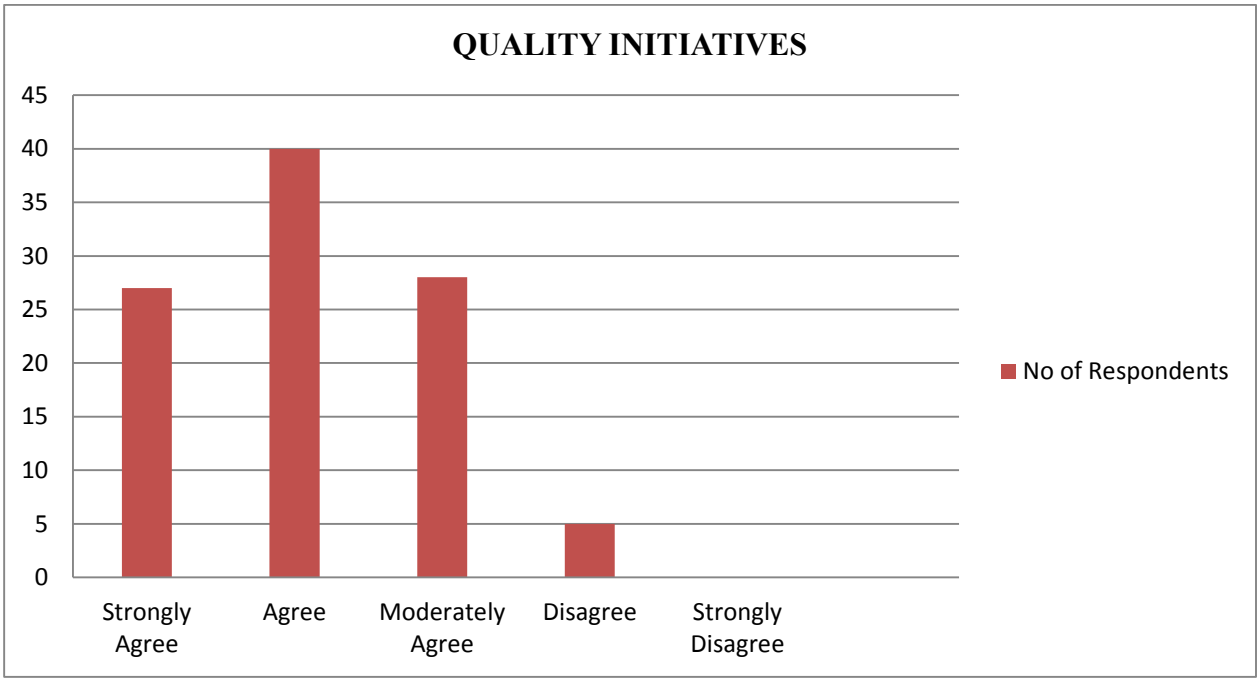
Out of the total respondents surveyed, 28% of employees strongly agreed to the statement that quality is indeed a guide for action, judgment as well as attitude for building TQM culture in HLL. 38% of the respondents agreed to this statement, 22% of them moderately agree to this and the remaining 12% of the employees disagreed to the statement.

QUALITY INITIATIVES HELP TO KEEP PRODUCTIVITY POSITIVE ALWAYS

Table No: 3.20

Indicators	No of respondents	Percentage %
Strongly Agree	16	27
Agree	24	40
Moderately Agree	17	28
Disagree	3	5
Strongly Disagree	0	0
Total	**60**	**100**

Chart No: 3.20



Interpretation:

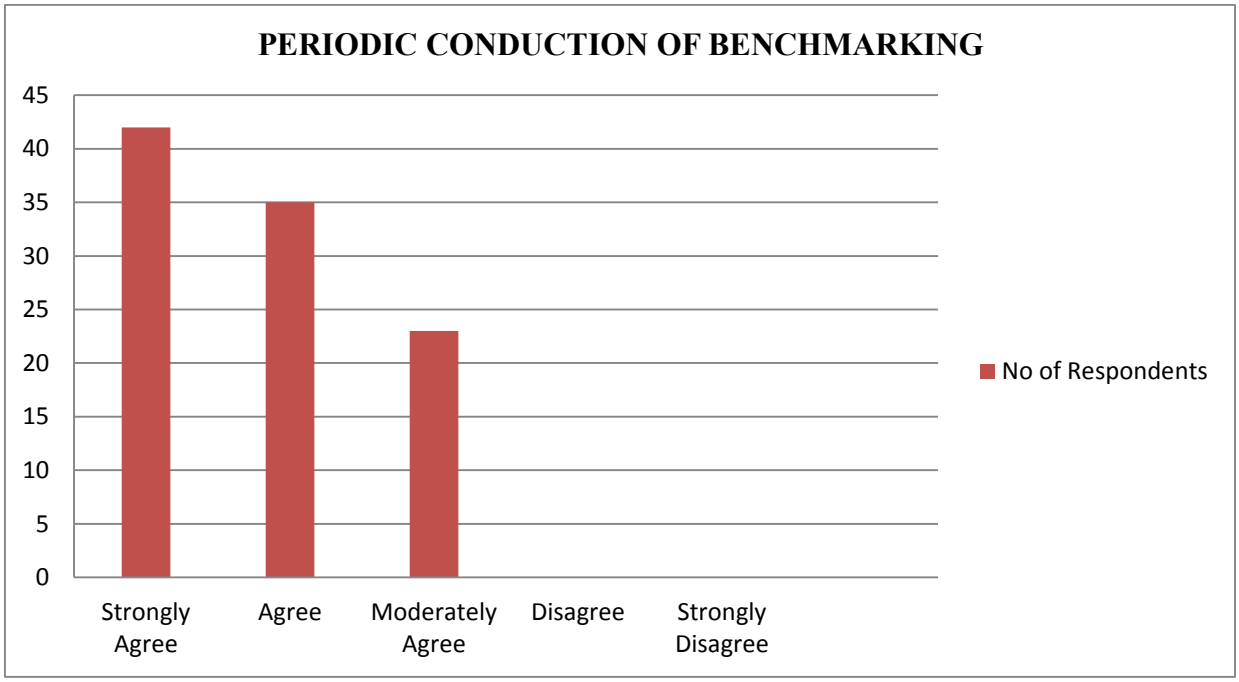
Out of the total respondents surveyed, 27% of the employees strongly agreed that quality based initiatives help in keeping the productivity positive. 40% of the respondents agreed with the statement, 28% moderately agreed to this and the rest 5% of the employees have shown disagreement to this statement.

PERIODIC CONDUCTION OF BENCHMARKING WITH OTHER FIRMS PROCESSES, WORK CULTURE AND PRATICES BY HLL

Table No: 3.21

Indicators	No of respondents	Percentage %
Strongly Agree	25	42
Agree	21	35
Moderately Agree	14	23
Disagree	0	0
Strongly Disagree	0	0
Total	**60**	**100**

Chart No: 3.21



Interpretation:

Out of the total respondents surveyed, 42% of the employees strongly agreed that there should be benchmarking with other firms periodically. 35% of the respondents agreed to this statement and the rest 23% moderately agreed to this. Hence, it can be seen that benchmarking is an essential concept for a firm to develop an edge over the market competitors.

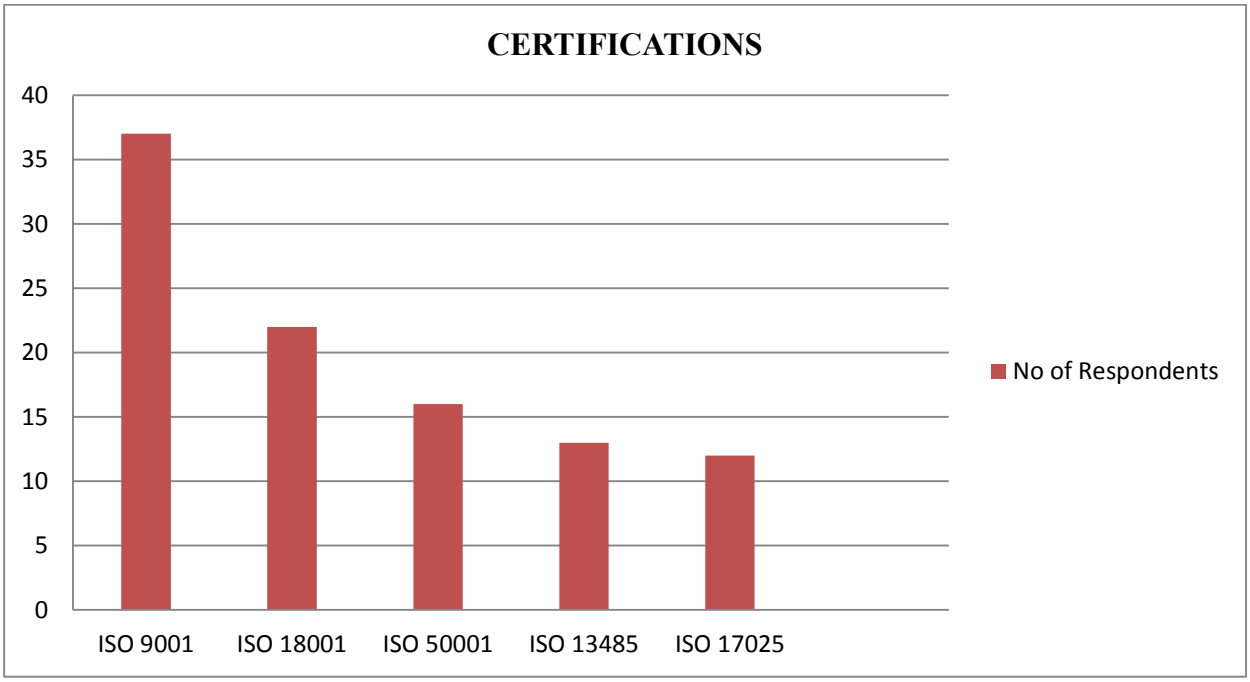
AWARNESS OF THE EMPLOYESS BASED ON THE FOLLOWING FACTORS

CERTIFICATIONS OBTAINED BY HLL

Table No: 3.22.1

Indicators	No of respondents	Percentage %
ISO 9001	22	37
ISO 18001	13	22
ISO 50001	10	16
ISO 13485	8	13
ISO 17025	7	12
Total	**60**	**100**

Chart No: 3.22.1



Interpretation:

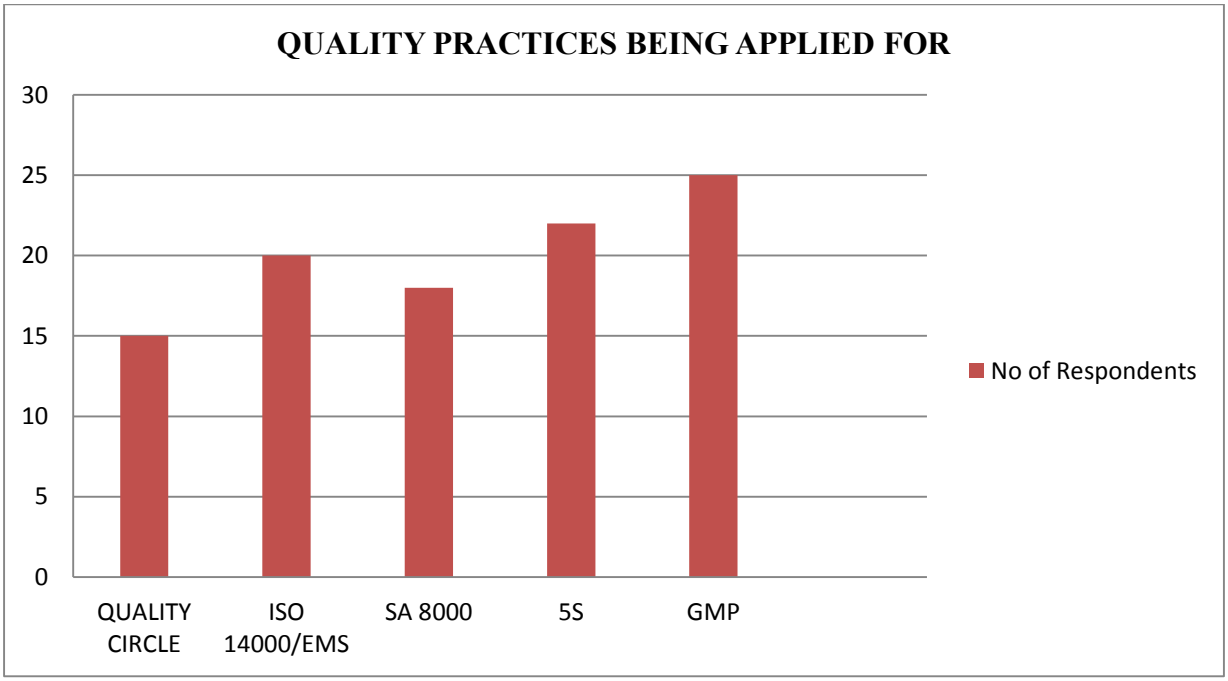
Out of the total respondents surveyed, 37% of the employees who are from all departments mostly know about ISO 9001, 22% know about ISO 18001, 16% know about ISO 50001, 13% know about ISO 13485 and 12% of the employees know about ISO 17025.

QUALITY PRACTICES HLL APPLYING FOR

Table No: 3.22.2

Indicators	No of respondents	Percentage %
QUALITY CIRCLE	9	15
ISO 14000/EMS	12	20
SA 8000	11	18
5S	13	22
GMP	15	25
Total	**60**	**100**

Chart No: 3.22.2



Interpretation:

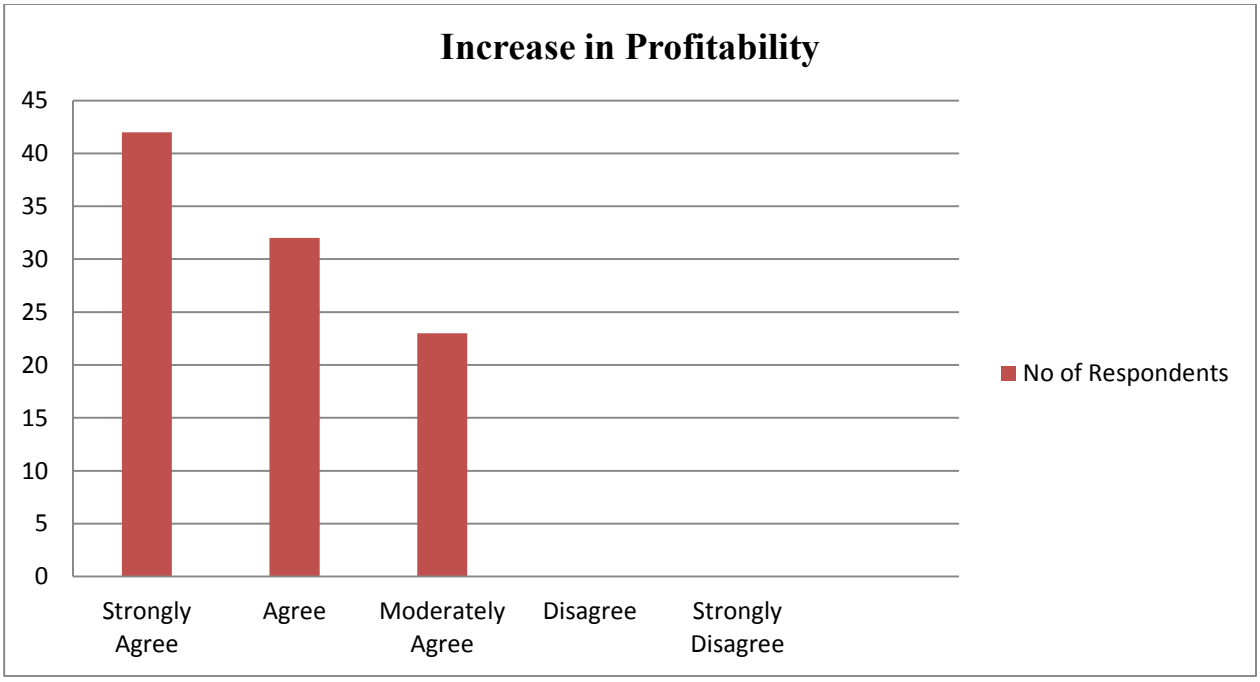
Out of the total respondents surveyed, 15% of the employees know about QUALITY CIRCLE, 20% know about ISO 14000/EMS, 18% know about SA8000, 22% know about 5S and the rest 25% know about GMP. This mostly shows that finance department, quality assurance department and engineering department know well about this aspect when compared to other departments.

INCREASE IN PROFITABILITY

Table No: 3.23

Indicators	No of respondents	Percentage %
Strongly Agree	25	42
Agree	19	32
Moderately Agree	14	23
Disagree	0	0
Strongly Disagree	0	0
Total	**60**	**100**

Chart No: 3.23



Interpretation:

Out of the total respondents surveyed, 42% of the employees strongly agreed that the profitability had increased due to the implementation of quality management in the organization, 32% of the respondents agree with the statement and only 23% of the employees moderately agreed to the statement.

HYPOTHESIS

SAMPLE SIZE –

The population consists of 600 employees from which 60 were identified for the sample size. The employees were from various departmental sections in HLL Life care limited Peroorkada plant.

FORMULA –

It is applicable for sample size less than 100 such that $n = N (1 + 0.0025N)$ where N is the population size.

Now the sample size can be computed as follows:

Total Number of employees in HLL Life Care Limited, Peroorkada Factory (N) = 600

Sample size of the employees taken for study based on the formula = $600 (1 + 0.0025 \times 600) = 60$

MAJOR FACTORS –

The major factors that were identified for the hypothesis were:

a) Employee Quality Awareness
b) Employee Effectiveness
c) Labor Turnover
d) Team Work
e) Rejections/Defects

The variables used were:

a) Strongly Agree
b) Agree

Out of 5 only two variables were used since majority of the respondents supported these variables as per the identified factors.

I. CHI-SQUARE ANALYSIS –

Null Hypothesis – Ho: There is no significant relation between the quality awareness and employee effectiveness.

Alternative Hypothesis – H1: There is significant relation between the quality awareness and employee effectiveness.

Table-

Table No:

Variables	Strongly Agree	Agree	Total
Strongly Agree	30	11	41
Agree	8	11	19
Total	**38**	**22**	**60**

Observation Table –

Table No:

Observed Frequency	Expected Frequency	O-E	$(O-E)^2$	$\frac{(O-E)^2}{E}$
30	25.96	4.04	16.3216	0.6287
11	15.03	-4.03	16.2409	1.0805
8	12.03	-4.03	16.2409	1.3500
11	6.96	4.04	16.3216	2.3450

$$\chi^2 = \Sigma \frac{(O-E)^2}{E}$$

= 5.4042

Degree of Freedom = (C-1) (R-1)

= (2-1) (2-1)

= 1

Level of significance = 0.05

Table value of Chi-square for degree of freedom 1 and level of significance 0.05 is 3.841

INTERPRETATION –

Since the calculated value is greater than the table value, null hypothesis Ho is rejected. Hence the alternative hypothesis H1 is accepted.

That means there exists a significant relation between the quality awareness of the employees and the employee effectiveness.

II. CHI-SQUARE ANALYSIS –

Null Hypothesis – Ho: There is no significant relation between the quality awareness and labor turnover.

Alternative Hypothesis – H1: There is significant relation between the quality awareness and labor turnover.

Table-

Table No:

Variables	Strongly Agree	Agree	Total
Strongly Agree	10	14	24
Agree	14	22	36
Total	**24**	**36**	**60**

Observation Table –

Table No:

Observed Frequency	Expected Frequency	O-E	$(O-E)^2$	$\frac{(O-E)^2}{E}$
10	9.6	0.4	0.16	0.0166
14	14.4	-0.4	0.16	0.0111
14	14.4	-0.4	0.16	0.0111
22	21.6	0.4	0.16	0.0007

$$\chi^2 = \Sigma \frac{(O-E)^2}{E}$$

= 0.0395

Degree of Freedom = (C-1) (R-1)

= (2-1) (2-1)

= 1

Level of significance = 0.05

Table value of Chi-square for degree of freedom 1 and level of significance 0.05 is 3.841

INTERPRETATION –

Since the calculated value is less than the table value, null hypothesis Ho is accepted. That means there does not exist a significant relation between the quality awareness and the labor turnover.

III. CHI-SQUARE ANALYSIS –

Null Hypothesis – Ho: There is no significant relation between the team work and rejections/defects.

Alternative Hypothesis – H1: There is significant relation between the team work and rejections/defects.

Table-

Table No:

Variables	Strongly Agree	Agree	Total
Strongly Agree	34	15	49
Agree	4	7	11
Total	**38**	**22**	**60**

Observation Table –

Table No:

Observed Frequency	Expected Frequency	O-E	$(O-E)^2$	$\frac{(O-E)^2}{E}$
34	31.033	3	9	0.2900
15	17.966	-2.966	8.7971	0.4896
4	6.9666	-2.966	8.7971	1.2716
7	4.0333	2.966	8.7971	2.1811

$$\chi^2 = \Sigma \frac{(O-E)^2}{E}$$

= 4.2323

Degree of Freedom = (C-1) (R-1)

= (2-1) (2-1)

= 1

Level of significance = 0.05

Table value of Chi-square for degree of freedom 1 and level of significance 0.05 is 3.841

INTERPRETATION –

Since the calculated value is greater than the table value, null hypothesis Ho is rejected. Hence the alternative hypothesis H1 is accepted.

That means there does exist a significant relation between the team work and rejections/defects.

FINDINGS SUGESSIONS

AND

CONCLUSION

FINDINGS

I. HLL is an efficient, profit making and well-organized industrial concern. It carries a good reputation in the Indian as well as the foreign markets. In its quest for improvement, it is working towards modernization and is also marching towards obtaining total quality environment.

II. Quality of the product is one of the major concerns of the company. Consequently it is paying adequate attention to the aspect of industrial safety and hygiene. It has formulated a well defined quality policy, has constituted a committee where daily meetings are held. All statutory provisions are being followed as also a number of non-statutory provisions are also incorporated to improve professional environment.

III. The company has comparatively higher percentage of educated and skilled workers, and by implementing and updated industrial standards, there have been no major faults in production so far.

IV. The firm has over 40 years of experience in the manufacture of latex based products and over the past decade polymer based products, with a highly proficient expert team of technical and other personnel to envision and implement any task at hand.

V. Though no major loss has taken place in the plant so far, the management at HLL is still vigilant and has kept all options of improving the industrial quality and production.

VI. Quality Assurance performance makes the product process more valuable also the company is using manual and electronic quality checking method for achieving utmost quality standard product.

VII. HLL has developed a strong support from not only the State Government and the Central Government but also valuable patronage of millions of customers within the domestic and global markets.

VIII. Ethicon, Mapper company (China), JK groups and polar lates are the major competitors of the company.

IX. Job satisfaction is relatively high among the workers in HLL the prominent reasons being job security, better wages, value creation but most importantly a solid working culture.

X. The company provides welfare facilities such as bus facility, medical check-up, restrooms, etc. to their employees.

XI. Even though HLL Life care is a Public sector company it functions more like a Private sector company with special emphasis to the work environment and dedication of the top management of the organization.

XII. Thoroughly modernized its existing manufacturing units indigenously utilize the expertise of its own technical personnel.

XIII. Setup indigenously world class production facilities for the manufacture of Condoms, Blood Transfusion Bags, Hydrocephalus shunt and copper-Ts.

XIV. The major departments of the company such as production, quality testing, store work for 24 hrs with three shifts throughout the year where the application of energy conservation methods, advanced effluent treatment system is done effectively.

XV. The company has been a consistent performer in delivering world class product without any hindrance from trade unions for the past few years. Its productivity rate as well as profitability sets it apart from other typical public sector companies like Keltron or even Air India.

Employee Responses:

1) 82% of the employees say that they satisfied with the salary
2) 68% of the employees say that their supervisor does his work competently.
3) 54% of the employees say that they are satisfied with the benefits received from HLL.
4) 42% of the employees say that they receive recognition for doing a good job.
5) 52% of the employees say that the policies of the company do not affect their job performance.
6) 86% of the employees say that they like their subordinates in HLL.
7) 66% of the employees say that their supervisor behaves fairly with them.
8) 90% of the employees say that they receive very good benefits from HLL.
9) 82% of the employees are satisfied with the rest room and sitting facilities.
10) 90% of the employees are satisfied with uniform, protector and safety equipments.
11) 62% of the employees are satisfied with canteen facilities
12) 80% of the employees are satisfied with education loan and allowances for education.
13) 90% of the employees are satisfied with the accommodation facilities and transport facilities.

RECOMMENDATIONS & SUGGESTIONS

The recommendations as well as suggestions has been discussed with the sample respondents covered regarding their satisfaction level focusing on five major aspects namely: Quality Management System, Place of work and work itself, amenities provided, Rewards as well as Recognition and Opportunities for growth in oneself.

Employees working in the administration are housed in a separate building, where all the amenities are made available to the employees. Similarly the company has also a technically drawn HR policy, which as consolidated manpower management issues, such as reward system, suggestion scheme, promotion policy and facilities etc. Yet certain amount of discontent has been noticed in the employees regarding certain aspects of their work life, which in-turn influence on their job satisfaction.

1. 5'S' practices must be practiced in form of plays, lectures, presentations or even mimes for keeping the employees more effective.
2. DMAIC approach can also be of great help to the organizational for its standard operating procedures (SOPs) and procedures around the quality subsystem, and create a simple checklist accordingly.
3. Mutual coordination between the employees and executives will improve the Total quality management as well as the work culture in the plant.
4. Build quality testing into your processes -- not at the end when it is more expensive to fix. Perform testing on an iterative basis. Resolve defective component problems as you encounter them without waiting for the entire testing cycle to complete. Implement automated testing if possible, because it executes without human intervention and results in a pass or fail outcome that is easy to interpret and act upon.
5. Value employee, customer, supplier and business partner feedback and input regarding solving product or service problems. Measure quality and productivity gains by increases in customer satisfaction. Use customer feedback to improve current products and influence the design of new ones. Leveraging customer requirements in your

process redesign efforts can help you focus your efforts on the most lucrative areas of business in your industry. For example, conduct surveys or focus groups to gather information to resolve top issues with your product or service. Prepare a report summarizing findings, and distribute the report throughout your organization to improve quality and productivity.

6. Use business strategies such as Six Sigma to improve quality and productivity and Create projects that define a problem, measure the current process, gather relevant data and analyze the data to validate the cause-and-effect relations.
7. In the quality assurance department where water leakage is tested it is recommended to renovate the machine that is being used because the results being given off are of varying nature.
8. More importance should be given for introducing new concepts as well as about the ongoing concepts in the plant about Total Quality Management with new trainees during the recruitment as well as training sessions.
9. The quality management should think about implementing more of the control charts especially in the area of operation.
10. Employees should be provided with an adequate as well as detailed performance so that the management as well as the particular employee can have a track of the job profile and this totally will help in improving the Quality Management of the organization.
11. If the efforts of the employees are channelized systematically with a long-term vision then there can be great improvement in the Total Quality Management culture in the plant.
12. The firm should encourage problem-solving approach through teamwork.
13. Quality equipment's are needed as in the Instrumentation section there are tools that experience frequent breakdowns hence the employee's time, effort and the firm's money, inventory space is wasted as a result.
14. Channelized and systematic efforts with a long-term vision will improve the quality culture of the organization.
15. In the ETD and QA section there can be usage of plastic crates instead of plastic bags as it can help in reducing the damage in condoms like overlapping and also the

minimal use of excess light plastic whose disposal maybe a issue as it cannot be easily recycled.

16. Having sound communication strategy training among the managers as well as the employees in how to communicate effectively can help in creating an even better workplace as well as higher satisfaction regarding the internal coordination of the organization and also for attaining an appreciable job satisfaction among the employees.
17. The concept of Quality Management can be very much productive if it is applied in the non-production functions of HLL in the plant.
18. Efforts should be taken by the management of HLL to introduce periodic competitions among the employees so as to keep up their working spirit high as well as develop the Quality Culture.
19. Timely awareness training should be given to the employees of the plant regarding the benefit of a sound Quality Management System in an organization such that how the company's mission and strategic goals can be achieved accordingly.
20. In the color coding system the drinking water indicator should be different since the plant is dealing with many chemicals that are toxic to human health thus for the safety of the employees.
21. Based on the Unit/ Department/ Section awareness on imparting quality management systems should be provided to all the employees of the organization respectively.
22. For improving the process control in the plant, the implementation of the 7 Quality Control tools would be recommended in all the areas of the plant.
23. There should be frequent conduction of benchmarking studies with respect to the corresponding business practices especially with the best companies to improve the performance of the plant as well as to boost the Total Quality Management culture.
24. The employees of the Quality team should be respected and looked up to for guidance by other departmental employees for their roles as well as contribution in developing and maintaining the Quality culture among the employees as a whole in the plant.
25. The documentation of the various works instructions as well as functioning of the departments should be standard comprehensive as well as clear in the relevant areas of the plant.

CONCLUSION

HLL has come from a long way since inception and through diversification, has developed enviable manufacturing infrastructure, by virtue of which the company has come a leading manufacturer of health care products and control devices. It has recorded consistently excellent working results. High productivity and good work atmosphere have also led to the reduction of rejections and wastage at different levels of production. Therefore the company seems to have prosperity in the future.

The project study is about "Effectiveness of Total Quality Management in HLL Peroorkada Plant, Trivandrum". The study was conducted for 45 days. HLL Lifecare Limited is the only company in the world manufacturing and marketing widest range of contraceptives. It is unique in providing a range of condoms, including female condoms, Intra Uterine Devices, Oral Contraceptive Pills-Steroidal, non-steroidal and emergency contraceptive pills; and Tubal Rings. HLL today process 1.316 billion condoms making it one of the world's leading manufacturer of condoms, accounting for nearly 10% of the global production capacity.

Quality system is one of the most important departments of every organization because the process of quality management is in a cyclic manner. The main benefits of a solid quality system are greater teamwork, reduction in defects, reduction of waste of raw materials, maximum productivity, employee awareness and efficiency also to reduce the cost and provide quality products at reasonable price to the consumers.

At last this project helped to understand the relationship between various factors that are associated to quality management in the organization. To conclude, HLL is truly on its way to achieve greater heights along with releasing its motto "Innovating for Health generation" by giving importance to their quality management system.

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BIBLIOGRAPHY

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APPENDIX

QUESTIONAIRE

Effectiveness of Quality Management of HLL Peroorkada Plant, Thiruvananthapuram

This questionnaire is essential for the primary data as part of my MBA program; the information collected will be kept confidential and will be used for the purpose of the project work only. I will be extremely grateful if you take some time to fill this up.

1. Name :

2. Gender : ☐ Male ☐ Female

3. Age : ☐ Below 25 ☐ 25-40 ☐ 40-55 ☐ Above 55

4. Grade :

5. Department :

6. Monthly Income

   ☐ Less than Rs. 15000 ☐ Rs. 15000 - Rs. 30000

   ☐ Rs. 30000 - Rs. 45000 ☐ Rs. 45000 and above

7) Does the Implementation of Quality standards aid in the creation of successful Business Strategy in HLL?

   ☐ Strongly Agree ☐ Agree ☐ neither Agree nor Disagree

   ☐ Disagree ☐ Strongly Disagree

8) Is Quality the standard to guide action, judgment as well as attitude for building the TQM culture in HLL?

☐ Strongly Agree ☐ Agree ☐ neither Agree nor Disagree

☐ Disagree ☐ Strongly Disagree

9) Is the 7QC tool needed for process control and implementation in HLL?

☐ Strongly Agree ☐ Agree ☐ neither Agree nor Disagree

☐ Disagree ☐ Strongly Disagree

10) Is encouragement needed for continuous improvement for all the products and services in decision making process?

☐ Strongly Agree ☐ Agree ☐ neither Agree nor Disagree

☐ Disagree ☐ Strongly Disagree

11) How much should the implementation of Quality improvement activities such as quality circles, quality team work and the suggestion system be in HLL?

☐ Great Extent ☐ Some Extent ☐ Little Extent

☐ No Extent

12) Tick the appropriate certification obtained by HLL

☐ ISO 9001 ☐ ISO 9002 ☐ ISO 18001 ☐ ISO 50001
☐ ISO 9003 ☐ QS 9000 ☐ ISO 13485 ☐ ISO 170025

The year in which it got first certified…….

13) What other quality practice(s) is HLL applying for?

☐ Quality Circle ☐ ISO 14000/EMS ☐ SA8000
☐ HACCP ☐ GMP ☐ 5S

Other quality practice if any then please mention them too……

14) If HLL develops its TQM further then which model do you think would be most appropriate?

☐ MBNQA Model ☐ ISO 9004 ☐ EFQM Model

☐ No specified model

Other model if any then please specify…….

15) Does the Quality system help to improve the organizational performance and provide a common direction for the employees of HLL?

☐ Strongly Agree ☐ Agree ☐ neither Agree nor Disagree

☐ Disagree ☐ Strongly Disagree

16) Should there be training for TQM for all employees for building a positive attitude so that they start caring for the organization?

☐ Strongly Believe ☐ Believe ☐ Neither Believe nor

☐ Ignore ☐ Dismiss

17) How much is the importance for the availability of standardized and clear documentation for the work method and process instructions in HLL?

☐ Strongly Agree ☐ Agree ☐ neither Agree nor Disagree

☐ Disagree ☐ Strongly Disagree

18) Do you believe in the transparent and effective Quality System for recognizing and detecting defects in the products of HLL?

☐ Strongly Agree ☐ Agree ☐ neither Agree nor Disagree

☐ Disagree ☐ Strongly Disagree

19) Will the Quality based initiatives help in keeping the productivity positive always?

☐ Strongly Agree ☐ Agree ☐ neither Agree nor Disagree

☐ Disagree ☐ Strongly Disagree

20) Should there be periodic conduction of benchmarking with other firms, their processes, work culture and practices by HLL?

☐ Strongly Agree ☐ Agree ☐ neither Agree nor Disagree

☐ Disagree ☐ Strongly Disagree

21) "Six Sigma focuses on improving quality and reduce waste by helping organization so as to service better, faster and cheaper". Do you think, it is the most effective technique of the Quality management in HLL?

☐ Yes ☐ No ☐ Don't Know

If No then which is the most effective technique being used currently…….

Thank You